Structuring architectural competitions as a competitive procurement process

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ABSTRACT

Purpose

Architectural competitions have been in existence for over 2,500 years. Past studies on this have focused on the architectural aspects, competition formats, design evaluation by jury members and its evolution. However, no comprehensive research has examined the way that architectural competitions can be structured as a competitive procurement process for contractual outcomes. This paper addresses that gap by examining the way in which a two-stage proposal procedure (as defined by ISO 10845) was used to convert the architectural ideas competition for two new universities in South Africa (SPU and UMP) into a public procurement process with contractual outcomes.

Design/methodology/approach

A case study was designed to examine (1) the procurement and contractual aspects of the two-stage proposal procedure within a public procurement context; (2) the challenges encountered in implementing the procurement procedure adopted; and (3) the outcomes of the procurement process. In total, 16 documents relating to the architectural competition were examined, using document analysis, to obtain insights into the procurement approach and processes. This was followed by in-depth interviews with the competition administrators to identify the key challenges encountered in implementing the procurement procedure. A content analysis method was used to analyse the qualitative data.

Findings

Only 40% of architects who expressed interest made submissions in the first stage. Those admitted to the second stage associated themselves with architectural practices and submitted tender offers which were evaluated on the basis of their financial offer, preference and quality. Most participants experienced difficulty with the procurement procedure due to unfamiliarity with the process and tight timescales. However, necessary clarifications provided by the client's team enabled them to respond appropriately and the procurement procedure proved effective for procuring innovative design ideas from nine talented architects. They were all based in small to medium-sized firms rather than large firms.

Originality/value

This paper fills an important gap in current understanding of how architectural competitions may be alternatively structured into a competitive procurement process, using empirical evidence from two architectural competitions. Architectural competitions have traditionally been used and characterized in the research literature primarily as an ideas competition rather than a competitive procurement process. This paper, therefore, extends current knowledge on the traditional way architectural competitions are generally used in practice and demonstrates through examination of two case studies how architectural competitions may be further extended and utilized as a competitive procurement process rather than just a process for obtaining ideas.

Keywords: Architectural competition, Case study, Public procurement, South Africa
Paper type: Case study

INTRODUCTION

Architectural competitions have been used in the construction industry for over 2,500 years to obtain design proposals and ideas. They are widely used internationally and mostly implemented in practice as an ideas competition. Architectural competitions are seldom conceptualized in the research literature or implemented in practice as a competitive public procurement process resulting in contractual outcomes (see Table 1). This is the main gap in the research literature that this paper addresses.

Table 1: Summary of published research on architectural competitions (1961 – 2020)

Authors	Year	Title	Article focus
Khan	2020	Architectural competitions: creating dialogues and promoting excellence?	Comparison of project and ideas competition
Güzelci and Sener	2019	An entropy-based design evaluation model for architectural competitions through multiple factors	Design evaluation by jury members
M arton and Katalin	2019	Architectural competitions of administrative buildings in Hungary between 1867 and 1918: style trends at the architectural competition for modernizing the ministry of agriculture in 1907	Architectural style diversity
Güzelci and Sener	2018	A design evaluation model for architectural competitions: measuring entropy of multiple factors in the case of municipality buildings	Design evaluation by jury members
Kiljunen	2018	A Finnish road design competition based on the service level method	Service-level method
Andersson and Ronn	2016	Searching for innovative design: architectural competitions in the silvering Swedish welfare state	Innovative design proposals
Hoffmann and Bachinger	2013	Refurbishment of an event centre - How building simulation was used to formulate some fundamental design guidelines for an architectural competition	Architectural design guidelines
Popelova	2013	Architectural and town planning competitions in the sixties: Their specific contribution to the history of Czechoslovak modern architecture	
RIBA	2012	Procurement Case Studies	Procurement issues
Kreiner	2012	Organizational Decision Mechanisms in an Architectural Competition	Evaluation and decision making
Van Neck	2012	An Apeldoorn 'tête-à-tête': The much-discussed architectural competition for a protestant church in Apeldoorn (1890-1891)	Competition format and process
Schlueter and Thesseling	2012	Facilitating environmental performance assessment in architectural design competitions utilizing a model-based workflow	EPA in competitions
Rönn	2011	Architectural quality in competitions: A dialogue based assessment of design proposals	Assessment of proposals
Kotze	2011	Architectural competition for the design of a new building in the John Moffat precinct	Description of a case
Chupin	2011	Judgement by design: Towards a model for studying and improving the competition process in architecture and urban design	Judgment
Van Wezemael	2011	Research on architectural competitions: Towards a theory of jury-based decision-making	Jury decision marking
Kreiner. *et al*	2011	Dialogues and the problems of knowing: Reinventing the architectural competition	Dialogues in competitions
Van Wezemael	2011	Mattering the res publica: The architectural competitions for the swiss federal post offices in the late 19th century as a Foucauldian dispositive	Description of a case
Labossière, and Bisby,	2010	Lessons Learned from a Design Competition for Structural Engineering Students	Lessons from a case
Manzoni *et al*	2010	Managing architectural competitions: Empirical evidence from practices in the UK and Italy	Managing the process
Kreiner	2010	Paradoxes of architectural competitions: The competition between efficiency, justice and creativity	Competing factors in decisions
Trumbull	2010	Challenges to western participation in shaping the urban landscape of post-socialist St. Petersburg: The failure of international competitions for iconic architectural projects	Description of a case
Linartas	2009	Tendencies of Lithuanian architectural competitions in 1999-2009	Description of a case
Linartas	2009	Review of architectural competitions of the soviet period in Lithuania	Literature review
Kazemian and Ronn	2009	Finnish architectural competitions: Structure, criteria and judgement process	Finnish practice
Targowski *et al*	2008	European Solidarity Centre, a symbol of the historic scenes of solidarity movement: FORT Architects, a polish firm, was selected as the winner of the Architectural Competition for the Conceptual Design of the European Solidarity Centre	Winner selection
ALGhalayini and ALGhamdi	2008	Automating the work at KAI-RCS: A case study on using an imaging database to administer and manage the International Competition for King Khaled University Campus Architectural Design	Competition administration

