Procurement of Consulting Engineering Services

Part 1: The Guideline

March 2023



Procurement Guideline for Consulting Engineering Services

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"Your Partner in Enabling Consulting Engineering Excellence"

Consulting Engineers South Africa (CESA) is a voluntary association of Consulting Engineering firms with a member base across the country totalling around 600 companies. CESA is the custodian of the wellbeing of the industry supported by member firms who employ approximately 17500 people. CESA members are compelled to subscribe to upholding the integrity of the industry by adhering to a professional code of ethics providing quality and cost-effective professional consulting engineering services. The organisation serves as a channel for Clients to address industry concerns while at the same time providing a platform for the sharing of information with the aim of assisting in optimising the planning and delivery of infrastructure projects both in the public and private sector.

CESA is committed to the promotion of excellence in the consulting engineering industry on behalf of its members and stakeholders. Through its members, CESA seeks to continuously improve the quality of life of people by interpreting the environment and pioneering change in partnering with all key stakeholders. In so doing, CESA strives to enhance the industry and provide a credible impact on all South Africans.

Key Focus Areas

CESA has identified the following strategic direction for the future of the organisation:

- To drive Sustainable Transformation
- To maintain standards of Professionalism and Quality Management
- Provide Business Support to Members and Clients with emphasis on Procurement
- Build Partnerships with Government and other Stakeholders
- Ensure that good Governance and Integrity prevail within the industry and profession
- Create an awareness among consulting engineers of issues affecting the industry

CESA Member Firms

- Adhere to Quality Management Systems, a Sustainability Reporting Framework, a Business Integrity Management System (BIMS) and the CESA Code of Conduct
- Offer a commitment to continuous education and to the upliftment of their staff and the communities they serve. Many firms have empowerment programmes, contribute to bursary schemes, provide Enterprise Development Initiatives within the industry, and assist with the growth of professionals and construction companies.
- Adhere to the Construction Industry Sector Charter as gazetted in terms of Section 9 of Broad Based Black Economic Empowerment (BBBEE), which supports transformation and is the basis on which public sector procurement takes place.
- Carry a required level of Professional Indemnity Insurance, which provides clients with financial recourse in the event of non-performance, insufficient design, failure, or neglect caused by the member firm.

PREFACE

This Guide reflects what is considered best practice today for Clients and Consulting Engineers – to appropriately invite and respond to calls for consulting engineering services and to deliver these services in a true value–added and sustainable context which will ensure better environment for our communities. It incorporates the requirements of the National Treasury's Framework for Infrastructure Development and Procurement Management (FIDPM) published under Instruction 03 of 2019/2020 and the Local Government Framework for Infrastructure Delivery and Procurement Management (LGFIDPM) published under MFMA Circular No. 106 of 01 October 2020.

The contents of this Guide focus on suggestions to Clients in requesting services and advice to Consulting Engineers in framing their responses to these requests. This has been done in order to better inform the procurement process. Wherever possible the terminology used in the Guide has been aligned to reflect the terminology and methodology contained in the FIDPM, as well as the Engineering Council of South Africa (ECSA) documentation.

Part 1 of the guideline is structured as follows:

- CHAPTER 1. LIFE-CYCLE OF INFRASTRUCTURE An outline of the typical life cycle of infrastructure as background.
- CHAPTER 2. THE LEGAL ENVIRONMENT A summary of the relevant legislation, regulations and National Treasury instructions and guidelines applicable to the procurement of consulting engineering services.
- CHAPTER 3. GENERAL PROCUREMENT CONSIDERATIONS- Legislation and objectives of procuring consulting engineering services
- **CHAPTER 4. POLICY STATEMENT ON BUSINESS INTEGRITY** An extract from the CESA Guideline on Business Integrity with which member firms are required to comply.
- CHAPTER 5. INFRASTRUCTURE DELIVERY AND PROCUREMENT A high level description of the processes to be followed by a client when procuring consulting engineering services.
- CHAPTER 6. PROCUREMENT GATES 1 AND 2 The requirements for procurement gates 1 (Initiate Procurement Process) and 2 (Develop Procurement Strategy) are discussed together with the sub-processes making up the minimum requirements for each procurement gate.
- CHAPTER 7. PROCUREMENT GATE 3: PREPARE PROCUREMENT DOCUMENTS provides guidance on the structure and contents of the tender data, functionality requirements and contract data making up a request for proposal document.
- CHAPTER 8. SOLICIT TENDERS, EVALUATE AND AWARD This covers Procurement Gates 5, 6 and 7 of the FIDPM process with guidelines on the evaluation and the risk analysis aspects leading to award.
- **CHAPTER 9. PROCUREMENT GATE 8** Covers the performance monitoring of a professional services contract.

Part 2 of the Guideline contains a pro forma/template **Request For Proposals (RFP)** document which can be used by clients for the procurement of consulting engineering services.

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1 THE LIFE-CYCLE OF INFRASTRUCTURE

1.1 Introduction

The intention of this Manual is to provide guidance to clients regarding the procurement of consulting engineering services and the role of consulting engineers in the infrastructure life cycle. This manual deals only with the contracting strategy "Design by Client", and the associated procurement of consulting engineering services, where a consulting engineer is appointed to provide the design services on behalf of the client, as well as the contract administration and close out services during the construction stage. Under this strategy, a contractor is appointed to construct the works.

This chapter deals broadly with the different types of infrastructure projects encountered in South Africa and the importance of selecting an appropriately qualified and experienced consulting engineer with adequate resources for the project at hand. The role of the consulting engineer both in delivering the project and optimising its costs over the entire life-cycle of the infrastructure is also highlighted.

1.2 Why Appoint a Consulting Engineer?

Globally, successful infrastructure delivery is dependent on input by persons with suitable technical skills, experience and resources who are able to assist and support the owner throughout the project life cycle. Consulting engineers are ideally placed to provide the required services to achieve this goal.

Generally most infrastructure projects in South Africa may be classified as one of two different types:

- building projects
- engineering projects

Examples of building infrastructure in the public sector include office buildings, hospitals and health care facilities, schools and educational buildings, airport buildings, correctional services, museums, libraries, conference facilities and other buildings. Depending on the nature, size and complexity of the project most building projects in South Africa traditionally require a multi-disciplinary team of professional service providers to assist the client in the project delivery process. The team may include architects, quantity surveyors, project managers, civil, structural, mechanical and electrical engineers as well a variety of specialist service providers such as environmental scientists, health and safety agents, geotechnical engineers, etc.

Examples of engineering infrastructure include roads, bridges, dams, airport runways, municipal services (civil and electrical), pipelines, railways and harbours, airport runways, stormwater management systems, water treatment works, etc. The professional services required for engineering projects can be provided by consulting engineers, and depending on the nature, size and complexity of the project, may involve just a single consulting engineer or possibly a team comprising several different engineering disciplines. Many consulting engineering firms in South Africa offer multi-disciplinary services to cater for a wide range of infrastructure categories.

For a client to have confidence that a consulting engineering firm has the necessary skills, resources and expertise to provide the professional services for a particular project, it is highly recommended that the firm be a member of a recognised voluntary consulting engineering association such as CESA. The voluntary associations require their members to adhere to various standards related to their codes of conduct, and to implement quality, integrity, and risk management systems. CESA's policy statement on business integrity is provided in Chapter 0.

Consulting engineering firms who are members of CESA employ a substantial complement of skilled technical resources in South Africa and this serves to ensure that design and construction of engineering works are of excellent quality and are cost effective. This high standard of engineering expertise in South Africa is recognised globally and contributes to the country's growth, progress and international competitiveness.

The procurement of professional consulting engineering services accordingly needs to maintain a balance between reasonable remuneration which will ensure the continued attractiveness and development of the profession on one hand, while ensuring fair competition on the other. Through National Treasury policy statements, Government recognises that **"it is necessary that certain**

minimum requirements of quality and efficiency be achieved when appointing consultants". At the same time a basic policy of competitive selection is to be maintained.

The training and development of skilled professional consulting engineering service providers takes many years and significant effort by all involved in the industry. Therefore, the procurement of consulting engineering services should not be viewed as the purchase of a readily available commodity, but rather the engagement of skilled professionals who act as trusted advisors in achieving the client's infrastructure project and other development objectives.

While consulting engineering services should be procured in a competitive manner, the primary purpose of competitiveness should be to aim for long term value for money, as indicated by the lowest cost over the life of the infrastructure, and not only the short-term objective of achieving lowest cost of consulting engineering services.

Procurement of professional consulting engineering services, therefore, needs to be approached with care and in a transparent manner that encourages professionals to develop and maintain the required skills and expertise.

1.3 Life Cycle Cost Optimisation

Clients have an important obligation when providing infrastructure to ensure that it is not only cost effective to construct, but also performs cost effectively during its operating life. For example, a small improvement in the efficiency of operation of the infrastructure obtained through optimisation of the design can lead to significant savings over its operating life. Consideration of the overall life cycle costs at the design stage is essential, particularly where public funds are used to deliver the nation's infrastructure.

The engineering design is therefore a critical component of infrastructure delivery, and this motivates for employing a consulting engineering firm which has appropriate experience for the particular project under consideration and which is a member of a recognised voluntary association such as CESA. Such consulting engineering firms, if correctly procured, will have the required resources and expertise to be able to provide these professional services and assist the client with managing the delivery of the infrastructure so that it meets the client's requirements, is completed on time and within budget, and has had its life cycle costs considered in the design and optimised.

The consulting engineer has a crucial role to play in the decision-making processes during the delivery of infrastructure projects and the success or failure of the project can depend on the selection of a consulting engineer with appropriate resources, skills, and expertise. One of the most important decisions the client will make when undertaking any infrastructure project is therefore the selection of the consulting engineer.

Great care should be taken in the process followed for procurement of consulting engineering services to ensure that the final project delivered is in accordance with best practice standards. It therefore makes no sense at all to select the consulting engineer purely based on the price offered to perform the services, and the functionality criteria in proposals must be properly drafted and the tenders received carefully evaluated against these criteria to ensure that only appropriately qualified consultants make it through to the final price/preference evaluation stage.

1.4 The Project Life Cycle

The delivery of all public infrastructure projects has three distinct phases which are depicted pictorially as follows:



Figure 1: Three phases of infrastructure projects

While the above diagram paints a clear picture of the delivery of infrastructure, it is actually slightly misleading because in reality infrastructure development and delivery is not a simple one-off event with a start and finish, but it is rather an ongoing, constantly evolving process of creation, usage and renewal which is cyclical in nature and which has become known as the infrastructure life cycle, and is best represented as follows:



Figure 2: Infrastructure Life-cycle

Everyone involved with infrastructure delivery must have a thorough understanding of the concept of the project life cycle particularly insofar as the selection of consulting engineers for an infrastructure project is concerned. As mentioned above, the cost of an infrastructure project is not determined by the cost of the professional services, nor by the cost of construction, but rather by the total life cycle cost of the infrastructure which includes the engineering or design costs, the cost of construction, and,

most importantly, the ongoing cost of operating and maintaining the infrastructure throughout its lifetime. The breakdown of these costs over the full life cycle of the project is depicted in the following diagram:



Figure 3: Breakdown of Costs over the Lifespan of Infrastructure

Engineering and design costs (1 to 2%) plus construction costs (6 to 18%) are unlikely to exceed 20% of the life cycle costs - yet the pressure which prevails to reduce design costs, and to an extent, also the construction costs, often prevents any opportunity to optimise the life cycle costs. It is during the very early stages of the project that the form and magnitude of the life cycle costs of any infrastructure project is defined. These early stages include the Initiation, Concept, and Design Development stages, the costs of which will usually be about 50% of the total design costs, or just one percent of the total life cycle costs!

To focus on price alone for the concept and detailed design services is misguided. Proper procurement should link the price directly to the quality or functionality of the service. This is advocated in the chapters which follow. The same reasoning applies to the later stages of the consulting engineering services, being Documentation and Procurement, and Contract Administration and Inspection, but since design is complete, their influence on the life cycle costs is far less.

1.5 The Importance of Forward Planning (Master planning)

From the preceding sections it becomes clear that the costs of an infrastructure project occur during all three phases of design, construction, and, most significantly, during operation. Managers of infrastructure should be accustomed to preparing cost estimates for the engineering and construction costs associated with infrastructure delivery and should also be familiar with estimating the costs for the operating and maintenance phases of the infrastructure. It is not only important to prepare and budget for operating costs, but it should also form an essential part of considering the overall life cycle costs of the infrastructure. This will ensure that correct design decisions are made early in the project life cycle that will have a powerful influence in costs incurred on the project later on.

Decisions made at an early stage with respect to the design regarding aspects such as capital and operating costs, the scope, and timing of a project will have a profound influence over the entire project life cycle and, if made early enough, any changes resulting from these decisions can be made at very little cost. Conversely, decisions to change the design made later on in the project life cycle may have little or no effect on the final outcome and yet they can come at a heavy cost. This highlights the need for careful forward planning at an early stage of a project and can best be highlighted by considering the following Cost Influence Diagram:



Figure 4: Cost -Influence Diagram

The above diagram illustrates the fact that while design changes made early during the project cycle are able to influence the project life cycle cost, as time goes on this ability to influence cost through design changes reduces to the point where late decisions will have no ability to reduce costs, while conversely the cost of implementing design changes has little or no cost implications at an early stage of the project, but late changes to the design can increase the cost significantly.

South Africa currently finds itself in a crisis with rapidly ageing infrastructure that is prone to failure. At least part of this situation can be blamed on a lack of forward planning (or master-planning) by various authorities. As noted above, every piece of infrastructure has a finite life after which that infrastructure must either be upgraded, replaced, or renewed.

Budgeting for maintenance costs is part of good planning on every infrastructure project and so too forward planning for future replacement costs should be a routine task for all managers of infrastructure. There are many techniques for allowing for such costs, a good example being the need to plan for the replacement of 2% of the total road network of a large city each year to ensure that the entire network is replaced within the expected lifespan of urban road networks, typically fifty years.

1.6 Infrastructure Project Delivery Stages

In South Africa, infrastructure project delivery is described by National Treasury in the Infrastructure Delivery Management System (IDMS) first published in 2012. The IDMS process is concerned with the project implementation stages from Project Initiation through seven distinct project stages to project Handover and Close-out, at which point the piece of infrastructure is put into operation by the user.

The IDMS project stages are depicted in **Error! Reference source not found.**' below, together with t he role the consulting engineer plays at each stage, which is discussed further in the next section.

1.7 Role of the Consulting Engineer During Project Delivery

The consulting engineer has a role to play during each of the project stages and may be appointed to assist the client during one or more stages. Clients often appoint a consulting engineer to undertake just one of the project stages and when the work of that consultant is complete, a different firm is appointed to undertake the following stage. There are many sound reasons for breaking down the work of the consulting engineer in this manner, particularly on large and mega-projects, but the client should be cautious about unnecessary fragmentation of the project so as not to negatively impact on the continuity a cost-effective design process. This aspect is described in more detail in section 1.8 below.



Figure 5: IDMS Project Stages and the Role of the Consulting Engineer

1.8 Appointing Separate Consultants for Different Stages of a Project1.8.1 Appointing Separate Consultants for Stages 1 and 2

The decision as to at what stage to appoint a consulting engineer and what stages the appointment covers will depend to a large extent on the in-house expertise of the client and the size of the project. In National Treasury's Capital Planning Guidelines 2018 projects are classified according to size in three categories with corresponding approval requirements as follows:

- a. **Mega projects** are those estimated to cost more than R400 million per year for a minimum of three years, or a total project cost of at least R1 billion. Most mega projects will customarily require a pre-feasibility study, a Stage 1 service, and a comprehensive feasibility study, a Stage 2 service, for scrutiny by National Treasury.
- b. Large projects are those estimated to cost between R90 million and R400 million per year for a minimum of three years totalling at least R250 million per year but less than R1 billion over the

Medium-Term Expenditure Framework (MTEF). Large projects require a feasibility study, a Stage 2 service, for scrutiny by National Treasury.

c. **Small projects** are those estimated to cost less than R90 million per year and not more than R250 million over the MTEF. Small projects are not subject to detailed appraisal as required for large and mega projects, but the government entity should be able to demonstrate that a project has been properly planned and that it meets the identified need and objectives of the institution.

A further consideration is that in National Treasury SCM Instruction Note 3 of 2016/2017 there is a requirement under Paragraph 9 that contracts are not to be varied by more than 20% or R20 million from the original contract value for construction related goods, works and services. Any deviation more than the prescribed threshold will only be allowed in exceptional cases, subject to prior written approval from the relevant treasury.

In view of the above National Treasury scrutiny requirements for large and mega projects a consulting engineering team is frequently appointed for Stages 1 and 2, either separately or under one appointment, to conduct the pre-feasibility and feasibility studies, and, once the project is approved, a competitive tender process is followed for the consulting engineering services for Stages 3 to 7, with the scope of the project clearly defined from the Stage 2 Feasibility Study.

This has the advantage that the scope of the project in the Stage 2 or Stages 3 to 7 appointments for large and mega projects will have been well defined in the previously completed stage and the risk is low that the scope of the project will need to be extended such that the contract sum is increased by more than 20% or R20 million, the limit above which Treasury approval is required under Paragraph 9 of National Treasury SCM Instruction Note 3 of 2016/2017.

It is however preferable with small projects (as defined above) to appoint a single consulting engineering team for Stages 2 to 7 in that the cost of the competitive bidding process for separate contracts for Stage 1, Stage 2 and Stages 3 to 7 is avoided, and the uninterrupted involvement of the single consulting team through the various stages leads to efficiencies from both a programme and cost perspective.

In these cases the ECSA guideline fee scale can used as the basis for the appointment, and it is possible to appoint a consultant for Stages 1 to 7 (ECSA Stages 1 to 6) without a final definition of the scope or cost of the works because the fee is adjusted according to the cost of the works.

1.8.2 Appointing Separate Consultants for Project Stages 1-4 & 5-7

There is no advantage to appointing, for example, one consulting engineering firm or team for Stages 1 to 4, the design stages, and another consulting engineering firm or team for Stages 5 to 7, the construction stages. In fact doing this introduces additional risk to the project, as explained further below.

- a. The consultant responsible for the design has the better understanding of the project and is therefore better able to respond to tenderers' queries and assist in the evaluation of tenders. The construction stage consultant will not be in a position to identify possible risks and weaknesses in the various construction tenders to the same extent as the design consultant
- b. Having the better knowledge of the design, the design consultant can anticipate and respond to changed circumstances on site and instruct the contractor timeously, thereby reducing the risk of claims from the contractor.
- c. There is also the issue of design responsibility. If this is carried by the original design consultant, all design queries must be referred to the design consultant. No changes can be made on site without the design consultant's approval. This can result in an increase in the cost of the project.

1.8.3 Limiting a Consultant's Involvement in Downstream Work

Another situation which has arisen in the past is where a consulting engineer who has been involved with the early feasibility and concept design stages of a project is precluded from being involved with subsequent detailed design and construction stages on the misguided basis of concern about a possible conflict of interests. This is not a valid reason for limiting the consultant's involvement in downstream work and indeed, for the same reasons described in 1.8.2 above, the consultant who has undertaken the feasibility study and concept design will be familiar with the project demands and will be well placed to respond to the client's requirements in subsequent stages.

This matter has been tested in the courts in a matter which went all the way up to the Constitutional Court (Aurecon vs City of Cape Town) where it was found that there was no valid reason why a consultant should not be involved with downstream work.

1.8.4 Conflict of Interest in Evaluating Construction Tenders

In 2022 a major public sector client cancelled a number of tenders because the design consultant was involved in the evaluation of the construction tenders, which the client believed to be a conflict of interest. CESA's opinion is that in such cases, the design consultant is best positioned to provide both technical and financial input into the evaluation of tenders, as well as identifying where risks lie in a particular tender. There is no reason why the design consultant should be any more conflicted than any other party involved in the evaluation of tenders.

CESA members are required to uphold the highest levels of integrity, as shown in CESA's policy statement on Business Integrity in Chapter 0, and a member would be required to declare any conflict of interest should there be one and recuse themselves from the evaluation of tenders.

There is furthermore nothing in the Procurement Regulations that prevents the design consultant from adjudicating tenders for construction contracts for which he prepared the tender documents.

2 THE LEGAL ENVIRONMENT

2.1 Introduction

In this chapter the relevant legislation, regulations and National Treasury instructions and guidelines applicable to the procurement of consulting engineering services are presented.

2.2 The Constitution of South Africa

A universally accepted set of objectives or outcomes for a construction procurement system are those based on the Constitution of South Africa of 1996 (Act 108 of 1996) and as adopted by the International Organisation for Standardisation (ISO) in the development of the ISO 10845 series of standards for construction procurement.

The Constitution requires that the procurement system be Fair, Equitable, Transparent, Competitive and Cost Effective. In addition, the organs of state shall implement a procurement policy providing for categories of preference in the allocation of contracts; and the protection or advancement of persons, or categories of persons, disadvantaged by unfair discrimination.

Constitution	Qualitative description of requirement
requirement	· · ·
Fair	The process of offer and acceptance is conducted impartially without bias and provides participating parties simultaneous and timely access to the same
	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Equitable	The only grounds for not awarding a contract to a tenderer who complies with all requirements are restrictions from doing business with the organisation, lack of capability or capacity, legal impediments and conflicts of interest arising out of a Risk Analysis.
Transparent	The procurement process and criteria upon which decisions are to be made shall be publicised. Decisions are made publicly available together with reasons for those decisions. It is possible to verify the criteria that were applied. The requirements of procurement documents are presented in a clear, unambiguous, comprehensive and understandable manner.
Competitive	The system provides for appropriate levels of competition to ensure cost-effective and best value outcomes.
Cost- effective	The processes, procedures and methods are standardised with sufficient flexibility to attain best value outcomes in respect of quality, timing and price.
Promotion of other objectives	Procurement policies may incorporate preferencing criteria for the protection or advancement of persons, or categories of persons, disadvantaged by unfair discrimination.

Table 1: Qualitative Requirements of the Constitution (Pillars of Procurement)

2.3 Legislative Framework

A legislative framework exists to promote transformation in South Africa. The Acts, Regulations and National Treasury Instructions affecting procurement of consulting engineers are provided in Table 2 below.

Act	Applicability	What it does in respect of procurement
Constitution of the	All organs of	Provides procurement objectives and establishes
Republic of South	state	government's policy for preferencing.
Africa, 1996 (Act No		Establishes requirements for the award of contracts to
108 of 1996)		be lawful, reasonable and procedurally fair.
Public Finance	National and	Establishes a regulatory framework for supply chain
Management Act (Act	provincial	management which includes procurement within
1 of 1999)	departments and	national and provincial departments and state-owned
		enterprises.

Act	Applicability	What it does in respect of procurement	
	state-owned		
	enterprises		
Public Finance	National and	Practice Note SCM 3 of 2003: Sets out the procedures	
Management Act	provincial	to be followed for selecting, contracting, and	
National Treasury	departments and	monitoring consultants required for projects	
Practice Notes and	state-owned	Practice Note SCM 2 of 2005: Sets out the threshold	
Instructions	enterprises	values when procuring goods and services by written	
		quotation (<r200 000)="" bids<="" competitive="" or="" th=""><th></th></r200>	
		(>R200 000) etc.	
		Instruction Note on Amended Guidelines regarding	
		Functionality (September 2010)	
		SCM Instruction Note No. 03 of 2016/2017: Under	
		Clause 9, the Accounting Officer of a state entity must	
		ensure that contracts are not varied by more than 20%	
		or R20 million for construction related goods, works	
		and services. Any deviation in excess of the	
		prescribed threshold will only be allowed in	
		exceptional cases subject to prior written approval	
		from the relevant treasury.	
		Instruction No. 03 of 2019/2020: Prescribes minimum	
		requirements for the implementation of the	
		Infrastructure Management System (IDMS) through	
		the Framework for Infrastructure Delivery and	
		Procurement Management (FIDPM)	
Municipal Finance	Municipalities	Establishes a regulatory framework for supply chain	
Management Act,	and municipal	management (SCM) which includes procurement	
2003 (Act No 56 of	entities	within municipalities and municipal entities.	
2003)			
Municipal Finance	Municipalities	Regulation 12 requires that the SCM policy provide for	
Management Act,	and municipal	the procurement of goods and services by way of	
2003 (Act No 56 of	entities	formal price quotations for a procurement between	
2003)		R120 000 up to R200 000 (including VAT) and a	
Regulations July		competitive bidding process for procurements above	
2005		R200 000 or for long term contracts.	
		Regulation 14 requires that the SCM policy instructs	
		the accounting officer to keep a list of accredited	
		prospective suppliers to be used for the procurement	
		requirements through written or verbal quotations, and	
		to invite prospective providers of goods or services to	
		apply to be added as accredited prospective	
		providers.	
		Regulations 16 and 17 require the SCM policy to	
		stipulate conditions for procurement through written or	
		verbal quotations (16) and through formal written price	
		quotations (17) from at least three different providers	
		from the list of accredited providers	
		Regulation 21 requires that the hid desumentation	
		must consider the requirements of the Construction	
		Industry Development Roard in the case of a bid	
		relating to construction ungrading or refurbishment of	
		buildings or infrastructure	
		Regulation 25 allows a two-stage bidding process for	
		large complex projects or for projects where it may be	
		undesirable to prepare complete detailed	
		specifications or long-term projects with a duration	
		exceeding three years. In the first stage technical	
	1		

Act	Applicability	What it does in respect of procurement
		proposals on conceptual design or performance specifications are invited, and in the second stage final technical proposals and priced bids are invited.
National Treasury Guidelines under the	Municipalities	Regulation 35 states that a supply chain management policy may allow the accounting officer to procure consulting services provided that any Treasury guidelines in respect of consulting services are considered when such appointments are made, and that the services must be procured through competitive tender if the contract value exceeds R200 000 or the duration period exceeds one year. Furthermore the municipality or municipal entity must ensure that copyright, patent rights or ownership in anything, system or process designed or devised in the course of the services vests with the municipality or entity. MFMA Circular No. 53 (03 Sep 2010) covers the amended guidelines in respect of bids that include
Local Government: Municipal Finance Management Act, 2003	entities	Functionality as a criterion for evaluation MFMA Circular No. 106 (15 September 2020) introduces minimum requirements for effective governance of infrastructure delivery and procurement management through the Local Government Framework for Infrastructure delivery and Procurement Management (LGFIDPM) MFMA Circular 110 (31 May 2021) requires that accounting officers avoid using membership of voluntary associations as a criterion to exclude bidders, and requires that the fees charged for bidding documents should only cover the cost of their printing and delivery
Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000)	All organs of state (state owned enterprises) at discretion of Minister)	Provides a framework for the implementation of the preferential procurement policies by organs of state. The regulations published under the Act prescribe the preference point systems to be used in the evaluation of tenders. New regulations published in Government Gazette 47452 dated 04 November 2022.
Construction Industry Development Board Act, 2000 (Act 38 of 2000)	All organs of state involved in procurement relating to the construction industry.	 Establishes how the Board can promote and implement policies, programmes, and projects, including those aimed at procurement reform, standardisation and uniformity in procurement documentation, practices, and procedures within the framework of the procurement policy of government, through the establishment of: a national register of contractors (and if required, consultants and suppliers) to manage public sector procurement risk and facilitate public procurement; a register of projects above a financial value with data relating to contracts awarded and completed and a best practice project assessment scheme; best practices. a code of conduct for the parties engaged in construction procurement.
Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003)	Procurement provisions apply to all organs of state.	 Establishes a code of good practice and scorecard, provided for industry specific charters such as the Construction Industry Charter, to inform the: development of qualification criteria for the issuing of licenses or concessions, the sale of state-