Authors	Year	Title	Article focus
Champy	2008	The 'reflective capacity' of professions confronted by international competition: The case of the French architectural profession	Reflective capacity
Rittmeyer *et al*	2006	Progress of the architectural competition: Learning center, the lausanne example	Progressive practices
Bisbrouck	2006	Architectural competition for EPFL library (ecole polytechnique fédérale de lausanne - Switzerland): Viewpoint of technical panel	Description of a case from Switzerland
Rodriguez and Siret	2006	Daylight at home: Differences between developers and architectural competition houses	Design comparison
Denzer *et al*	2006	The St. Kilian Viaduct - Competition of engineering and architectural layout, design, realization	Case description
Hines and Billington.	1998	Case Study of Bridge Design Competition	Bridge design
Tusek	1995	Elements for a periodisation of architectural and town planning competitions in Split since 1945	
Larson	1994	Architectural competitions as discursive events	Competition process
Kotilainen	1987	More humane health facilities: results of an architectural competition	Competition benefits
Rinn	1984	Once Again: Architectural Competition for the New Building of the Deutsche Bibliothek (German Library) in Bad Homburg, West Germany	Case description
Hulten	1961	Architectural competition for the new university hospital in Vienna	Case description

This paper examines the procurement process and the way in which framework contracts for the provision of architectural services for the construction of new buildings for two new universities in South Africa were created through an innovative application of a two-stage proposal procedure (as defined in ISO 10845-1) linked to an architectural ideas competition. This approach enabled design proposals and ideas and financial offers and contractual outcomes to be achieved simultaneously.

The Royal Institute of British Architects (RIBA) (2016, p. 6) describes a “design competition” as “any process inviting architects and other related design professionals to compete against each other for a commission or prize”. A discussion of architectural competition types frequently adopted internationally (project competitions and ideas competitions), the roles played by the major players involved in the process and innovative developments in the format of architectural competitions such as the creation of dialogues in the discourses can be found in an experiential-based article by Khan (2020) and some studies in Table 1 which are discussed later on in the literature review section.

While most past studies on architectural competitions (see Table 1) have focused on the architectural aspects and competition formats, the public procurement aspects of architectural competitions are an under-researched area, particularly with regard to the links between procurement and contractual arrangements as “design” is often dealt with in isolation from the process. This paper fills that gap by examining how a two-stage proposal procedure was linked to an architectural competition for two new universities in South Africa (see Figure 1).

ISO 10845 (Construction procurement – Part 1: processes, methods and procedures) defines procurement as the process which creates, manages and fulfils contracts. There are six principal activities associated with the procurement process, namely: (1) establish what is to be procured; (2) decide on procurement strategies in terms of contract, pricing and targeting strategy and procurement procedure; (3) solicit tender offers; (4) evaluate tender offers; (5) award contract; and (6) administer contracts and confirm compliance with requirements. Therefore, the procurement process includes the procedure for soliciting tender offers – and other activities. ISO 10845-1 defines a proposal procedure using the two-stage system as “non-financial proposals are called for. Tender offers are then invited from those tenderers that submit acceptable proposals based on revised procurement documents. Alternatively, a contract is negotiated with the tenderer scoring the highest number of evaluation points.” The purpose of adopting the two-stage proposal procedure was to convert the architectural competition into a public procurement process to obtain innovative design ideas and financial offers from talented architects as a basis to enter into framework contracts with them for the provision of architectural services for two new universities. Section 217 of the South African Constitution requires the public procurement system to be fair, equitable, transparent, competitive and cost-effective.

It should be clarified that the scope of this paper is not to examine the architectural or ideas aspects of the competition, but rather to focus on the public procurement and contractual aspects. While the mere application of an architectural competition is a fairly standard process internationally, the adoption of a

standard ISO 10845 procurement procedure by the client to convert an architectural competition into a procurement process for the dual purpose of obtaining design ideas and tender offers from architects for contractual purposes is an innovative practice that is examined in this paper as a contribution to knowledge.

Research aim and specific objectives

The research aim was to examine the innovative application of a two-stage proposal procedure to convert an architectural competition for two new universities in South Africa into a public procurement process to obtain innovative design ideas and tender offers for the appointment of talented architects on framework contract basis to provide architectural services.