Act	Applicability	What it does in respect of procurement
		 owned enterprises and for entering into partnerships with the private sector; and development and implementation of a preferential procurement policy.
Amended Construction Sector Charter (Published in terms of Section 9(1) of BBBEE Act, 53 of 2003 (see above))	All stakeholders operating in the Construction Sector	 Provides framework to address: Broad based black economic empowerment (ownership, control, employment equity, skills development, procurement, enterprise development & corporate social investment) Enhancement of capacity Increase in production It is mandatory for all stakeholders and is effective from 01 December 2017
Promotion of Administrative Justice Act (Act 3 of 2000)	All organs of state	Establishes fair administrative procedures, permits those affected by unfair administrative action to request reasons for such administrative action within 90 days of, or when they became aware of, such actions and requires administrators to respond within 90 days of receipt of such requests. Provides for procedures for the judicial review of administrative actions and remedies in proceedings for judicial review including the prohibition of an administrator from acting in a particular manner, setting aside the administrative action, correcting the defective action and the ordering of the administrator to pay compensation.
The Promotion of Equality and the Prevention of Unfair Discrimination Act, 2000 (Act 4 of 2000)	The state and all persons (natural or juristic person)	Prohibits the state or any person from discriminating unfairly against any person on the grounds of race or gender through the denial of access to contractual opportunities for rendering services or by failing to take steps to reasonably accommodate the needs of such persons.
Prevention and Combating of Corrupt Activities Act, 2004. (Act No. 12 of 2004).	Public and private sector	Makes corruption and related activities an offence, establishes a Register in order to place certain restrictions on persons and enterprises convicted of corrupt activities relating to tenders and contracts; and places a duty on certain persons holding a position of authority to report certain corrupt transactions.

Table 2: Legislation, Regulations and National Treasury Instructions Regulating Procurement

3 GENERAL PROCUREMENT CONSIDERATIONS

3.1 Procurement Practice in South Africa

National Treasury's Practice Note SCM 3 of 2003, now amended as described further below, previously set out the procedures to be followed for selecting, contracting and monitoring consultants required for projects. Paragraph 9.2 of SCM 3 recommended Quality and Cost Based Selection (QCBS) and listed other options as

- a. Quality based selection
- b. Selection under a fixed budget
- c. Least cost selection; and
- d. Single source selection

Approach to appointment of consultants	Recommended usage of approach
Quality-Cost based selection (QCBS) Tenderers are invited to submit tenders based on a well-defined scope of work. Tenders are evaluated on the basis of both the quality of the services to be rendered and the cost of the services to be provided. Where a two-envelope system is used, the evaluators of the technical proposals should not have access to the financial proposals. The final contract is negotiated with the tenderer scoring the highest number of points.	In most cases, except in the case of complex or highly specialised assignments or those that invite innovations on the basis of quality alone (i.e. QBS)
Quality based selection (QBS) Tenderers are requested to submit technical proposals only or to submit technical proposals and financial proposals in two envelopes. Where only technical proposals are called for, the tenderer with the highest ranked proposal is requested to submit a detailed financial proposal so that the contract can be negotiated. The final contract is thereafter negotiated. Tenderers may be provided with an indication of the expected input of key professionals (staff time)	 A complex or highly specialised assignment, for which it is difficult to define the precise scope of work and consultants are expected to demonstrate innovation in their proposals. An assignment that has a high downstream impact and requires the best available experts. An assignment could be carried out in substantially different ways; hence proposals will not be comparable.
Least cost selection Tenderers are requested to submit technical proposals and financial proposals in two envelopes. The financial proposals of only those tenderers who obtain a quality score above a threshold are opened. The tenderer with the highest score based only on price and preference is selected.	A standard or routine assignment where well-established practices and standards exist and in which the contract amount is small.
Single source selection In this procedure, a suitable tenderer is identified, and a contract is negotiated	 A task that represents a natural continuation of previous work carried out by the firm. A rapid selection is essential (eg in an emergency operation). A very small assignment. An assignment where only one firm is qualified or has the experience of exceptional worth for the assignment.

Table 3: Comparison of Approaches to the Appointment Of Consulting Engineers

The CIDB's Best Practice Guideline #A7 of December 2007 provides equivalent approaches to those in the National Treasury SCM 3. These approaches were used until, in a judgement received in the KwaZulu Natal High Court under Case No. 10878/2009 in which the conflict between Regulation 8 of the Preferential Procurement Regulations, which allows for 80 or 90 points for price and quality (functionality), and the prescripts of Section 2 of the PPPF Act, which allows 80 or 90 points for price only, found Regulation 8 to be invalid. The use of the Quality-Cost based selection and Quality based selection methods are thus no longer permitted in South Africa.

As a result of the judgement, the National Treasury Instruction Note on the amended guidelines for bids that include functionality as a criterion for evaluation, issued in September 2010, states that the evaluation of bids must be done in two stages. In the first stage the assessment of functionality is done, and a bid must be disqualified if it fails to meet the minimum threshold for functionality as per the bid invitation. Thereafter only the qualifying bids are evaluated in terms of the 80/20 or 90/10 preference point systems and functionality plays no further part in the evaluation.

It is also of interest that the action in the above court case and in a separate case brought before the Eastern Cape High Court in 2009, were both brought by tenderers on construction contracts against the respective employers. CESA regards the use of quality as an important criterion for the evaluation of tenders for professional services, which is in alignment with international best practice – see examples in Appendix C.

The two most used methods of procurement of professional services by organs of state in South Africa are as follows:

3.2 Price/Preference Selection with Functionality as a Prequalifying Criterion

Although now widely used in South Africa, as a result of the aforementioned National Treasury Instruction, selection based purely on price/preference selection is not recommended for the procurement of consulting engineering or other professional services. Functionality should always form part of the selection criteria, either by including functionality as part of the criteria to establish the responsiveness or otherwise of a tender, or by using a two-envelope system with separate technical and financial proposals.

In terms of the current PPPFA regulations, price/preference is scored according to the 80/20 and 90/10 rules for projects above R30 000 and R50 million respectively. Tenderers are required to achieve a minimum score in functionality before their financial and preference proposals are evaluated. If the minimum score for functionality is not obtained, the tender is rejected.

3.3 Panel Appointments, Framework Contracts

It frequently arises that clients need to procure consulting engineering services before being in a position to identify specific projects and hence they are unable to write a detailed, project-specific Scope of Services and Scope of Work. In these circumstances the procurement of consulting engineering services by means of a "Panel Appointment", also termed a "Framework Agreement" or "Term Contract", provides a more feasible approach, and can give a more expeditious means of appointing a consulting engineer.

The Framework Agreement is designed to allow the client to invite tenders from consulting engineers to carry out work on an "as instructed" basis over a set term. Generally, the Framework Agreement establishes the consultant's terms for services over a set period of time, usually a maximum of three years as dictated by the PFMA, within a broad scope of work, and without guaranteeing any quantum of services. The rationale behind using such agreements is that it reduces time and effort required from the client when having to procure from the market each time a service is required. This results in savings in procurement time and costs whenever a delivery requirement (also called a Task Order or Call-off contract) is to be made for a specific project.

Framework Agreements are only entered into with consulting engineers who have the resources and capability to carry out the services envisaged and must include the means by which the consulting engineer is remunerated for the instructed work. Hence the evaluation of tenders for Framework Agreements must be based on functionality as well as price – and not price alone.

The Client's quality criteria and basis of remuneration of the consulting engineer must accordingly be clearly indicated in the tender document.

3.4 Other Options

3.4.1 Single Source Selection

Single source selection of consultants does not provide the benefits of competition in regard to quality and cost, lacks transparency in selection and may result in unacceptable practices. Nevertheless, under certain circumstances, particularly where highly specialised skills in a specific field are required for a particular project, then single source selection may well be in the client's best interests.

Single source selection may also be a useful means for a client who is embarking on a relatively small and straightforward infrastructure project to employ the services of a professional service provider with suitable expertise to assist with the development of the terms of reference to be used for the formal procurement of professional service providers, including consulting engineers.

Single source selection is not allowed under South African Law for assignments greater than R30 000. However, in terms of Section 3 of the PPPFA, organs of state can request the Minister of Trade and Industry for exemption from any or all the provisions of this Act in the following circumstances:

- 1. it is in the interests of national security;
- 2. the likely tenderers are international suppliers; or
- 3. it is in the public interest.

4 POLICY STATEMENT ON BUSINESS INTEGRITY

4.1 Preamble

CESA is a voluntary association of firms of Consulting Engineers and allied professionals. It operates primarily within South Africa. CESA is a member of the International Federation of Associations of Consulting Engineers, FIDIC. The wide range of objectives of CESA and FIDIC are covered in the respective organisation's constitution.

Corruption, definable as "the misuse of public power for private profit", is morally and economically damaging. Firstly it jeopardises the procurement process, is always unfair, and often criminal. It diverts money from required development projects and adversely affects their quality. Secondly, and worse than being pragmatically wrong in allowing wasteful procurement, corruption is fundamentally wrong because it undermines values of society, breeds cynicism, and demeans the individuals involved. It is more than stealing funds, it is stealing trust.

CESA member firms are required to comply with this CESA guideline which has been written in such a way that it can be used in practice by member firms. The CESA guideline is also to be read in conjunction with the FIDIC guidelines for Business Integrity Management in the Consulting Industry and the CIDB Code of Conduct,

See http://www.cidb.co.za/procurement_toolbox/code_conduct/default.aspx.

4.2 Statement of Commitment

CESA and its members commit to upholding and assisting others in upholding the dignity, standards, and reputation of the consulting industry, taking all reasonable steps to protect life and to safeguard people, and seek solutions that are compatible with the principals of sustainable development and environmental responsibility. CESA and its members further commit to serving their clients and society in a manner which is free of corruption and to act at all times in the legitimate interests of the client and all stakeholders involved and discharge their duties with integrity, faithfulness, confidentiality, efficiency, competence and in a non-discriminatory manner.

4.3 Policy

CESA and its member firms have adopted the following policy:

a. "Member firms will neither initiate nor accede to corrupt practices"

The consulting engineering industry which has historically been motivated by concern for the needs of society, must seek both to prevent and to react to the blight of corruption. CESA and its member firms, representing the leaders of the consulting engineering industry will neither ignore nor acquiesce with the tide of corruption, nor will it consider that local corruption is cultural and unchangeable. The member firms of CESA will neither initiate nor accede to corrupt practices.

b. "Accepting or giving a bribe constitutes unethical behaviour"

A bribe of whatever form, intended to influence the actions and decisions of clients or its agents whether directly or indirectly (using mechanisms such as scholarships, actions of agents, gifts, currency exchange facilities, etc) constitutes unethical behaviour.

c. "Acceptance or payment of remuneration not to affect impartial judgement"

The consulting engineering member firm must not accept remuneration of any kind from a particular party which may be perceived to, or which in reality tries to influence the selection of a particular course of action which is in that party's interest or affect the impartial judgement of the consulting engineering firm.

d. "Awareness and respect of local laws and client guidelines"

Member firms should be aware of local laws as well as client strategies and guidelines regarding corruption and should promptly report criminal behaviour to the proper law enforcement authorities.

e. "Disciplinary Action"

CESA firms will have prompt disciplinary actions taken against them if found to have violated its Code of Conduct and this policy. This could include, among other actions, expulsion, and notification to public agencies. The disciplinary procedure will ensure that the due process of law is afforded in such cases. The procedure for determining whether the expulsion of a member firm is warranted will be conducted confidentially but expeditiously. Member firms should foster and support the enactment of legislation in countries in which they work, which is aimed at curbing and penalising corrupt practices.

Generally CESA will rely on the outcome of enquiries and investigations by approved organisations as outlined in the CESA whistleblower schemes or legal procedures to implement "disciplinary action" against members.

5 INFRASTRUCTURE DELIVERY AND PROCUREMENT (FLOW CHARTS)

5.1 Introduction

The purpose of this chapter is to provide guidance on the processes to be followed by a client when procuring consulting engineering services. The processes are shown in the form of flow charts, showing the gates where approval is to be obtained before going on to the next stage. The flowcharts are aligned with National Treasury's Framework for Infrastructure Development and Procurement Management (FIDPM) published under Instruction 03 of 2019/2020 and the Local Government Framework for Infrastructure Delivery and Procurement Management (LGFIDPM) published under MFMA Circular No. 106 of 01 October 2020.

5.2 Infrastructure Delivery Management Project Process Flow



Figure 6: IDMS Process Flow

The ECSA Guideline Scope of Services and Tariff of Fees provides the industry-wide accepted description of the services to be provided by consulting engineers at each stage of the project.