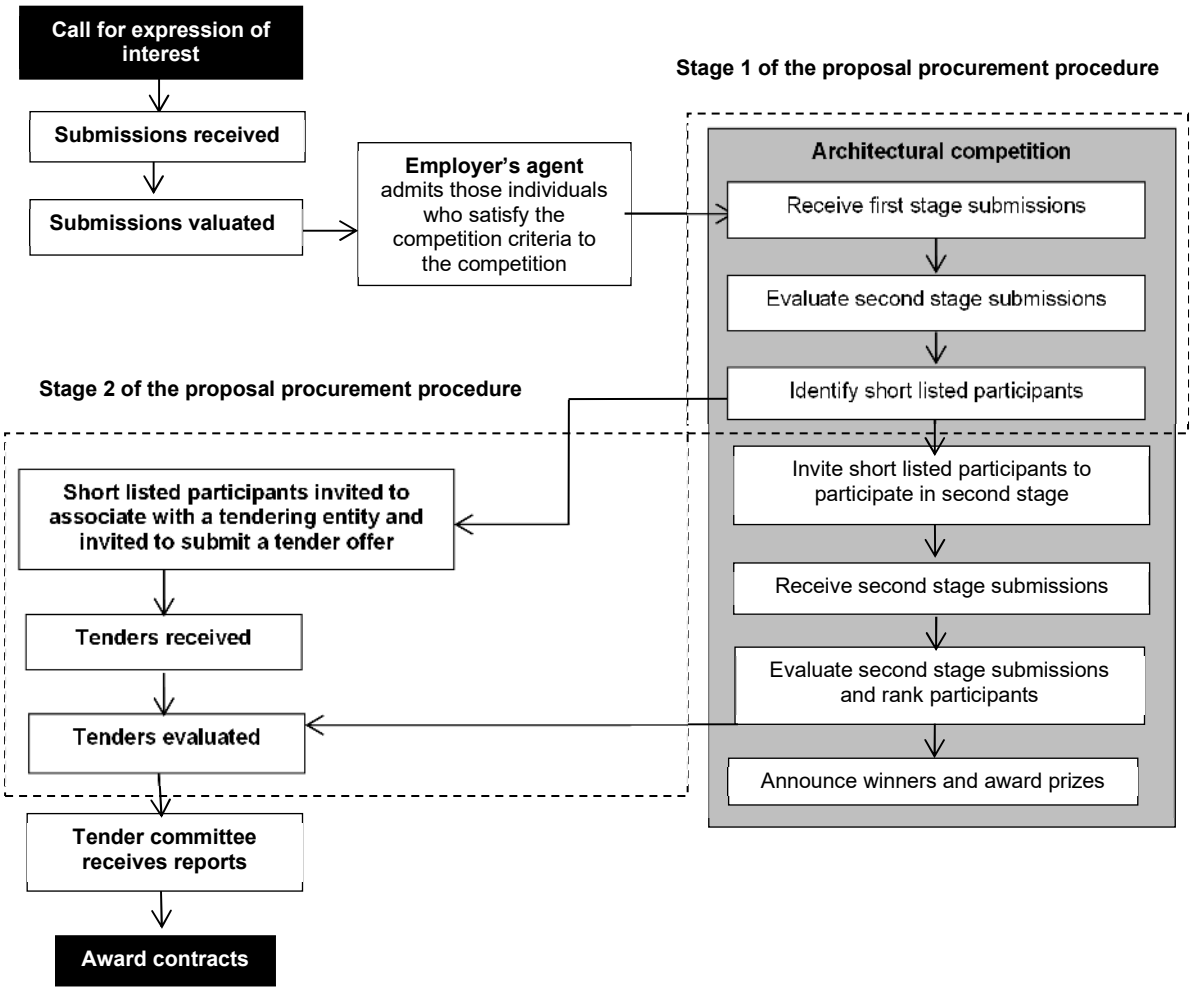

Figure 1: Two stage proposal procedure linked to an architectural competition

Three specific objectives were addressed:

1) To examine the procurement and contractual arrangements entailed in the two-stage proposal procurement procedure;

2) To ascertain the key challenges encountered in implementing the procurement procedure adopted for the architectural competition; and

3) To examine the procurement outcomes in terms of the characteristics of the winning architects and their architectural practices.

LITERATURE REVIEW

The starting point for the literature review was a comprehensive survey of published research on design and architectural competitions to establish key areas of knowledge in the existing literature. A detailed search of articles on design competition generally and architectural competition specifically was conducted in Scopus using “design competition” as a general keyword and then proceeding to use “architectural competition” as a specific keyword.

Research literature on architectural competitions

The bibliographic search revealed 359 articles in Scopus with “design competition” in the article title (published between 1930 and 2020) and 61 articles with “architectural competition” in the article title (published between 1961 and 2020). These articles provided the core framework for the literature review. They were examined to identify and review the seminal ones to assist in the development of a theoretical context for the current study. In total, 42 relevant articles reviewed for this paper are summarized in Table 1. A critical evaluation of the literature in Table 1 shows that the predominant focus of authors has been on the design aspects, competition formats, design evaluation by jury members, management of the process and innovations in the evolution of competitions such as the inclusion of dialogues. Little attention has been focused on the procurement and contractual aspects, particularly in a public sector context.

A paper by Kotze (2011) describes architectural competitions in South Africa over the years, particularly in relation to higher education infrastructure, and goes on to discuss the architectural competition for the new School of Construction Economics and Management (SCEM) building at the University of the Witwatersrand (Wits) in Johannesburg. In terms of the competition format for the SCEM building, Kotze (2011, p. 38) describes it as follows: “During the first stage, Gauteng-based architectural professionals were invited by the University to submit their professional profiles and portfolios of work. The documentation received from 17 architectural practices was evaluated by a panel of adjudicators. Five professionals were invited and remunerated to submit more detailed proposals. All submissions to the second stage of the competition were evaluated on an anonymous basis by the same panel of adjudicators.” The professional who was awarded the first prize was commissioned to provide the architectural services in accordance with the recommendations of the South African Institute of Architects (SAIA).

While peer-reviewed articles found in Scopus (see Table 1) and the paper by Kotze (2011) formed the core of the review of research literature, other experiential-based publications by professional bodies were reviewed for additional insights into architectural competitions. These included the Royal Institute of British Architects (2012) Design Competitions Guidance for Clients (24 pages), Architects’ Council of Europe (2004) Recommendations for Design Contests (3 pages), SAIA Rules and Guidelines for Endorsement of Architectural Competitions (19 pages), Royal Australian Institute of Architects (2003) Guidelines for Architectural Design Competitions (15 pages) and American Institute of Architects (2010) Handbook of Architectural Design Competitions (66 pages). These documents provided significant information on types of competition, competition rules, jury evaluation of design proposals and competition formats. They were, however, silent on how the competition could be linked to a competitive procurement process.

The paper by Kreiner (2010) characterizes an architectural competition as a social technology for picking winners and outlines three pillars of architectural competitions, namely: creativity (attractive entries), legitimacy (fair outcomes) and efficiency (sustainable investments of time and effort).

According to RIBA (2012), architectural competitions provide a successful design procurement model that increase quality, stimulate creativity and innovation and generate a range of ideas – often providing a platform to showcase new and emerging talent. However, the way that traditional competitions are organized, including the anonymous adjudication of design proposals, can often result in the selection of a “design” rather than a designer (Bergdoll, 1989). This shortcoming seems to have influenced recent developments, particularly in Nordic countries where architectural teams meet with the competition panel during the competition. On such occasions, they openly present and discuss their ideas and plans for the final design entry. This innovation has been described by Kreiner (2010) as “dialogue-based architectural competitions”.

The Scandinavian Journal of Management published a Special Issue (Vol 27) on Architectural Competitions in 2011. Three evidence-based contributions in the Issue dealt extensively with the subjective processes of sense-making, decision-making and judgement in architectural competitions (see Van Wezemael et al., 2011a, b; Chupin, 2011; Kreiner et al., 2011). These studies show that judgement processes in architectural competitions are complicated, complex, non-rational and non-linear procedures characterized by sense-making processes in which the performance to be judged (competition entries) and the criteria to judge intertwine.

Procurement and contract strategies

Due to the focus on this paper, it was necessary to briefly examine procurement and contract strategies in the context of processional services generally and architectural competitions specifically. ISO 10845-1: 2010 provides a significant amount of international guidance on procurement and contract strategies that may be adopted for procurement of professional services. Empirically, a survey on procurement of professional services published by RIBA (2012) provided evidence on methods for procuring architectural services, including use of architectural competitions. Although the data relates to the UK context, the principles are relevant for the theoretical context of this study. The RIBA (2012) survey found that in 2011, UK architectural firms spent 11% of their total turnover preparing OJEU process bids. Medium-sized and larger practices prepared more bids than smaller practices and their total spending for bid preparation would be higher in comparison. This evidence demonstrates that architectural firms invest a significant amount of resources to obtain work competitively.