As is shown in **Error! Reference source not found.**' below, apart from some differences in t erminology, the IDMS stages are similar to those specified in the ECSA Guideline Scope of Services and Professional Fees except in the following respects:

- a. In the ECSA Guideline it is assumed that the pre-feasibility and feasibility studies and reports have been undertaken as part of a separate and previous exercise prior to the commencement of Stage 1 of the services, while the IDMS assumes that these pre-feasibility and feasibility studies form part of the Stage 1 and Stage 2 services
- b. For Stage 5, the IDMS "Works" stage includes for the construction of the Works i.e. the work to be done by the contractor(s), whereas the ECSA Stage 5 only covers the consulting engineering services "Construction Administration and Inspection" relating to the Works stage.
- c. The handover Stage 6 in the IDMS has been included to formalise the handover of the infrastructure from the contractor to the client (or owner) after completion but before the end of the defects liability period, at which Stage 7 close-out would occur. This stage is combined with the Stage 6 Close-Out stage in the ECSA Guideline.



Figure 7: Comparison of ECSA and IDMS Stages

Note that unless specifically stated otherwise, the IDMS terminology with respect to the project stages has been used in this Manual.

Under FIDPM, to progress from one stage to the next, it is mandatory that certain prescripts must be met, and formal approval given. These are described as "Gates" as per 'Figure 6: IDMS Process Flow'.

It must be borne in mind that it is not just a simple matter of following the process chart above to achieve the client's objectives. For example, on a Municipal Infrastructure Grant (MIG) funded project, the process of getting through each Gate can be complicated. The client is allocated a budget for a project. The major spending invariably occurs when the project gets to the construction phase. If due care is not exercised early on in the life cycle of the project, spending will be delayed, and budgets will be returned to Treasury.

A MIG project starts with the approval of the MIG Business Plan, which is considered a Stage 1 deliverable. Invariably, at this stage, the preliminary design has still to be done. This has its challenges as there is no accurate data to input into the Business Plan to meet the prescripts for passing through Gate 1.

Upon approval of the Business Plan the project can proceed to Stage 2: Concept. Approval of the Concept Report requires Environmental Approval. Environmental Approval requires the presentation of several preliminary design options which cannot be adequately achieved without the following:

- a. Environmental Assessment
- b. Geotechnical Investigation
- c. Land Surveying
- d. Traffic Impact Assessments
- e. Identification of the need for Wayleaves and Servitudes
- f. Identification if there is a need for Expropriation
- g. Community Consultation
- h. Identify if there is a need for resettlement of residents

Thus getting through the first two Gates requires careful planning, financial commitment and prompt action if the whole project is not going to be unnecessarily delayed. Each of the above bullets may need the appointment of a specialist service provider, either directly by the client or as a sub-consultant to the consulting engineer.

5.3 Procurement of Professional Services Process Flow

The flow chart for the procurement of professional services is based on the National Treasury's FIPDM instruction and LGFIDPM as well as the IDMS Training Module of March 2019 published by MISA. It has been adapted where relevant to the procurement of consulting engineering services rather than the procurement of contractors.



Figure 8: Procurement Gates Applicable to Professional Services

PG1 to PG7 are procurement gates each requiring that certain prescripts are met, and formal approval given by the delegated person or agent of the client before the next procurement stage is commenced.

These stages are discussed separately in the next chapters.

6 PROCUREMENT GATES 1 AND 2: INITIATION AND PROCUREMENT STRATEGY

In this chapter the requirements for Procurement Gates 1 (Initiate Procurement Process) and 2 (Develop Procurement Strategy) are discussed together with the sub-processes making up the minimum requirements for each procurement gate.

6.1 Procurement Gate 1: Initiation of Procurement



Figure 9: Process Flow for PG1: Initiate Procurement Process

6.1.1 Establish Need

Many clients will have a clear vision of the project they are embarking on based on their in-house knowledge and experience, and such clients will be able to provide a proper description of the scope of services required (i.e. the terms of reference for the project). On the other hand, some clients, particularly when undertaking more complex projects required on an infrequent basis, will find it difficult to provide sufficiently comprehensive terms of reference because of their inexperience or lack of in-house specialist knowledge with the technical aspects of the project.

A typical example may be a wastewater treatment works for a smaller local authority. This type of project may only happen once in ten or more years and in such cases the client may not have the inhouse technical expertise and experience to develop adequate terms of reference to enable consulting engineers tendering for the services to uniformly interpret the scope of services required. The consulting engineers will therefore not be able to prepare and submit meaningful prices for providing the services, and it is likely that a wide range of prices will be received, corresponding to the various tenderers' interpretation of the terms of reference.

Awarding the project to the bidder with the lowest price in these circumstances is fraught with risks, as the lowest bidder may have misinterpreted the terms of reference, in some cases deliberately taking advantage of loose terms of reference, and will try to recover under-pricing through claims, leading to an adversarial relationship. Furthermore, they may pay minimal attention in the design to optimising the life-cycle costs of the infrastructure.

In such instances it is strongly recommended that the client should start by appointing a consulting engineer with the required expertise, resources, and experience to undertake a pre-feasibility study to assist the client to develop the terms of reference, including definition of the project scope, scope of services, budget and programme. The terms of reference can then be included in the procurement documents when procuring the services of the consulting engineer for the subsequent stages of concept design, detailed design, and the construction stages.

The important consideration is that by spending a small amount of time and money upfront in drawing up the appropriate terms of reference, the client will almost certainly save time and money (both in respect of the construction and life-cycle costs) and will end up with a completed project that will better serve the purpose for which it was intended.

For Stage 1, the need will have been established in previous planning studies undertaken, for example, in the municipality's integrated development plan, the water and sanitation master plans or in the provincial road and transportation master plan. The deliverables for Stage 1 (Initiation) will include either:

- a. The Initiation Report, which defines project objectives, needs, acceptance criteria, organisation's priorities and aspirations, procurement strategies, and which sets out the basis for the development of the Concept Report, OR
- b. A Prefeasibility Report, required on mega capital projects to determine whether to proceed to the Feasibility Stage. Sufficient information needs to be presented to enable a final decision to be made regarding the implementation of the project.

The report prepared in Stage 1 can thus be used to support the "Establish Need" subprocess when consulting engineering services for Stage 2 are being procured. Similarly, the deliverables for Stage 2 entail either the Concept Report (for small projects) or the Feasibility Report for large and mega projects. Where consulting engineering services for Stages 3 to 7 are being procured, the Concept Report or Feasibility Report prepared in Stage 2 can then be used to establish the need for the services.

6.1.2 Project Description

The Initiation Report must include a suitable project title to be applied as the project description.

6.1.3 Broad Scope of Services

The Initiation Report must include the broad scope of services to be undertaken by the consulting engineer and/or other professional service providers who will proceed with the implementation of the next stage(s).

The ECSA Guideline Scope of Services and Professional Fees, which is updated and published annually by ECSA, forms a good basis for defining the scope of services to be provided by the consulting engineer.

6.1.4 Estimate Financial Value

Initial rough estimates of the project costs will need to be determined as part of the Stage 1 services (for use in the procurement of Stage 2 Services) and these will be refined as part of the Stage 2 services for use in the procurement of the Stages 3 to 7 services. However it will be likely that no rough estimate of the project costs is available when Stage 1 Services are still to be procured.



Figure 10: Source of Preliminary Infrastructure Cost Estimates

The ECSA Guideline Scope of Services and Professional Fees can be used for estimating the fees for a professional services appointment where the cost of the works to be designed has already been estimated. It is important to include for any additional surveys (e.g. topographic or geophysical surveys) and investigations (geotechnical), specialist consultants (Health and Safety Agent etc) that may be required for the project, and construction monitoring services, as well as the disbursements of the consultant, as these are not included in the ECSA fee scales for normal services.

6.1.5 Confirm Budget

Having established the broad scope of the work and the initial estimated project cost, the client must confirm a budget starting by establishing the project timing with allowance for procurement processes, design and planning, construction, and commissioning. This will enable the client to establish sources and methods of project funding together with projected cash flow requirements.

Municipal entities may, in terms of Section 33 of the MFMA, enter into contracts with a duration of longer than a financial year, but, if the contract imposes financial obligations beyond the three years covered in the annual budget for that financial year, it may do so only if the specified approval process is followed. This includes inviting public comment and soliciting the views and recommendations of National Treasury and the relevant provincial treasury, COGTA, and the responsible national department for the service concerned.



6.2 Procurement Gate 2: Develop Procurement Strategy

Figure 11: Process Flow for PG2: Procurement Strategy Process Flow

As mentioned in Chapter 1, this manual deals only with contracting strategy "Design by Client", and the procurement of consulting engineering services, where a consulting engineer is appointed to provide the design services in Stages 1 to 4 on behalf of the employer, as well as the contract administration and close out services (Stages 5 to 7). A contractor is then appointed to construct the works.

It is important to provide guidance on measures required to procure consulting engineers in a manner which will result in the successful completion of the project. In recent years the increasing incidence of failed professional services and construction contracts has become an area of concern. Numerous terminations of consulting engineering professional services contracts and/or contractors' construction contracts have been reported.

There are three commonly used procurement strategies for the appointment of consulting engineering services where competitive bidding is required:

- a. A single envelope system, where the functionality, technical and financial proposals are provided together in a single envelope which is opened after the closing time for tenders. This is generally used for smaller and more straightforward projects and is the system described in this document
- b. The two-envelope system for the procurement of consulting engineering services is often adopted for larger projects. The first envelope contains the functionality component. The second envelope

containing the price and preference components is only opened for those tenderers making it through the functionality gate.

c. A two-stage bidding process may be employed for mega projects, where in the first stage bidders are invited to pre-qualify on the basis of their experience on similar projects and the strength of the team they are able to allocate to the project. In the second stage competitive bids are invited from the pre-qualified tenderers (the short-list) using the one- or two-envelope systems. This will firstly ensure that quality becomes a key focus point for the first stage tender adjudication. Secondly, on these mega projects the costs of bidding can be considerable and limiting the number of tenderers in the second stage makes economic sense. Thirdly, the chances of success are considerably increased for the remaining bidders, making it more worthwhile for them to commit to the cost of the bidding in the second stage.

6.2.1 Identify Professional Service Areas

Typical professional service areas include specialist consulting, design, cost control, engineering, project management, construction management etc.

A list of typical engineering disciplines and fields of services offered by consulting engineers is provided in Appendix A.

6.2.2 Contracting Strategy

The contracting strategy will be dependent on the extent to which multi-disciplinary services are required, and the complexity of the project.

Options for the contracting strategy with respect to multi-disciplinary consulting engineering services are as follows:

- a. A single multi-disciplinary consultant;
- b. A principal consultant who is responsible for appointing subconsultants in the various disciplines required.
- c. A joint venture of consultants with expertise in the various disciplines required. CESA has recently published a model Joint Venture Agreement for use in these instances.
- d. Appointing separate consulting engineering firms in each discipline, e.g. civil, mechanical electrical, structural and a project management firm to coordinate the project. This is common on building projects where the construction contract is governed by the JBCC form of contract. One of the consultants is then appointed as the principal agent.

Where the client has a programme of small projects of similar nature it may be preferable for the client to package these together into a single contract to reduce the administrative burden.

Alternatively, for smaller projects, if the client has established a panel of consulting engineers, requests for quotations (RFQ) can be sent out to firms on the panel. The terms of any contract entered into as a result of this RFQ would be governed by an umbrella framework agreement covering the individual consultants' appointment to the panel. (See 0 and Appendix B).

6.2.3 Pricing Strategy

There are various options for the pricing strategy (or method of remuneration) for consulting engineering services dependent on the project circumstances and client preferences and there is no restriction as to how it should be done. The remuneration options, and where they are most suitable, are discussed in the following paragraphs.

6.2.3.1 Time Based Fees

The consulting engineer is remunerated at agreed hourly rates for the time spent by staff working on a project. In addition to time spent, the consulting engineer is also remunerated for out-of-pocket expenses. Time based fees are probably the ideal method of remuneration, but they rely totally on the skill, experience, resources, and integrity of the consulting engineer. Clearly, a consulting engineer with less skill and experience will take longer to complete the

work than one with considerable skills and experience, although the hourly rate charged by the less experienced engineer is likely to be lower than that of the experienced engineer.

Depending on the nature of the services, it is common for a maximum ceiling to be placed on time-based fees which may be a value tendered by the consultant or negotiated between the client and the consultant. Extending the ceiling, where warranted, then requires a motivation from the consultant and approval thereof by the client.

Time based fees are particularly suited to the following project situations:

- a. Where the project scope of work, cost, and programme, and/or the scope of the consulting engineering service cannot be determined and/or defined before the commencement of the project.
- b. Specialist engineering work
- c. Small projects
- d. Feasibility studies, investigations, and reports, including forensic engineering involving insurance and legal work.
- e. Dispute resolution, involving arbitration, adjudication, and mediation
- f. All matters related to provision of advice as an expert witness or similar situations.
- g. Specialist investigations, surveys, audits, studies, assessments, planning and reports, all involving the provision of engineering advice of any nature.

6.2.3.2 Percentage based fees

The consulting engineer is remunerated on the basis of a percentage of the cost of the works. Out of pocket expenses are normally paid for separately. Percentage based fees are the traditional method used for calculating fees in South Africa on infrastructure projects and may be calculated in accordance with the ECSA Guideline Scope of Services and Professional Fees which are updated and gazetted annually in terms of the Engineering Profession Act 46 of 2000. Percentage fees are very suitable for use where the scope of works and services cannot be accurately described before commencement of the project.

Some features of percentage-based fees are:

- a. They are a simple, fair means of remuneration.
- b. Percentage based fees remain the most popular method of calculating the fee in South Africa.
- c. The fee is self-adjusting as the project circumstances and cost of the works varies.
- d. A percentage-based fee relies heavily on the integrity of the consulting engineer to design cost effectively so as not to unnecessarily inflate the cost of works.
- e. It represents poor remuneration when the cost of the works cost is unusually low for any reason.

The professional services agreement must be carefully and properly worded to allow for the project situation and to describe circumstances in terms of which the consulting engineer may be entitled to additional fees. The ECSA Guideline Scope of Services and Professional Fees provides valuable guidance in this respect.

6.2.3.3 Lump sum

The consulting engineer may be remunerated on the basis of a lump sum tendered for the services, which would normally include expenses. The lump sum tendered by the consultant is calculated using resource-based costing, which entails breaking the services down into a number of tasks (the work breakdown structure) and estimating the time required for each of the team members (resources) to complete each task. The hourly rates for the various resources are then applied to their time and the cost for the project can then be determined.

Some features of a lump sum fee are:

a. Lump sum fees can only be applied where the project brief, scope of work and scope of service are all accurately described in the terms of reference.

- b. Where the fee is expressed as a lump sum it is essential that the manner and circumstances under which the fee may be varied for any reason are clearly spelled out in the professional services agreement. Again the ECSA Guideline Scope of Services and Professional Fees provides guidance in this respect.
- c. Where the project brief, scope of work and the scope of services are not accurately described by the client, lump sum fees will result in an unacceptable level of risk to the consulting engineer, which is likely to be transferred back to the client in the form of claims for additional services.
- d. A lump sum fee is simple and both parties have a clear understanding of the amount of the remuneration.
- e. A negative aspect is that there is little incentive for the consultant to diligently optimise the design to achieve the lowest life-cycle costs of the infrastructure concerned.

6.2.3.4 Other Methods

There are other methods of determining the fee, less commonly applied in South Africa, but which are described below:

- a. Value-based fee, where the remuneration is based on the value added to the project by the consulting engineer. Projects for which such fees would be applicable would be those where value is generated by applying engineering skills to improve productivity and cost-effectiveness. Thus the fee would provide an incentive to the consulting engineer for continuation of development of the skills required to deliver the value required by the client. An example of a value-based fee would be on an energy saving project where the consulting engineer may be remunerated based on a percentage of the saving achieved. The value-based fee may also include time-based fees, using the hourly rates discussed above.
- b. Cost plus, where the consulting engineer is remunerated for time spent at an agreed hourly rate, but the rate is based purely on cost. Overhead costs and profit are an agreed lump sum.

6.2.4 Preferential Procurement Aspects

The Preferential Procurement Strategy will need to follow the client's Preferential Procurement Policy determined in terms of Section 2.(1) of the PPPFA Act.

The Construction Sector Scorecard provides an effective and simple preference point system for determining the preference score for consulting engineering firms. The scorecard is issued on application by an accredited rating agency who will verify the B-BBEE credentials of the firm.

In terms of the regulations published under the PPPFA Act, if the tender value is equal to or above R 30 000 and up to a value of R50 million, the 80/20 preference point system will apply. For tenders where the price is expected to exceed R50 million the 90/10 preference point system will apply. Note that with the exception of very large projects, it is unlikely that the cost of the consulting engineering services will exceed R50 million, so, typically, most tenders involving consulting engineering services will be on the basis of the 80/20 preference points system.

If it is unclear whether the 80/20 or 90/10 preference point system applies, the lowest acceptable tender must be used to determine the applicable preference point system.

6.2.5 Form of Professional Services Agreement (Professional Services Contract)

Various standard forms of professional services agreements (standard forms of contract) are available for use when procuring the services of a consulting engineer, as follows:

- a. CESA Model Professional Services Agreement May 2021
- b. CESA Short Form of Agreement October 2021
- c. CESA Compact Form of Agreement February 2022
- d. FIDIC Model Services Agreement -White Book 2017
- e. NEC3 or NEC4 Professional Services Contract
- f. NEC3 or NEC4 Professional Services Short Contract

g. PROCSA Client/Consultant Professional Services Agreement (Edition 5 July 2021)

Any of the above standards forms of professional services agreement are suitable for use when procuring the services of a consulting engineer or other professional services provider, subject to the following comments:

- The CESA standard forms of agreement have been in use for a number of years in South Africa and are generally well known to both clients and consulting engineers and they are ideal for use on most infrastructure projects.
- The FIDIC standard form is particularly suited for use on projects involving international professional services providers and construction contractors and for international projects.
- The NEC suite of documents is used by certain state-owned-enterprises and other client bodies.
- The PROCSA standard form is used extensively for private sector building projects.



7.1 Prepare Procurement Documents

Figure 12: Process Flow for PG3: Procurement Document

The current 2019 cidb Standard for Uniformity in Construction (SFU) does not include guidelines related to the procurement of consulting engineering services or other professional service providers, but the structure of the procurement document for consulting engineering services can generally follow the format and layout described in the 2019 cidb SFU which in turn is based on SANS 10845 and ISO 10845. A proforma template of a typical procurement document for consulting engineering services is provided in Part 2 to assist clients when procuring tenders for consulting engineering services.

	Section	Sub-section
Т.0	TENDER SECTION	T1.1 Tender Notice and Invitation to Tender
	Provides information related to the tender procedure for consulting engineering services	T1.2 Tendering Procedures T1.2.1 Conditions of Tender T1.2.2 Tender Data
		T2 Returnable Documents T2.1 List of Returnable Documents, Schedules etc T2.2 Confirmation of attendance at Compulsory Tenderer's Clarification Meeting T2.3 Record of Addenda to Tender Documents T2.4 Proposed Amendments and Qualifications
C.0	CONTRACTUAL SECTION	C1.1: Form of Offer and Acceptance
	Provides information related to the contractual relationship between the client and consulting engineer, pricing details, and the project terms of reference	C1 Agreements and Contract Data C1.1 Form of Offer and Acceptance C1.2 Contract Data C1.2.1 Form of Professional Services Agreement C1.2.2 Contract Data (Specific Contractual data applicable)
		C.2 Pricing Data to establish the basis on which the consulting engineer is required to establish the tender price, such as the ECSA Guideline Professional Fees
		C.3 Terms of Reference, including the scope of services to be provided by the consulting engineer and construction scope of work.

The general structure of the procurement document should be as follows:

Table 4: General Structur	e of Procurement Document
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7.2 Tender Section

7.2.1 Tender Notice

Typically, Tenders are advertised in National Treasury eTender portal, newspapers, web sites or on notice boards. For panel appointments, tenders may be invited by email where warranted by the particular circumstances.

The Tender Notice must provide, as a minimum, the following:

- a. Description of the Scope of Services
- b. Instructions as to how to access the Tender Documents including any costs involved
- c. Closing Date and Time
- d. Manner and location where Tenders must be lodged.

7.2.2 Tender Data

The Tender Data describes the conditions of Tender. A good guide is to apply the Standard Conditions of Tender included in the 2019 SFU.

The client must use the Tender Data to specify the rules applicable to the Tender. These could include the following:

 a. Reasons disqualifie b. Means of c. Procurent d. Tendererent e. Details of f. Requirent g. Pricing inthethethethethethethethethethethethethet	for which a Tender may be ed communication hent procedures s' eligibility clarification meeting hents for insurance structions re offers submitting a Tender offer me, date, and place alidity period on of Tender queries both before the closing time obligations Registration with a professional body Procedure with regards to Joint Ventures Returnable schedules to accompany the tender offer for evaluation purposes	m. E n. F g o. M p. C d q. F tl r. S	Employer's i. ii. iii. iv. Rules to te grounds fo disqualifica Method of Dealing wi discrepance Functional hereof (se Structure of	s undertakings Responding to queries Issuing of Addenda Returning of late Tenders which will remain unopened Procedure for opening of Tenders est for responsiveness, r rejection and ation evaluation of Tender Offers th arithmetical errors, cies, and omissions ity Criteria and assessment e 0 below). of the Tender Document
	evaluation purposes			

Part 2 of this Procurement Guideline includes typical tender data for use as a guide in this respect.

7.2.3 Returnable Documents

Returnable Documents are requested from Tenderers for the client to assess the following:

- Responsiveness of Tender
- Functionality Scoring
- Risk Analysis

Typical documents required to assess Responsiveness may include the following:
- a. Confirmation of attendance to a compulsory clarification meeting
- b. Confirmation of registration on the Central Supplier Database (CSD)
- c. Current Tax Clearance Certificate or PIN number
- d. Proof of authority to sign the Tender
- e. Tender Document completed in all respects and signed by the signatory
- f. Completed supply chain returnable schedules
- g. Acknowledgement of Addenda issued
- h. Proof of Professional Indemnity Insurance

Tenderers not supplying returnable documents for Functionality and Risk Analysis should be rejected in terms of responsiveness.

7.3 Functionality Criteria

The careful development of the functionality criteria will go a long way to ensure that the client procures a consulting engineer whose capabilities match the needs of the project. Some projects are straight forward, some are complex. The table below gives an indication of possible functionality criteria and the associated weighting which may be used to match the capabilities to the needs.

Functionality Criteria		Outline	Typical Weighting
1.	Tenderer's Experience	Relevant Projects with Referee Reports	25
2.	Experience of Key Staff	List of key project team members required including minimum relevant qualifications, professional registration, and experience	50
3.	Methodology	List required content and criteria for scoring approach to project, including management of risks	20
4.	Programme	Show work breakdown structure with key milestones	5
То	tal		100

Table 5: Sample Functionality Criteria

Note that the sum of the weightings of "Experience of Key Personnel" contributes 50% of the overall Functionality Score in this example. This would be appropriate where the technical aspects of the project are more complex. Further guidance as to the breakdown of the functionality scoring for differ types of projects is provided in Part 2.

The scoring for each functionality criterion can be assessed in terms of at least four indicators as in the sample scoring below.

It is vital that the criteria are set in such a manner that subjectivity is kept to a minimum. Criteria must be well defined and measurable. Examples of criteria are provided in the sections below.

7.3.1 Company Experience

Scoring	Measure for a simple project	Measure for a complex project
0	Has not provided proof of having successfully completed a project	Has not provided proof of having completed a project of a similar complexity
5	Has provided proof of having completed a project but references were not positive	Has provided proof of having completed a project of similar complexity but references were not positive

10	Provided proof of having	Provided proof of having completed a
(Min score completed a project and		project of similar complexity and
required)	references were positive	references were positive
20	Provided proof of having	Provided proof of having completed at
	completed at least 3 projects and	least 3 projects of similar complexity
	the references were positive	and the references were positive
25	Provided proof of having	Provided proof of having completed 4
	completed 4 or more projects and	or more projects of similar complexity
	the references were positive	and the references were positive

Table 6: Sample Scoring for Company Experience

The client can be quite specific in setting the measurement criteria to ensure the consulting engineer has the relevant skills as per the following example, "Tenderers must provide details of their previous relevant experience in the design of pump stations (>300 l/s) and rising mains (>500mm diameter)".

It is recommended that references from previous clients are confirmed verbally and, if feasible, a visit to the completed projects is undertaken to verify the information provided by the consulting engineer.

Other possible functionality criteria can be included in similar tables as follows:

7.3.2 Experience of Key Staff

The client should indicate the key personnel that are envisaged to successfully deliver the services project. This might include:

- a. Team Leader or Project Manager
- b. Lead designer/engineer
- c. Discipline leaders (refer to list of disciplines in Appendix A)

The **minimum** requirements for each position should then be specified, eg

Key Staff		Compulsory Requirements (in terms of Clause F.3.11.9
		of the Tender Data)
1. Project Lead		Fifteen (15) years of experience or more on projects
		relating to the design and construction monitoring of
		AND BSo Dogroo/BTooh Dogroo/BEng Dogroo/NUD in the
		DSC Degree/Directi Degree/DEng Degree/NHD III the
		AND
		Registration with ECSA as PR Eng/PR Tech Eng
2.	Lead Design Engineer	Ten (10) years of experience or more on projects relating
		to civil and hydraulic design of similar projects
		AND
		BSc Degree/BTech Degree/ BEng Degree/NHD in the
		appropriate engineering discipline
		AND
		Registration with ECSA as PR Eng/PR Tech Eng
3.	Discipline Design	Ten (10) years of experience or more on projects relating
	Engineers (as required	to [discipline e.g. civil, structural, mechanical, electrical
	for the project)	etc] design of similar projects
		AND
		BSc Degree/BTech Degree/ BEng Degree/NHD in the
		appropriate engineering discipline
		AND
		Registration with ECSA as PR Eng/PR Tech Eng

The suggested scoring is to allocate 50% of the score where the minimum requirements are met, and a further 25% for each further 5 years of experience, up to a maximum of 50%. For example, if the position has a weighting of 10 points, 5 points would be allocated where the candidate meets the minimum requirements, and a further 2,5 points for each additional 5 years of experience, to a maximum of 5 points where the candidate has an additional 10 years of experience above the minimum requirement.

Tenderers should be required to submit CVs of each of the key personnel in a format that assists with the scoring. The maximum length of the CVs should also be specified, e.g. two pages.

7.3.3 Approach and Methodology

Minimum requirement could be "Methodology is specifically tailored to address the specific project objectives and methods of work and is sufficiently flexible to accommodate changes that may occur during execution. The quality plan and approach to managing risk is specifically tailored to the critical characteristics of the project".

The approach and methodology must respond to the scope of services and adequately cover all programmed activities in chronological order.

The client should then specify what the tenderer's submission should include, but not be limited to. For example, the following:

- a. Risk management.
- b. Regulatory compliance requirements associated with the programmed activity.
- c. Staff and resource management.
- d. Relevant approvals.
- e. Quality control.
- f. Communication and stakeholder engagement.
- g. List of service providers to be used for quality control procedures (where applicable).

The consulting engineer will need to provide objective evidence in the returnable schedules to enable the client to determine if his specific needs will be met.

Example of the rating and scoring of professional service providers is given in table below.