The RIBA (2012) report discussed the high cost of competitive processes for procuring design such as the restricted pre-qualification questionnaires (PQQs) which was found to be used for 42% of all stage 1 bids. Other significant bid types were open bids and competitive pre-qualification. Design competitions, which are the focus of this paper, only accounted for 5% of the bids. Design competitions, which are primarily focused on design quality, were considered by some respondents be economical for bidders than two-stage procedures and are popular with practices (especially micro businesses).

In terms of procurement method for design and architectural services, architectural practices submitted 14,500 bids in 2011 of which approximately 6,500, the largest number, were on two-stage restricted procedures. Over half of all bids submitted were PQQs, which cost practices a median cost of £2,500 each. Two-stage restricted procedures had a 1 in 14 success rate. The use of a framework mini-competition route reduced this success rate further. The bid type with the least number of submitted bids was the competitive dialogue procedure, followed by negotiated procedure bids. Negotiated procedure bids were the least expensive to practices, with a success rate of 75% – the highest success rate for all bid types.

Framework agreements for design services were found to be growing in popularity (RIBA, 2012). In total, 13% of firms involved in the survey had participated in framework mini-competitions arising from framework agreements. Framework mini-competitions were found to be a significant glass ceiling for micro businesses. Practices achieving a single winning bid via any of the contracts awarded through the OJEU procedures frequently do not obtain any subsequent commissioned work. In total, 19% of design competitions (an estimated total of 845 bids in 2011) had over 100 bidders at a median cost of £5,000 to each practice. RIBA (2012) recommended that government should introduce ways of capping the number of tenderers to make procurement more manageable for public clients.

The summary of research literature (see Table 1) and the literature review on architectural competitions demonstrated that although a significant amount of literature exists on architectural competitions, little attention has been focused on the procurement and contractual aspects. Therefore, the focus on this research was to examine the way an architectural competition for a new universities in South Africa was converted into a public procurement process using a two-stage proposal procurement procedure (see Figure 1).

RESEARCH DESIGN AND METHODS

Given the research aim, an appropriate research methodology was required to conduct a study that was comprehensive, intensive and inductive (as explained by Mintzberg, 1973). It needed to be comprehensive to help capture the full scope of what was required to address the research objectives. It needed to be intensive to help probe deeply rather than superficially into the research objectives.

And it needed to be inductive to help develop the required knowledge from the particular cases of interest.

As the research was based on a specific case, which is the New Universities Project, it was considered that a case study research strategy would provide an appropriate means to achieve these imperatives and enable a variety of data collection methods to be applied to achieve the research aim and objectives (as explained in Yin, 2018 and Saunders et al., 2019). The chosen research strategy needed to help gain access to the relevant documents pertaining to the architectural competition, and it was also necessary to obtain information from those who set up and administered the architectural competition.

This informed the choice of two research methods for the ase study, namely document analyses and semi-structured interview. Document analysis provides a rigorous and systematic research method for reviewing, analysing and evaluating the contents of written documents (see Wach et al., 2013; Denscombe, 2014). Document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding and develop empirical knowledge (Bowen, 2009). Semi-structured interviews are those in-depth interviews where the respondents have to answer preset open-ended questions. Semi-structured interviews are based on semi-structured interview guide, which is a schematic presentation of questions or topics that need to be explored by the interviewer (see Fellows and Liu, 2015; Jamshed, 2014).

The research was conducted in two stages. The first stage entailed document analyses to generate a detailed understanding of all the issues pertaining to the procurement process of the design competition. The process adopted followed the five steps in Wach et al. (2013), namely inclusion criteria, collection of documents, articulating key areas for analysis, document coding and verification. The inclusion criteria were all documents relating to the architectural competition. The researchers collected and coded the different documents for SPU and UMP (see Table 2). These were examined to generate data on key areas of the entire procurement process (see Tables 3 and 4) and matters pertaining to each stage of the process. The relevant data examined for the first objective pertaining to the procurement processes in the two-stage proposal procedure were contained in the documents summarized in Table 2. These included design competition briefs, competition rules, jury reports, questions and answers during the competition process, design submissions by entrants and tender evaluation reports. Much of this data was available on the new universities website. Where any required data was not publicly available, it was obtained from the office of the New Universities Project Management Team (NUPMT) which was appointed by Wits and tasked with the responsibility to implement the project on behalf of the Department of Higher Education and Training (DHET). Contextual details of the project, the appointment of Wits University as Implementing Agent for the project and the composition and organizational structure of the NUPMT which oversaw the planning, design, procurement and delivery management arrangements for phase 1 of this 1.5bn Rand ($100m) Project can be found in Laryea and Watermeyer (2020). A closeout report by the NUPMT (NUPMT, 2018) also provided salient information about the architectural competition.

The second stage involved two in-depth interviews with the competition administrators. The competition administrators were not client representatives per se. They were independent people (registered architects with the SAIA) tasked with the responsibility to administer the competition independent of the NUPMT (see Table 5). They oversaw the entire competition process, and it was appropriate to interview them to ascertain all of the issues encountered in implementing the architectural competition using the chosen procurement procedure. The interviews lasted for about 90 min in each case and were semi-structured around three areas, namely: administration of the architectural competition; key challenges encountered by participants; and characteristics of the successful architects (see Table 5). The responses of the administrators were informed by the documents and experiences relating to the architectural competition process. The interviews were recorded, transcribed and analysed using content analysis for qualitative interpretation. A summary of key texts from the interviews is provided in Table 5. It should be noted that the choice of respondents for the interviews was guided by the research objectives. The interviews were primarily required to address the second objective which was to examine key issues experienced in implementing the procurement procedure. This was obtained from the competition administrators who oversaw the entire process. There was no need to interview architects directly as the difficulties experienced by the architects in the process were forwarded to the competition administrators in the form of queries for clarification. Hence, that data was already available in documented and reliable format and direct interviews with architects were not considered necessary.