		Approach and methodology
1.	Poor (score 5)	The technical approach and/or methodology is poor/is unlikely to satisfy project objectives or requirements. The tenderer has misunderstood certain aspects of the scope of work and does not deal with the critical aspects of the project.
2.	Satisfactory (score 10) (Minimum Score required)	The approach is generic and not tailored to address the specific project objectives and methodology. The approach does not adequately deal with the critical characteristics of the project. The quality plan, manner in which risk is to be managed etc. is too generic.
3.	Good (score 15)	The approach is specifically tailored to address the specific project objectives and methodology and is sufficiently flexible to accommodate changes that may occur during execution. The quality plan and approach to managing risk etc. is specifically tailored to the critical characteristics of the project.
4.	Very good (score 20)	Besides meeting the "good" rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has outstanding knowledge of state-of-the-art approaches. The approach paper details ways to improve the project outcomes and the quality of the outputs.

Table 8: Sample Scoring for Approach and Methodology

The Approach and Methodology is the most difficult criterion to score objectively.

7.3.4 Programme

Programme – minimum requirement could be "Tenderer to submit a comprehensive project programme, in Gantt Chart form, which outlines all key activities and applicable resources, in sequential order, with reasonable time frames not exceeding the period of performance outlined in the contract data. The programme must also reflect the critical path.

Score	Programme
0	Programme has no links between tasks
2 Minimum requirement	Programme is logical, has links between tasks and includes a critical path
3	Programme has sufficient detail, is logical and includes a critical path
5	Programme has sufficient detail, resources, is logical and includes a critical path

Table 9: Sample Scoring for Programme

7.3.5 Pass Mark for Functionality

Should the consulting engineer fail to achieve the minimum score in any one the specified criteria, the tender should be rejected.

It is recommended that the pass mark for functionality be set higher than the sum of the scores for the minimum requirements as then the client can be sure to assess Tenders from consulting engineers that have better than marginal capabilities.

7.4 Contractual Section

7.4.1 Form of Offer and Acceptance

The Form of Offer and Acceptance in the Tender will ultimately form the basis of a Contract between the parties. It should consist of the following parts:

- a. Form of Offer
- b. Form of Acceptance
- c. Schedule of Deviations as agreed between the parties

It is recommended that the agreed Contractual timeframes are included in this documentation as a Contract without timeframes is invalid.

A Pro-Forma Form of Offer and Acceptance is provided in Part 2 of this document. The pro-forma is based on the previously published Cidb form of tender for professional services and is considered suitable for most instances involving the procurement of professional services.

7.4.2 Form of Professional Services Agreement

The standard form of professional services agreement selected in Chapter 0 above is included in this part of the procurement document either by reference or by inserting a copy of the selected document.

7.4.3 Specific Contract Data

This section of the procurement document must include any contractual data which may be specific to the particular project. Most standard forms of professional services agreement have sections in the documents which must be completed by the client when procuring the services of a consulting engineer, and a typical pro-forma form for Specific Contract Data is provided in Part 2 of this document. The pro-forma is based on the Specific Data forming part of the CESA Model Professional Services Agreement.

7.4.4 Time for Completion and Penalties

The consulting engineer must perform the services in accordance with the professional services agreement and this includes completing the services within the time specified in the Specific Contract Data. Note that the different standard forms of agreement use different terminology, for example, "time for completion", "period of performance", or "time schedule", but they all have the same meaning.

Where the consulting engineer fails to complete the services within the specified time, he/she will be in breach of the professional services contract only if it can be shown that such failure is caused solely for reasons within consulting engineer's control. The client's remedy for this type of situation would normally be to suspend or terminate the professional services agreement in accordance with the conditions specified in the applicable standard form. Some client specific forms of agreement do make provision for penalties to be applied for delayed completion of the services as commonly found in standard forms of construction contract.

If deemed necessary for the particular project circumstances, a penalty clause may be included in the Specific Contract Data in which case a penalty amount per day and a maximum penalty amount must be specified. Note that if a penalty clause is to be successful, the daily rate and the maximum amount must be reasonable relative to the total value of the professional services agreement.

7.4.5 Liability

In terms of the standard form of professional services agreement the client and the consulting engineer are liable to each other in the event of a breach of either party's obligations in terms of the agreement. This includes errors and omissions caused by the consulting engineer's negligent actions, for example design errors or errors by the consulting engineer during construction of the works.

Consulting engineers are exposed to significant risk in the normal course of their work as the possible consequences of the failure of an engineering structure or system can be enormous, even more so if the failure involves injury or loss of life to persons. It is therefore imperative for consulting engineers to limit their liability, a practice which has become accepted not only in South Africa but also in most other countries around the world.

Liability for a breach by the consulting engineer of any provision of the professional services agreement is normally limited in respect of the amount of damages payable as well as in respect of the duration of the liability.

Limitation of liability is globally accepted as good business practice and most standard forms of professional services agreement, including CIDB, FIDIC and CESA all include clauses which limit the liability of either party to the contract to the other (i.e. both the client and the consulting engineer). The amount of the damages is normally limited to a multiple of the total fees due in terms of the professional services agreement, the commonly accepted amount being twice the value of the professional fees.

Depending on the nature of the professional services provided, where this includes detailed design, the duration of the liability will normally extend for a period of three years after completion of the construction.

7.4.6 Professional Indemnity and Public Liability Insurance

In order to protect the client's interests arising out of a breach of the consulting engineer to undertake his/her professional duties it is essential that the consulting engineer must arrange and maintain professional indemnity insurance and public liability insurance for the duration of the professional services agreement. It is recommended that proof of such insurance should be requested with the tender for professional services bearing in mind that professional indemnity insurance must be provided by reputable insurers with proven experience within this specialised field. The amount of the insurance, as well as the deductible (first amount payable by the consulting engineer), should be stated in the Specific Contract Data.

Note that the consulting engineer should not be required to show proof of professional indemnity insurance in excess of the limit of liability stated in the Contract Data (see 0 above).

7.4.7 Performance Guarantees (Sureties)

Although most standard construction contracts include clauses calling for the provision of performance bonds, or sureties by the contractor, this is not generally required when procuring the services of a consulting engineer. The performance guarantee in a construction contract protects the employer from the risk of the failure by the contractor to pay any amounts that might be owing to the employer. This includes costs associated with termination of the contract when the contractor fails to perform, or costs associated with the sequestration of the contractor. These events can result in significant costs for the employer, hence the need for a performance guarantee. The corresponding risks in a professional services appointment are far less because payments are only made on the consultant achieving a particular milestone or submitting a particular deliverable.

National Treasury Practice Note No. SCM 3 of 2003 states that bid, and performance securities are not recommended for consultant's services because their enforcement is often subject to judgement calls, they can be easily abused, and they tend to increase the cost of the consultancy without evident benefits.

In the event of the consultant not exercising reasonable professional skill, care, and diligence in the performance of the services the client is entitled to institute a claim against the consultant in an amount up to the limit of liability under the agreement.

For the above reasons it is so important to ensure that the consulting engineer appointed for any infrastructure project has the necessary skills, expertise, and resources to undertake the work and this can only be achieved by laying down strict functionality criteria when drawing up the professional services contract and ensuring that tenders are responsive to these criteria.

7.4.8 Pricing Data

The client must describe the basis on which the consulting engineer is to determine the price for the services offered. For example, it may be stated that the remuneration for the services will be in accordance with the ECSA Guideline Scope of Services and Professional Fees, in which case the applicable version of the document must be stated (Gazette number and date). The method of pricing, such as percentage based, or time based, or lump sum, should be stated. Should there be any deviations from the pricing data described in a standard document such as the ECSA Guideline, then these must be described in detail in this section.

The consulting engineer will calculate the tender price for the performance of the consulting engineering services based on the terms of reference provided by the client in the procurement documentation. The consulting engineer is entitled to rely on the accuracy and correctness of the information provided to arrive at the tender price and it is therefore essential that the tender document includes a comprehensive and accurate description of both the scope of work and the scope of services required. This aspect is described in more detail in 0 below.

It is equally important that the Pricing Data in the tender document must be set out in a manner that will ensure that the tenderer has a clear understanding of the manner in which to price the work. The tenderer will only price what is described in the tender documents and so it is important that the Pricing Data makes allowance for everything required.

Generally, there are four components to the price for typical consulting engineering services:

7.4.8.1 Normal Services

These are the services normally carried out by a consulting engineer and it is for this reason that reference should be made to a guideline such as the ECSA Scope of Services which clearly describes the normal services carried out by a consulting engineer, broken down into six stages as described in 7.4.9 below.

The most convenient method of pricing is for the tenderer to submit a percentage-based fee on the estimated cost of the work. Note that CESA does not recommend that the tender should be priced on the basis of the magnitude of a discount offered on the ECSA guideline fee because this usually results in reckless fee discounting with possible serious consequences not only for the consulting engineer but also for the client and, potentially, for infrastructure delivery in South Africa. It is noted that in many instances involving percentage based, or lump sum tenders for consulting engineering services, the client will specify a limit, often around 10%, on the magnitude of any discount offered compared with published fee guidelines. Tenders with discounts exceeding the specified limit are then considered to be non-responsive.

7.4.8.2 Construction Monitoring

This is another essential component of the services provide by a consulting engineer. The ECSA Guideline describes three Levels of construction monitoring services, namely:

- a. Level 1: Periodic Construction Monitoring,
- b. Level 2: Part-time Construction Monitoring, and
- c. Level 3: Full-time Construction Monitoring.

The desired level and extent of construction monitoring must be defined and agreed between the client and consulting engineer. This will depend on the nature, size, complexity, and construction duration of the infrastructure project. Normally it is recommended that full-time construction monitoring should apply, but this is not always the case, bearing in mind that the client carries increased risk if too low a level of construction monitoring is chosen.

Because of the uncertainty about the level and extent of construction monitoring at the time of tendering, it is often convenient to allow a provisional sum for this portion of the services, or to ask the tenderer to price a provisional amount which is subject to remeasurement and adjustment. The amount should be priced on the basis of submitted hourly/weekly/monthly rates, as appropriate together with estimated time durations.

7.4.8.3 Additional Services

The ECSA Guideline describes a large number of services which are not regarded as part of the normal services, and which will therefore not be included in the normal fee price determined by the tenderer. In order to ensure that the client does not incur unplanned or unforeseen additional costs, the Pricing Data should make allowance for the additional services preferably by providing an accurate list and description of the additional services required, or by allowing suitable provisional sums. In either case the additional services which may be required should be identified and described as accurately as possible in the Pricing Data. The additional services are normally priced on a time and cost basis so the Pricing Data should provide for the submission of hourly rates for the consulting engineer's staff together with estimated times.

7.4.8.4 Expenses and Costs (Disbursements)

The consulting engineer will normally be entitled to recover various expenses and costs incurred in performing the services which may include travelling costs, accommodation, and subsistence, typing, printing, copying and similar costs of reproduction of drawings, documents, reports, etc. These costs are normally calculated on the basis of agreed rates, either following the client's published rates or using rates published by a recognised body, such as the Department of Public Works and Infrastructure.

Travelling costs to site should be limited to the cost of travelling from the nearest large city/town where it may reasonably be expected that the consulting engineer should have a permanent office. This requirement is intended to prevent so-called out-of-town firms from unfairly recovering excessive travelling costs from the client which would not be the case if a local firm is appointed to carry out the services. In such instances the Pricing Data should describe the maximum travel distance per trip.

As in the case of other costs which are difficult to quantify at the time of tendering, it may be convenient to allow a provisional sum for disbursements.

7.4.8.5 Contingencies and Escalation

In the past the schedules of quantities included for contingencies and escalation. This has now been discontinued and the responsibility, should contingencies be required, or escalation be applicable, now rests with the Client to ensure that project has sufficient budget allocated for these items.

a. Contingencies

Variation procedures must be in place to cater for unforeseen circumstances. In cases where these are foreseen, but not able to be quantified at tender stage, provisional sums should be included, and the detailed costs calculated at an appropriate time. This will help prevent the problems associated with the processes required to increase budgets at a later stage.

b. Escalation

It is common to use CPI as the index for price increases on projects that extend beyond one year. In this case the personnel rates or lump sum are increased by the applicable CPI at the start of each subsequent year of the project. A provisional sum for escalation should be included in the pricing data. This is a fairer allocation of risk than requiring the consulting engineers to allow for escalation in their pricing.

Note that on percentage fee contracts, where the fee is calculated as a percentage of the actual cost of the works, the fee will be automatically adjusted as the works proceed if escalation is applicable on the works contract.

7.4.9 Terms of Reference

Scope definition is a critical component in procuring meaningful tenders for consulting engineering services. Often a poorly defined scope or timeframe will lead to widely disparate tendered sums. These tenders are extremely difficult to compare and court challenges may ensue. The tender process may need to be repeated leading to long delays in infrastructure delivery.

Where scope is difficult to define such as in the case of 3-year panel appointments where the services of a consulting engineer is required on an "as and when" basis, it is useful to call for tenders based on a schedule of rates. This type of appointment is suitable for simple tasks of short duration. Complications can arise when consulting engineering services contracts are discontinued after the 3-year window and new consulting engineers are appointed to continue the project. This can result in split responsibility especially in terms of claims against professional indemnity insurance when defects are uncovered after the expiry of contracts.

A clear and detailed description of the project terms of reference, including both the project scope of work as well as the scope of the services to be performed by the consulting engineer are essential and must include the following:

The scope of work describes the work which will be carried out by a construction contractor. For example the contractor's scope of work may be to build a school, or to construct a road. When procuring the services of a consulting engineer it is essential that the scope of the construction work must be described in sufficient detail to enable the consulting engineer to accurately determine the project extent and parameters and be able to estimate the engineering effort that will be required to perform the scope of services. The scope of services must consider the initial project cost estimates and programme of the scope of work.