Table 2: Summary of architectural competition documents reviewed and examined

Document code	Title of document	Date	No. of pages
D1	Development of a new university in Kimberley – Admission to an architectural ideas competition linked to the provision of architectural services over a term – Call for expression of interest	Feb 2013	10 pages
D2	Architectural Design Competition for the New University in Kimberley, Northern Cape – Stage 1: Competition Data, Briefing and Evaluation Criteria	May 2013	20 pages
D3	Architectural design competition for the new university in Kimberley Northern Cape – Stage One Administrators Adjudication Report	July 2013	6 pages
D4	Architectural Design Competition for the New University in Kimberley, Northern Cape – Stage 2: Competition Data, Briefing and Evaluation Criteria	July 2013	46 pages
D5	Jury Address on the Stage 2 Competition Adjudication	Sept 2013	4 pages
D6	Winning architects and architectural designs in Sol Plaatje University design competition announced – Media Statement to announce winners of design competition	Sept 2013	4 pages
D7	Architectural design competition for the new university in Kimberley Northern Cape – Stage Two Administrator's Adjudication Report	Oct 2013	6 pages
D8	Development of new university in the Northern Cape –Framework contract for the provision of architectural services for the new university campus in Kimberley – Tender evaluation report	Oct 2013	25 pages
D9	Closeout report of the new universities project management team on the development of new universities in Mpumalanga and the Northern Cape, 01 November 2011–31 July 2017, Chapter 8 Architectural design competition	July 2017	192 pages

Note: The documents were available for download on the new universities website and also discussed extensively in the Close Out report.

Finally, the data required to address the third objective relating to the outcomes of the procurement process in terms of the characteristics of the winning architects and their architectural practices was obtained from the jury reports, tender reports and the company profiles of the firms. Therefore, the data collected and examined was sufficient for addressing the research aim and specific objectives to a high degree of validity.

DATA COLLECTION

The way that the study was designed to structure the data collection was explained in the previous section together with some details of the documents examined and interviews. The data collection was conducted between 2014 and 2016 and updated when the closeout report for the project was published in 2018 (NUPMT, 2018). The data collection covered both the architectural competition for Sol Plaatje University (hereafter referred to as SPU) and the one for University of Mpumalanga (hereafter referred to as UMP).

The data collection covered all stages of the entire architectural competition process, which lasted for six months in each case, including the expression of interest; first stage; second stage; evaluation of tender offers; and selection and appointment of architects (see Table 3).

The architectural competition in the UMP case followed closely after the SPU competition and the principles were similar. The timelines for the two architectural competitions are summarized in Table 3. However, the eight architectural competition documents examined for the SPU case (see Table 2) are very similar to the eight documents in the UMP case. As the principles are the same, there is no need for repetition of the documents.

ANALYSIS AND RESULTS

A description of the "Two stage proposal procedure linked to an architectural competition" is presented in Figure 1. Analysis of the procurement process and outcomes based on data collected from the examination of documents summarized in Table 2 are presented in Tables 3 and 4. A summary of key texts from the semi-structured interviews with the competition administrators on challenges encountered in the procurement process are presented in Table 5. Analysis of the

procurement outcomes in terms of the characteristics of the winning architects and their architectural practices is presented in Table 6. Details of the results summarized in Figure 1 and Tables 3–6 are presented in line with the three specific objectives of the study.

Table 3: Key areas of analysis of the procurement process

Procurement process and activities	Sol Plaatje University (2013)	University of Mpumalanga (2013)
Expressions of interest		
Start and close dates	6-27 May	27 May – 20 June
Expressions of interest received	179	147
First stage of design competition		
Start and close dates	30 May – 11 July	24 June – 1 Aug
Architects who downloaded the Stage 1 brief	153	111
Number of submissions received	59	47
Jury composition	7 members	7 members
Jury adjudication	14th to 17th July	5th to 6th Aug
Number admitted to second stage	9	7
Second stage of design competition		
Start and close dates	19 July – 10 Sept	8 Aug – 11 Oct
Number of submissions received	9	7
Jury adjudication (same Jury as stage 1)	13-14 Sept	28-29 Oct
Number of submissions ranked by Jury	6	4
Announcement of competition “winners”	18 Sept	30 Oct
Tenders		
Start and close dates	19 July – 10 Sept	26 Aug – 11 Oct
Tenders received	9	7
Responsive tenders	6	4
Number of firms selected	5	4
Evaluation panel report finalised	17 September 2013	29 October 2013
Announcement of recommended tenderers	18 September 2013	30 October 2013

Table 4: Tendering outcomes for architectural services

	Sol Plaatje University	University of Mpumalanga
Maximum hourly rate excluding VAT but including travel costs		
Maximum	R 1 750	R 2 300
Minimum	R 1 050	R 1 100
Average	R 1 410	R 1 531
Cents per hour / R100 of total annual cost of employment excluding VAT but including travel costs		
Maximum	19 cents	17,5 cents
Minimum	13 cents	12 cents
Average	15,6 cents	14,9 cents
Effective adjustment factor to SACAP December 2011 fee scale based on the cost of construction including travelling costs*		
Maximum	1.13	1,14
Minimum	0,7	0,68
Average	0,93	0,92
Socio-economic		
Average B-BBEE score (max = 10)	5.4	4.8

* The effective adjustment factor = tendered F_{CON} x tendered cents per hour per R100 of total cost of employment / 16 (see NUPMT, 2018)