The description must be clear and detailed. For example, it is no good simply asking for a tender for consulting engineering services to build a road from A to B. The tender document must include a proper description of the type of road, details of any structures such as bridges that may be required along the way, drainage and a stormwater information, pavement requirements, etc, etc. Similarly in

the case of a building there must be a proper description of the type of building, its size (floor area and height), usage, a description of the accommodation and finishes required, etc, etc.

The scope of works must also describe the portion of the overall works for which the consulting engineer must take responsibility in his scope of services. For example the scope of works may include the entire project or only a portion thereof, for example, the structural or the electrical engineering works.

All the above is essential to enable the consulting engineer to determine the resources which will be required to be assigned to the task of undertaking the consulting engineering services for the successful delivery of the project works. The consulting engineer will have to decide on the particular skills and expertise that will be required and the number and level of engineers, technicians, drawing office staff and administration personnel.

In many instances, and particularly in the case of building projects, several different professional service providers, such as an architect, civil engineer, structural engineer and electrical and mechanical engineers, will be appointed and each one will be responsible for a different portion of the works. The scope of work for each service provider must be carefully defined to ensure that there are no overlaps and/or duplication in terms of scope of services. In some cases the consulting engineer will be required to appoint specialist sub-consultants in which case the consulting engineer is responsible to ensure that no duplication in terms of scope occurs.

It is for the above reasons that, if the client does not have adequate in-house resources to develop the scope of works properly, this task should be undertaken by a separate professional service provider as described in Chapter 0.

The scope of services is equally important to enable the client and consulting engineer to have a clear and common understanding of the services that the consulting engineer will perform during the delivery of the project.

The ECSA Guideline Scope of Services and Professional Fees is a useful basis for describing the scope of services. Clause 3 of the Guideline describes the services normally performed by the consulting engineer which are set out in six typical project stages and including the concept and detailed design, contractor procurement, and construction administration and inspection as set out in the diagram below:



Figure 103: ECSA Scope of Services

The ECSA Guideline not only provides a comprehensive list of the services that are typically carried out by the consulting engineer (described as "Normal Services" in the Guideline), but it also provides a detailed list of services which do not normally form part of the Normal Services, and which are regarded as "Additional Services". The consulting engineer must be remunerated for performing these additional services over and above the normal fee and for this reason it is essential that there is a detailed understanding between the client and the consulting engineer as to the extent of the additional services required for a project.

The ECSA Guideline Scope of Services and Professional Fees may be viewed and downloaded from the ECSA website by selecting the applicable version of the document at https://www.ecsa.co.za/regulation/SitePages/Guideline%20Fees.aspx

8 SOLICIT TENDERS, EVALUATE AND AWARD

Confirm Cash Flow is available

8.1 Procurement Gate 4: Confirm Cash Flow



8.1.1 Confirm Financial Arrangements

Confirming that there is sufficient budget to cover the contractual commitments is a key action in the procurement process. Where the contract is likely to extend over more than one financial year, budgetary provisions will be required over the MTEF. For large and mega projects which extend beyond the MTEF, future funding requirements must be provided in the submissions to Treasury in terms of Section 33 of the MFMA. The full annual operating and maintenance costs, as well as and monitoring and evaluation costs over the lifetime of the asset, need to be included in the submissions as well.

As projects progress through the distinct stages from the Initiation Stage to the Works Completion, the budget and cash flow should be updated as further detailed information becomes available.

It is also necessary to ensure that the month-to-month cash flow forecast on a contract is prepared so that there are sufficient funds to cover this within each financial year.

8.1.2 Control Measures for Payment

The accounting officer must ensure that there are control measures in place for payment of the consultant within the time period provided for in the contract.

Should these control measures not be in place, and payments are delayed beyond the time period provided for in the contract, the client may become liable for interest claims.

8.2 Procurement Gate 5: Solicit Tenders



Figure 15: Process Flow for PG5: Solicit Tenders

8.2.1 Invite Tender Offers

Tender offers should be invited in accordance with the client's supply chain management (SCM) policy.

Typical requirements of the SCM policy are:

a. Three written quotations can be called for where the value of services is less than R 200 000 including VAT. Where the quotations are invited from service providers on a panel approved by

the appropriate authority it is not necessary to advertise for seven days on the National Treasury e-tender portal.

- b. Where the value of the services exceeds R 200 000 including VAT, an open, competitive bidding process mechanism should be used.
- c. A two-stage bidding process may be followed in the following cases:
 - i. where the requirements are not easily determinable;

ii. in the case of complex projects or sensitive services requiring security clearance. This would entail inviting, by open, public tender, prospective tenders who are then are prequalified to participate in the second stage on the basis of their technical expertise and their ability to undertake the project.

8.2.2 Hold Tender Briefing Session (Clarification Meeting)

Tender briefing sessions are normally held where consulting services for infrastructure projects are being solicited, except in the case of small or simple projects. It is sometimes practical to hold on-line briefings. However, where warranted, the client may decide to hold the briefing session on the site of the works.

A decision needs to be taken as to whether the briefing is compulsory or non-compulsory. If the briefing is not compulsory, a registration system for all tenderers must be established so that any addenda to the tender documents can be sent all who have registered.

8.2.3 Receive Tender Offers

Tenders received need to be recorded and safeguarded. A report on the list of tenderers who submitted tenders and the time of their submittal should be prepared.

Procurement Gate 5 is complete when the delegated person or body ensures that all received tender offers are duly accounted for.

8.3 **Procurement Gate 6: Evaluate Tenders**



Figure 16: Process Flow for PG6: Evaluate Tenders

The minimum requirements for Procurement Gate 6 are as follows:

- a. Open and record tender offers received.
- b. Determine whether tender offers are complete.
- c. Determine whether tender offers are responsive.
- d. Evaluate tenders in terms of functionality.
- e. Evaluate tender submissions for price and preference.
- f. Perform a risk analysis.
- g. Prepare a tender evaluation report.

PG 6 is complete when a person or body reviews the evaluation report and ratifies recommendations.

8.3.1 Open and Record Tender Offers Received

All Tenders that are received on or before the specified closing date and time should be opened in public.

Tenders must be recorded on a register indicating the following:

- a. Name of Tenderer
- b. Tender Sum

- c. Document containing Returnable Schedules (if requested)
- d. Contract Period (if requested)
- e. Alternative Tender (if offered)

Any late Tenders must be returned unopened to the Tenderer.

8.3.2 Completeness

Tender Documents that are not signed or completed in full should be rejected.

8.3.3 Responsiveness

Only Tenders that are deemed responsive according to the assessment of documentation provided as detailed in 7.2.3 should be evaluated further in terms of functionality.

8.3.4 Functionality

The Responsive Tenders must now be evaluated in terms of Functionality as specified in the Tender Data.

The documentation supplied by the Tenderers as Returnable Schedules will be used to validate their capabilities in terms of the functionality criteria. Evaluating these documents and scoring the Tenderer requires understanding of the functionality criteria and clients should avoid subjectivity by having at least three technical persons on the evaluation panel.

Any tender that makes it through the functionality scoring will then be evaluated on Price and Preference according to the 80/20 or 90/10 preference point systems.

8.3.5 Price and Preference

The Tenderer scoring the highest number of points according to the 80/20 or 90/10 preference point systems should be considered to be the winning tender unless there are compelling reasons arising from a Risk Analysis to disregard this tender.

8.3.6 Risk Analysis

Factors which may not be readily apparent from the submission of the documents required in the Tender Data may include:

- a. Concurrent court cases or disputes
- b. Excessive workload
- c. Current financial situation
- d. Rates that are skewed
- e. Conflict of interest

If any of these risks are significant then the next highest scoring tender should be considered. It should be borne in mind that the risk profile of the winning tenderer could change if the evaluation process is extended for a considerable length of time, as is often the case.

8.3.7 Tender Evaluation Report

A Tender Evaluation Report must be prepared for the relevant Adjudication Committee. This report must include record which Tenders were received and list, with reasons, those that were rejected for being late, incomplete, or non-responsive.

It must include a detailed analysis of the Tenders that passed the Functionality criteria and must highlight the following:

- a. Scores for Price and Preference
- b. Comparison of Rates for all the Tenders submitted

- c. Any deviations in terms of specifications and/or qualifications
- d. Alternative Tender offers
- e. Arithmetical errors and omissions
- f. Risk Analysis assessment
- g. Recommendations

8.4 Procurement Gate 7: Award the Contract



Figure 17: Process Flow for PG7: Award the Contract

The minimum requirements for Procurement Gate 7 are as follows:

- a. Notify successful tenderer and unsuccessful tenderers of outcome.
- b. Compile contract document.
- c. Formally accept tender offer.

PG 7 is complete when a delegated person or body confirms that the tenderer has provided evidence of complying with all requirements stated in the tender data and formally accepts the tender offer in writing and issues the consulting engineer with a signed copy of the contract.

The brief to the consulting engineer must be confirmed by the client, with confirmation of the requirements given in the tender Scope of Services or, if these are to be modified, with negotiation and contractual agreement on the terms of the contract.

The Scope of Services must include items such as all technical requirements, financial conditions, budget constraints, programme requirements and approval processes.

Many clients incorrectly believe that it is sufficient to send the successful tenderer a letter of acceptance to conclude the contract. While it is the case that the consulting engineer's proposal constitutes an offer and this together with the letter of acceptance would together constitute the contract, there are a number of details regarding the agreement which it is recommended are formalised in a contract document signed by both parties.

The contract document will essentially be the tender document if this has been prepared following the format given in **Error! Reference source not found.** above, with the addition of any other documents, s uch as certain of the returnable schedules, to be included under the contract data section where applicable.

It is important to list the various documents making up the contract and specifying their hierarchy in the event of discrepancies between them. The pro-forma Agreement contained in the CESA Model Professional Services Agreement and Specific Data May 2021 makes provision for additional documents to be included in the agreement and for amendments to the Conditions of Agreement.

The need for a comprehensive contract document appropriate to the project cannot be overstated – it will form the basis of the working relationship between the parties and minimise the risk of misunderstandings which can lead to problems or disputes later.



Figure 18: Process Flow for PG8: Administer the Contract

The minimum requirements for Procurement Gate 8 are as follows:

- a. Capture contract award data.
- b. Administer contract in accordance with the terms and provisions of the contract.
- c. Ensure compliance with contractual requirements.

PG 8 is complete when a delegated person captures contract completion/termination data.

9.1 Communication and Liaison

If the consulting engineer is to provide the client with the required standard of service, then it is essential that there be good and ongoing communication between the parties. This process should start on the award of the contract to the successful tendering consulting engineer.

The client should advise the consulting engineer of the way he intends to monitor the latter's performance. It is highly likely that the consulting engineer's own quality management system requires completion by the client of a "Client's Satisfaction Questionnaire" during and/or at end of the assignment. In such cases it is desirable for the parties to collaborate on the framework of the evaluation system so that it meets the requirements of both parties. Table E-1 in Appendix E shows a typical Consulting Engineer Performance Scorecard for use in this regard.

Where the client finds serious or repetitive cases of inadequate performance or transgressions of the CESA Code of Conduct by a member firm, this should be reported to the Chief Executive Officer of CESA who will investigate the matter and take the necessary action against the member. Alternatively, complaints against individuals (not firms) registered with the Engineering Council of South Africa may be lodged by the client with ECSA.

Clearly, the implementation of a process of regular performance monitoring should avoid the need for such drastic steps.

9.2 Suggested Performance Monitoring and Evaluation Process

The process suggested is based on the client's consideration of key activities to be performed by the consulting engineer and using a scorecard system to evaluate the consulting engineer's performance.

The scoring system uses categories of evaluation that have been found through research to be important to clients and uses selected sub-categories as shown in Table E-2 in Appendix E. Clients could modify or add sub-categories to suite their own particular needs.

9.3 Points to Note

Strictly speaking this chapter on monitoring the performance of consulting engineers is not part of the procurement process. It is however relevant to include it as a sequel to procurement, because, arising from the emphasis on quality in the evaluation of tenders submitted by consulting engineers, the monitoring of their performance will assist to ensure that the highest standards of quality are maintained. Client feedback gives ongoing opportunity for the improvement in the quality of services.

Many consulting engineering firms will have in their QMS a procedure to record Client Satisfaction, as required by ISO 9001:2008 and this can be used for monitoring the Consulting Engineering Performance in place of Appendix E-1.

APPENDICES

APPENDIX A: LIST OF ENGINEERING DISCIPLINES

Ge	neral Services	Specialised Services
	Agricultural Engineering	Airports
	Asset / Facilities / Maintenance Management	Architectural
	Building Services & Utilities	Boilers & steam plant
	Chemical Engineering	Bridges
	Civil Engineering	Coastal Engineering
	Electrical Engineering	Dam Engineering
	Electronic Engineering	Environmental Impact Assessments & Management
	6 6	Plans
	Environment Engineering	Expert Witness & Forensic Engineering
	Fire Engineering	Fire detection systems
	Geotechnical Engineering	Fire protection systems
	Industrial & Process Engineering	Healthcare Facilities
	Marine Engineering	Heating, Ventilation & Air-Conditioning
	Materials Handling	Highway Engineering
	Mechanical Engineering	Hydrogeology
	Mechatronics Engineering	Hydrology
	Metallurgy	Information & Communications Technology
	Mining Engineering	Landfill Engineering
	Municipal Engineering	Landscape Architecture
	Project Management* (must be PrCPM)	Lifts, escalators, & hoists
	Roads & Pavement Engineering	Lighting Design
	Structural Engineering	Mine Closure & Reclamation
	Township Services	Pavement Management Systems
	Traffic Engineering	Permitting and Regulatory Compliance
	Transportation	Piped services and plant
	Wastewater Treatment	Pipelines & Pump Stations
	Water Engineering	Ports & Harbours
	Water Treatment	Power generation (prime & standby)
		Quantity Surveying and Cost Engineering
		Railway Engineering
		Refrigeration & Cold Rooms
		Renewable energy
		Retaining Structures
		River Structures
		Road Materials Laboratory Testing Services
		Rural Development
		SCADA, Control, & Instrumentation
		Security, access control and communications
		Seismic Design
		Soil & Groundwater Investigations
		Substations & protection systems
		Lalings & Mine Waste Management
<u> </u>		I opographic Survey
		Iunneis
		Waste Management
		vvater Resources Management
		Water Supply
I		Wet services

APPENDIX B: PANEL APPOINTMENTS AND FRAMEWORK AGREEMENTS

It frequently arises that clients need to procure consulting engineering services before being able to identify specific projects and hence are unable to write a detailed, project –specific Scope of Services and Scope of Work. In these circumstances the procurement of consulting engineering services by means of a panel appointment or framework agreement provides a more feasible approach, saving time and effort on the part of the client and the responding consultants in the procurement of the services.