Table 5: Key texts form interview with competition administrators

Questions and Summary of responses
Q1 How was the process administered?
Q1.T1 There was a Competition administrator and two administrative assistants. We met once a week, sometimes twice a week and we met to discuss issues and make decisions.
Q2 What were the main challenges and issues encountered in the competition process?
Q2.T1 Time was the main issue because the universities had to be opened at a specific date. The timelines were so tight throughout everything. From a competitive point of view, it would have been useful to have more time
Q2.T2 To get everyone in the same place at the same time was challenging.
Q2.T3 Understanding exactly what was required by the NUPMT – What is it you want? And then structuring the initial brief and putting it forward in a way that architects would understand.
Q2.T4 Preparing the brief was time-consuming. Editing the first brief was a major challenge. We wanted it to have energy and convey excitement to the country. Once that was done and edited the others were relatively easier.
Q2.T5 Structuring the competition appropriately to meet requirements for SAIA endorsement – to keep it independent of us – independent from the NUPMT. Very important from a credibility point of view
Q2.T6 Putting rules and guidelines in place for the competition – reconciling SAIA rules with NUPMT procurement rules
Q2.T7 Sometimes we had to question and probe the procurement procedure. We had to give a comment on things from an architect's point of view. We did not know the procurement rules and all that – but we interrogated whether what they were asking the architects was practical and realistic
Q2.T8 Tender information – understanding it, and the time given to respond to it
Q2.T9 Discussions on quality over price, etc. 70% quality and 30% price weighting. We wanted the competition to be about quality of work. Assurance to entrants that quality was paramount. The procurement requirements in terms of the financial quote was a bit problematic for some tenderers
Q2.T10 Wording of the provision about copyright – in the end we went with how SAIA worded it
Q2.T11 Ensuring anonymity throughout and to work a system that will ensure fairness
Q2.T12 Selection, composition and availability of Jury members – The Jury needed to be a good mix of people – It took roughly about 2.5 months to put the Jury together. Only in June the first Jury was available.
Q2.T13 Personality issues that had to be dealt with. Fortunately we had Jurors who worked together well. The adjudication process went fine and there were no issues.
Q2.T14 From an admin point of view, there was a lot of coordination work to be done. Logistics – accommodation and travel, etc.
Q2.T15 We had to work out how the Jurors could ensure that the designs they actually thought were good got the rankings they deserved
Q3 What characteristics enabled the winning architects to come through successfully?
Q3.T1 Talented firms
Q3.T2 Innovations, firms that were able to push things the most
Q3.T4 Submissions that were very thorough
Q3.T4 Very interesting drawings and quite flamboyant drawings

Procurement procedure for the architectural competition

The stage 1 brief document (see Table 2) indicated three purposes for the architectural competition, namely: (1) to extract innovative designs, ideas and practices and to identify talented designers to participate in the development of the new universities; (2) to discover talent and skill which, but for a competition, would remain unknown; and (3) to promote the project through publicity and exhibitions.

However, a key need was the adoption and design of a suitable public procurement procedure to not only achieve the aforementioned objectives but also obtain tender offers enabling architects to be appointed on framework contract basis to provide architectural services. Figure 1 outlines the adopted procurement process that was developed around the selection methods provided for in ISO 10845-1:2010, an international standard based on the same procurement system objectives as the South African Constitution. It demonstrates the way that an architectural (ideas) competition was converted into a public procurement process for the award of contracts. The paper by Kotze (2011) and the evidence in Table 5 demonstrate that the competition format here was different from previous architectural competitions in South Africa.

Expressions of interest were called for to admit individuals to a two-stage architectural competition (see Figure 1). The first round submissions of the architectural competition formed the first stage of the proposal procedure. Tenders were then invited from those individuals that were identified by

the jury during the second stage of the proposal procedure. The ranking of the individual participants in the second round of the architectural competition formed the basis of the score for quality in the evaluation method for tenders where method 4 (financial offer, quality and preferences) was applied in the second stage of the proposal procedure.

Table 6: Characteristics of the winning architects and their firms

Architectural firms and architects selected to develop buildings for the new universities	Professional experience and Educational background (where information is available)	Office Location(s)	Size of practice, No. of architects
SPU Design Competition			
1) Wilkinson Architects in Joint Venture with Mashilo Lampbrechts Architects and GXY Architects – represented by Chris Wilkinson	Registered with SACAP in 1994	Pretoria	3
2) Savage + Dodd Architects cc – represented by Heather Dodd	Registered with SACAP in 1993 UCT, M.Arch, 1995 – 1997 Wits University, B.Arch, 1986 – 1991	Johannesburg	2
3) Designworkshop: SA – represented by Paul Wygers	Oxford Brookes, M.A Urban Design, 1995 – 1996 University of Natal, B.Arch., 1985 – 1990	Durban	20
4) Activate Architecture – represented by Michael Magner	Registered with SACAP in 1999 UCT GSB, PDP, 2005 – 2005 Wits University, BArch, 1992 – 1997	Johannesburg	11
5) StudioMAS architecture + Mas Architects – represented by Sean Mahoney	University of Natal, B Arch, 1990	Johannesburg, Cape Town	3
UMP Design Competition			
1) Cohen and Garson - represented by Fiona Garson	Registered with SACAP in 2007 Wits University, B.Arch, 1988	Johannesburg	3-5
2) Conco Bryan Architects - represented by Llewellyn Bryan	Registered with SACAP in 1976 University of Pretoria, BArch, 1974	Pietermaritzburg	3
3) TC Design Group (Pty) Ltd - represented by Mark Pencharz	Registered with SACAP in 1995	Johannesburg, Cape Town, Durban	5-8
4) Gapp Architects and Urban Designers (Pty) Ltd - represented by Caron Schnaid	Registered with SACAP in 2001	Johannesburg and Cape Town	10

Note(s): SACAP – South African Council for Architectural Profession
Professional registration dates identified on SACAP website http://www.sacapsa.com/
Educational background identified on LinkedIn profiles and company websites. Size of firm estimated from information on their company websites

The design competition was conducted in accordance with a set of Standard Conditions for a Design Competition specifically prepared for the competition (see Table 2) based on international best practice and The South African Institute of Architects Rules and Guidelines for Endorsement of Architectural Competitions. These conditions bound the competition administrator, participants, the jury, the promoter and technical consultants to conduct themselves in a particular manner. The provisions also established what a participant was required to do in order to make a compliant submission as well as the actions and functions of the competition administrator, the jury and the promoter. These conditions were designed to ensure that the identity of any particular participant during the process was not known to the administrator, the jury or those involved in the procurement process until the second stage of the architectural competition was concluded. Admission into the competition was limited to registered architects in terms of South Africa's Architectural Profession Act of 2000. The architectural competition was endorsed by the SAIA and run based on the South African Institute of Architects Rules and Guidelines for Endorsement of Architectural Competitions. The competition lasted for approximately five months in each case. Tables 3 and 4 provide a summary of the procurement process and outcomes.

Expression of interest stage

The entrants in both cases were required to submit an expression of interest and complete an Architectural Competition Application Form. Respondents had to confirm that they were professional architects registered with the South African Council for the Architectural Profession (SACAP); indicate their willingness to associate themselves with an architectural practice(s) (as defined in the South African Council for the Architectural Profession's Code of Professional

Conduct); submit a tender offer for architectural services if selected to participate in the second stage; and abide by the Standard Conditions for a Design Competition. In total, 153 expressions of interest were received for SPU and 111 for UMP – a significant level of interest in the competition. The competition brief documents were made available on the competition website for download and competitors were given 42 and 38 days to prepare their stage 1 submission for SPU and UMP, respectively (see Table 3).

First stage of architectural competition
Participants in the first stage were provided with a brief which included a spatial development framework and were required to provide a brief outline of their understanding on five key issues using sketches, diagrams, images and text and their proposed methodology and approach in not more than ten A4 pages.

The first stage could be described as an exploratory phase (as described in various studies such as Kreiner, 2010). The main task here was for respondents to describe their "approach and methodology" in response to the brief documents. Provision was made for participants to ask questions to clarify their understanding of any issues. The questions were collated on a weekly basis and answers were subsequently posted on the website for the benefit of all participants. Ultimately, a total of 59 submissions were received in the case of SPU, representing 39% of architects who initially expressed interest, and 47 were received in the case of UMP, representing 42% of architects who initially expressed interest.

A jury comprising seven members adjudicated the submissions over a period of three days in the case of SPU and two days in the case of UMP (see Table 3). The adjudication process was overseen by a competition administrator, who assisted with any queries. Jurors adjudicated the submissions anonymously. All submissions received were scored. The adjudication process led to the selection of nine submissions in the case of SPU and seven in the case of UMP to enter into the second stage (see Table 3).

Second stage of architectural competition
Participants in the second stage were required to submit detailed design proposals based on a full brief, including detailed precinct plans (stage 2 brief). The focus at this stage was on the design of buildings and detailed elaboration of a portion of the campus. Participants admitted to the second stage were also invited to associate themselves with architectural practices and submit tender offers. An honorarium was awarded by the jury to those who satisfactorily completed the second stage.

The assessment of design proposals in stage 2 was based on submissions of a design narrative, drawings and models. In order to assess and evaluate the submissions on an equitable basis, the stage 2 brief also included criteria that were to be addressed in the submission and were also used by the jury to assess the competition entries (NUPMT, 2018).

The jury ranked only six of the nine participants in the SPU case and only four out of the seven participants in the UMP case (see Table 3). The stage 2 submissions comprised both architectural designs and a tender offer for the provision of architectural services. The tender offers were only opened and evaluated after the second-stage adjudication was complete which demonstrates that the paramount variable was design quality and innovative ideas.

Tender evaluation and procurement outcomes
Tenders were evaluated on the basis of their financial offer, preference and quality (see ISO 10845-1). The score for quality was based solely on the ranking of the competition jury. The financial offer was adjusted for preferences using the 90:10 preference points system in accordance with the provisions of South Africa's Preferential Procurement Policy Framework Act of 2002 with all the points for preference being allocated to the tenderer's contribution to Broad-Based Black Economic Empowerment. Points for quality (maximum 100) were combined with the preference points system as other objective criteria in terms of the Preferential Procurement Policy Framework Act.

A weighting of financial offer adjusted for a preference to quality of 0.3:0.7 was selected to ensure that the architectural practices with the highest ranked participants would be awarded a

contract provided that they tendered reasonable financial parameters and obtained some points for preference. Tenderers who failed to be ranked and awarded a prize by the jury were eliminated from contention. Each selected architect was appointed on a three-year framework agreement based on the NEC3 Professional Services Contract (PSC) Option G (Term Service Contract) in accordance with the approach described by Watermeyer (2013).

The outcomes are summarized in Table 4 and Table 6. By way of comparison, the South African Council for the Architectural Profession's (SACAP) recommended time-based rates (effective from 1 January 2012) at the time, exclusive of VAT, were R 2 400 per hour for specialists and R 1 875 per hour for a partner of equity holder with more than ten years of experience and 16.5–22.5 cents, depending upon the level of responsibility they carry. The effective adjustment to the SACAP-recommended fees based on a percentage of construction cost was on average approximately 8% lower than those published by SACAP. The SACAP-recommended fees for time charges as well as for percentage of construction fees exclude travelling costs; hence, this competitive public procurement procedure yielded significant cost savings in comparison to the recommended tariff of fees without sacrificing quality.

Challenges encountered in the procurement process

Two detailed interviews were conducted with the competition administrators to ascertain from their perspective the key challenges encountered in the design competition. A summary of key texts from the interview transcripts is presented in Table 5. The main difficulties architects experienced with the procurement process were in relation to preparing the financial offer required and the tight timescales available to respond to the tender information which they did not fully understand as the procedure was new to them. From the perspective of the competition administrators, the key challenge was in relation to structuring the competition appropriately to meet the requirements for SAIA endorsement and reconciling SAIA architectural competition rules with South African public procurement rules to ensure it was practical and realistic for architects. In total, 15 challenges encountered in the procurement process are summarized in Table 5 and discussed in the next section.

DISCUSSION OF RESULTS

The research aim was to examine the procurement and contractual aspects of the architectural competition used to procure design proposals and tender offers for two universities in South Africa within the prevailing public sector regime. Three points are discussed in line with the objectives.

Procurement and contractual arrangements

The first research objective related to the procurement process and contracting strategies applied. The procurement procedure was a two-stage proposal procedure, linked to an architectural competition (as demonstrated in Figure 1) and located within a public procurement regime. Although there was a high level of expressions of interest, only 40% actually made submissions, representing a significant drop in the level of interest once they had downloaded the brief (see Table 3). A range of factors may account for this and represents one area for further research.

The procurement procedure took approximately five months to implement successfully in each case (see Table 3). Although this may seem a significant amount of time, the interviews with competition administrators showed that for a design competition of this nature, the time did not seem sufficient and the participants would have preferred to have more time to compose their design ideas and prepare their tender offers (see Table 5). However, the design outcomes adjudicated in the second stage and the tender outcomes (see Table 4) clearly indicate that the procurement procedure helped to achieve the intended objectives and, in that sense, it demonstrated its fitness for purpose.

The purpose of the tender process was to enable up to five framework contracts to be awarded following the conclusion of an architectural design competition. In terms of procurement strategy, the pricing strategy was based on time-based charges, lump or percentage of construction cost based on modified tariffs of fees published by statutory councils (see Table 4 and NUPMT, 2018 and Watermeyer et al., 2018). The form of contract used was the NEC3 Professional Service Contract

(Option G). The targeting strategy was the preference for Broad-Based Black Economic Empowerment. The tender evaluation method adopted was method 4 (ISO 10845: 2010-1) (30 points for financial offer adjusted for preference and 70 points for quality). The score for quality was based solely on the ranking of the judges.

The RIBA (2012) research on procurement practices for design services in the United Kingdom indicated a growing use of framework agreements for architects. However, this was in relation to appointment of architects into the framework of an organization, and whenever there was a need for design services, a mini-competition is conducted to select from the pool of framework architects. Here, the nature of the framework contract is different. The design competition was concluded and then each of the nine winning architects was appointed onto a three-year framework contract to provide design services for the new universities. There is little research literature on procurement and contractual aspects of an architectural competition (see Table 1) or literature of a previous case where a two-stage proposal procedure has been applied to an architectural competition, particularly in a public procurement context. Therefore, this case represents a significant contribution to the existing literature on procurement and contractual aspects of architectural competitions (see Table 1).

Key challenges encountered in the procurement process

The second research objective was to ascertain key challenges encountered by the competition administrators and participating architects in relation to the procurement and contracting arrangements adopted. The evidence in Table 5 shows 15 challenges in the procurement process identified from interviews with the competition administrators. These challenges experienced by the participants were mostly as a result of the tight timescales and procurement procedure which they were not familiar with.

The data shows that organizing a design competition of the scale and magnitude here requires considerable resources, coordination effort and taking into account many complex factors as demonstrated by the 2.5 months taken to do a jury composition (see Table 5). Most of the key challenges experienced around coordination and organization are likely to be similar in other cases summarized in Table 1. The key difference here was in relation to the public procurement procedure adopted and the fact that many architects did not seem familiar with the procurement process that was used (as demonstrated in the comments summarized in Table 5). Thus, the adoption of a particular procurement procedure to convert an architectural competition into a public procurement process requires careful consideration and sufficient interaction with the participants to clarify their questions and concerns to make such a process work successfully.

The difficulty experienced by the competition administrators and architects in relation to the procurement procedure may be explained from two perspectives. First, tendering for professional fees is not a common practice for built environment practitioners in South Africa where the charges for professional services are traditionally based on a tariff of fees published by the professional bodies (see Laryea and Watermeyer, 2020). Second, the use of alternative procurement mechanisms such as framework contracts and NEC3 contracts which some participants were not familiar with requires time to fully comprehend and respond to properly. Notably, ensuring anonymity in the architectural competition precluded the conducting of a clarification meeting. This is one area where the use of dialogue in competitions (see Jacobsen et al., 2010 and Khan, 2020) may be advantageous.

Procurement outcomes and characteristics of the winning architects and their firms

The third research objective related to the outcomes of the procurement process in terms of the characteristics of the winning architects and their firms. The design competition was formulated to help identify talented designers and generate innovative design ideas for the development of the new universities' buildings. Therefore, what type of architects and firms proved capable of responding to the needs of the client? This question was posed to the competition administrators to ascertain their view on what the architects who came through successfully did differently. Four key characteristics mentioned showed that (1) they were based in talented firms; (2) they offered innovations; (3) their submissions were very thorough; and (4) their drawings were very interesting and quite flamboyant (see Table 5).

Further research was conducted to ascertain more about the characteristics of the winning architects and their firms (see Table 6). The characteristics of the winning architects and their firms such as their

educational background, years of professional experience and firm size were used as indicators or measures of the characteristics of these architects and their firms. The data was collected from various sources including the SACAP website, their LinkedIn profiles and their company profiles/websites where most of the information was publicly available. A considerable amount of the information required was available on the platforms described and that was sufficient to discuss the question.

The evidence demonstrates two key points which require further research. First, the nine winning architects were mostly directors and owners of architectural practice firms so they were clearly experienced architects. Seven of them completed their education or registration with SACAP between 1988 and 1997 (see Table 6). Their professional registration dates were between 1976 and 2001; hence, their professional experience as at 2013 spanned between 15 and 39 years although the average professional experience was roughly 23 years which reflects a good point of intersection between two ends of a professional career. The innovative design proposals and solutions sought by the client were adjudged to have come from the nine architects with these characteristics. Second, the winning architects were not necessarily practicing in large-size firms. Most of them were associated with small to medium-sized firms of architects (see Table 6). The innovative design proposals and solutions sought by the client were adjudged to have come from architects in these types of firms. Linking this observation to the research by Sexton et al. (2001, p. 35), it is explained that "The owner(s) of small construction firms have the necessary power to ensure quick decision-making and innovation activity to take place in response to rapidly shifting market and project conditions and client demands; in effect, creating an agile firm. These triggers for innovation are predominantly filtered and prioritized by the owner(s) of the firm." Further research is needed to develop a better understanding of how innovative thought and ideas generate in the context of different-sized architectural firms.

CONCLUSION

Three main conclusions and lessons learned from the study are as follows:

- First, a two-stage proposal procedure was adopted to convert the architectural competition into a public procurement process to obtain design ideas and tender (financial) offers. This finding demonstrates that while the adoption of a standard procurement procedure may be used successfully to convert an architectural competition into a procurement process, this can entail significant challenges in implementation which requires proper understanding and leadership of the approach by the client team as a condition for success.

- Second, the key challenges encountered in implementing the procurement procedure were in relation to combining different organizational rules and engaging participants of a particular market using an innovative approach they were not familiar with. This finding demonstrates that adopting an innovative procurement procedure to convert an architectural competition into a procurement process requires significant guidance and interaction with the participants for successful implementation.

- Third, in terms of the procurement outcomes, the procurement procedure proved effective for achieving the objectives of securing innovative design proposals and tender offers to enable framework contracts to be entered with the winning architects. The innovative design ideas sought by the client were adjudged to have come from the nine talented architects with an average professional experience of 23 years, and most of them came from small to medium-sized firms rather than large firms. This finding points to a possible relationship between innovation and firm size which requires further research in the context of architectural practice.

This paper fills an important gap in current understanding of how architectural or ideas competitions may be structured into a competitive procurement process, using empirical evidence from two architectural competitions in South Africa. Architectural competitions have traditionally been used in practice and characterized in the research literature primarily as an ideas competition rather than a competitive procurement process. This paper, therefore, extends current knowledge on the traditional way architectural competitions are generally used in practice and demonstrates through examination of two cases how architectural competitions may be further extended and utilized as a competitive procurement process rather than just a process for obtaining ideas proposals.

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