Panel appointments and framework agreements are only entered into with consulting engineers who have the resources and capability to carry out the services envisaged and the invitation to apply must include the means by which the consulting engineer is remunerated for the instructed work. Hence the evaluation of tenders for panel appointments and framework agreements must be based on functionality as well as price – and not price alone. The client's functionality criteria and basis of remuneration of the consulting engineer must accordingly be clearly indicated in the tender document.

Panel Appointments

Panel appointments are used where a client has determined the project types to be delivered in an ensuing period (usually three financial years), but the scope of services and scope of work for each project cannot yet be clearly defined. Tenders are invited for the "the Appointment of a Panel of Consultants for the provision of Professional Engineering Services" for the period concerned.

To be eligible, a tenderer must, submit a proposal with the normal statutory prequalification and functionality requirements and provide a basis for determining the fee for the individual projects for which they are appointed, in the format required by the client. In view of the uncertainty in the scope of the projects for which the various consultants on the panel will be appointed, it is recommended that the ECSA fee guideline be used, as the fee can then be determined based on the cost of the works. However, rates for various categories of both office- and site-based staff should also be provided by the consultants applying to be on the panel so that time and cost-based and construction monitoring appointments can be made from the panel.

The appointment of a consultants from the panel for a specific project will be governed by a separate professional services agreement, for example the CESA Professional Services Agreement, using the pricing submitted by the consultant with their panel application. The Scope of Services will be the Normal Services set out in the ECSA Guideline Tariff of Fees plus certain Additional Services. A typical example is given below:

Client A major Metropolitan Municipality

<u>Purpose</u> To establish a panel of engineering consultants for water and sanitation projects <u>Scope of Services</u> Normal Services + some Additional Services of the ECSA Guideline Tariff of Fees (described)

<u>Scope of Work</u> Description of the type of projects envisaged, e.g. basic sanitation, extension to water & sewer systems, etc. In addition specifications given for ancillary services such as laboratory services, GIS services, Contract documentation, Construction Supervision, Design criteria, Client approvals.

<u>Functionality criteria</u>, for example, company experience including letters of reference, staff experience and qualifications in each category named by client.

<u>Professional services agreement governing the projects</u> eg CESA Professional Services Agreement. Particular conditions that will apply should also be stated.

<u>Pricing requirements</u> Based on Percentage-based fees in ECSA Guideline Tariff using Activity schedules to be priced for each project, consisting of:

- 1) Estimated percentage fees based on a typical value of project given by the client), made up of
 - i. Primary fee
 - ii. Secondary fee
 - iii. Markup + or on Primary and Secondary fees by tenderer
- 2) Extra over fees for stated additional services (e.g. Resident Engineer and site staff) with unit/rate/quantity/amount
- 3) Recoverable Expenses for stated items (e.g. printing) with unit/rate/quantity/amount
- 4) Provisional cost sums named by client (e.g. laboratory services) With % markup by tenderer
- 5) Total of Subtotals (1) to (4)

Tenders are first evaluated on the basis of Functionality and then those having achieved the minimum score for Functionality are evaluated on the basis of Price and Preference. The Client then selects the required number of consultants for the panel with the best overall score.

Appointments for specific projects from a panel of consultants can also be made on the basis of a roster from which a shortlist of five qualified consultants with expertise in the discipline required for the specific project are selected from the top of the roster. The client's project team then evaluate the suitability of the first consultant on the list and if suitable puts this company forward to the bid evaluation committee. If not suitable, reasons are provided and the next consultant from the shortlist is evaluated, and so on, until a suitable company is selected. The company selected for the project is then placed at the bottom of the roster. This system ensures that work opportunities are distributed amongst the consultants on the roster.

The Western Cape Department of Transport and Public Works has introduced an online consultant register system that operates on this basis. See <u>https://crs.westerncape.gov.za</u>.

Framework Agreements

By definition, a framework agreement is an agreement between an organ of state and one or more consulting engineering firms or contractors, the purpose of which is to establish the terms governing orders to be awarded during a given period, in particular with regard to price and, where appropriate, the scope of services envisaged.

The Framework Agreement is designed to allow the client to invite tenders from consulting engineers to carry out work on an "as instructed" basis over a set term. Generally The Framework Agreement is between two parties that establishes their terms for services over a set period of time, within a broad scope of work, without guaranteeing any quantum of services. The rationale behind using such agreements is that it saves the client from having to procure from the market each time a service, covered by the Framework Agreement, is required. This results in savings in procurement time and costs whenever a delivery requirement (also called a Task Order or Call-off contract) is to be made for a specific project.

An example is given below :

Client A major Metropolitan Municipality

<u>Purpose</u> Creation of a panel of consulting engineers to be allocated Task Orders <u>Required</u> Framework Agreements with selected consulting engineers, for 3 years <u>Scope of Services</u> 26 different "Service Areas" described – e.g. OHS Assessments, Gravel road maintenance & construction, Urban roads (large works), Traffic engineering, Electrical engineering (Buildings) etc., etc.

<u>Form of Agreement:</u> Provide the form of agreement and particular conditions governing the framework agreement and downstream projects

<u>Scope of Work</u> Described in general terms for each Service Area

<u>Functionality criteria</u> Tenderers satisfying the following specific criteria per Service Area become eligible :

- Suitable in-house capabilities
- Fifty percent of Directors and Members professionally registered
- Primary business is consulting engineering
- Minimum total turnover and turnover within Framework scope
- Professional Indemnity insurance

Further particular Quality criteria

- Tenderer's experience in relation to the Service Area
- Adequacy of resources for the service
- Knowledge of issues pertinent to the service
- Experience of tenderer for the last 5 years
- Value added by tenderer (Aspects by client, responses by tenderer)

Pricing requirements

• Percentage fee based on ECSA fee guideline for the value of works specified by the client in each discipline (i.e. civil, structural, mechanical, electrical, etc)

 Rates for key staff categories required by client, e.g. project lead, discipline leads other technical staff (various categories), site staff. Alternatively hourly rates can be determined on the basis of the ECSA time-based fee rates. (See Clause 4.4 of the ECSA Scope of Services and Tariff of Fees)

Returnable Schedules

Include; Experience of key staff Experience of tenderer, last 5 years Value added: responses by tenderer to aspects named by client

The NEC is the most suitable form of contract for use as a Framework document. Subsequent to the Framework Agreement being entered into by the parties it can be used for different types of contract for Task Orders – for example Target Contracts.

For further information, see the cidb Practice Note 15 on Framework Agreements available at https://www.cidb.org.za/download/99/practice-notes/6116/practice-note-15-framework-agreements.pdf

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APPENDIX C: EXAMPLES OF INTERNATIONAL BEST PRACTICES - PROCUREMENT OF CONSULTING ENGINEERING SERVICES

	World Bank	FIDIC	The United States
			Government (eg Florida
Publication	Procurement Regulations for	Quality Based Selection	Dept. of Transportation
Fublication	IPF Borrowers	FIDIC	Summary of Procedures
Method of	Quality- and Cost-Based	Quality-Based Selection	Qualifications-Based
Selection	Selection (QCBS)	(QBS)	Selection (QBS)
	OthersA. Quality-Based Selection (QBS)B. Selection under a Fixed BudgetC. Least-Cost SelectionD. Selection Based on Consultants' QualificationsE. Single-Source Selection	OthersA. the two-envelope methodB. the cost-weighted methodC. the budget methodD. design competition with pricesE. price negotiation	 by law, consultant services for federal work are procured by Qualification Based Selection (QBS) The vast majority of the individual States also require the QBS system for consultant
Quality	a) Consultant's specific	a) Professional	services. a) Professional
Criteria	 experience: 5 to 10 points b) Methodology: 20 to 50 points c) Key personnel: 30 to 60 points d) Transfer of knowledge:¹⁶ 0 to 10 points e) Participation by nationals:¹⁷ 0 to 10 points Total: 100 points 	 a) Professional experience b) Managerial ability c) Availability of resources d) Professional independence e) Professional integrity f) Quality assurance system g) Fairness of fee structure For short listing FIDIC apply more specific Quality Criteria, see overleaf. 	 d) Protectional qualifications necessary for satisfactory performance of the required services b) Specialised experience and technical competence in the type of work required. c) Capacity to accomplish work in the required time d) Past performance on contracts with Government agencies and private industry. e) Location of offices f) subcontracting plans
Weighting the quality and cost	Except for the type of services specified in Section III, the weight for cost shall normally be in the range of 10 to 20 points, but in no case shall exceed thirty points out of a total score of one hundred	Not applicable	
Award of Contract	The firm obtaining the highest total score shall be invited for negotiations.	The number one ranked of provide a fee proposal for	consultant is requested to the project.

Quality Based Selection (QBS) World Wide

The QBS system is advocated and/or used effectively by the following organisations around the world:

- Association of Consulting Engineers of Canada (QBS)
- Inter-American Development Bank (QCBS/QBS in certain cases Similar to World Bank)
- American Council of Engineering Companies (ACEC)
- American Public Works Association (APWA Red Book on QBS Guidelines on APWA website)

APPENDIX D: USEFUL WEBSITES

The following table contains useful references relating to the Procurement of Consulting Engineering Services:

No	Reference	Downloadable at Weblink
1	Benefits of Membership (CESA)	https://www.cesa.co.za/membership-benefits/
2	Qualification Based Selection (Association of	https://assets.nationbuilder.com/acenz/pages/14
	Consulting Engineers New Zealand	62/attachments/original/1593474399/PN_P16-
		Qual.BsdSelec1996.pdf?1593474399
3	Biennial Economic & Capacity Report (CESA)	https://www.cesa.co.za/becs/
4	Bills, Acts, Government Gazettes (GG)etc	https://www.gov.za/documents/acts
5	Broad Based Black Economic Empowerment	https://www.gov.za/sites/default/files/gcis_docu
	Act (53 of 2003)	ment/201409/a53-030.pdf
6	Capital Asset Management Framework –	https://www2.gov.bc.ca/gov/content/government
	Guidelines for Capital Procurement –	s/policies-for-government/capital-asset-
	Government of British Columbia	management-framework-guidelines/capital-
		procurement#8.5.1
7	cidb Act (38 of 2000)	https://www.cidb.org.za/resource-
_		centre/downloads-2/#47-96-wptd-legislation
8	Code of Conduct (CESA)	http://www.cesa.co.za/public_downloads/cod
_		e_of_conduct.pdf
9	Code of Conduct for the parties engaged in	https://www.cidb.org.za/download/100/procur
	Construction Procurement (cldb)	ement-documents-templates-and-
		guidelines/6124/cldb-code-of-conduct-for-
		nrocurement ndf
10	Constitution of Ropublic of South Africa	https://www.gov.zo/documents/constitution/const
10	Constitution of Republic of South Africa	itution-republic-south-africa-1996-1
11	Amended Construction Charter (Govt Gazette	http://www.thedtic.gov.za/wp-
	Notice 931 of 2017)	content/uploads/Amended-Construction-
		Codes.pdf
12	Engineering and technical consultancy	https://www.gov.scot/publications/engineering-
	procurement: framework	and-technical-consultancy-framework/
13	Guidelines for Selection, Appointment and	https://www.devb.gov.hk/filemanager/en/content
	Management of Consultants under the purview	1202/EACSB%20Guidelines%20Rev.%20No.
	of the Engineering and Associated	%202%20-%20clean%20version.pdf
	Consultants Selection Board, Hong Kong	
14	Consultants Guidelines (Dept of Public Works	http://www.publicworks.gov.za/consultantsdocs.
	and Infrastructure)	<u>html</u>
15	FIDIC Guidelines for the Selection of	https://fidic.org/books/selection-consultant-3rd-
	Consultants	<u>ed-2019</u>
	Third Edition, 2019	
16	Finding a consultant or engineer Association	https://www.acenz.org.nz/hiring a consultant
	of Consulting Engineers New Zealand	
17	Selection of Engineering Services –	https://www.peo.on.ca/index.php/public-
- 10	Professional Engineers of Ontario	protection/working-professional-engineer
18	Guideline Scope of Services & Tariff of	nttps://www.ecsa.co.za/regulation/SitePages/
10	Cuidelines Selection and employment	bttps://decuments.worldbank.org/on/publication/
19	Guidelines Selection and employment	nttps://documents.worldbank.org/en/publication/
	or consultants under IBRD loans and IDA	uocuments- reports/documentdetail/615761469222422244/a
		uidelines-selection-and-omployment of
		consultants-under-ibrd-loans-and-ida-credite
		and-grants-by-world-bank-borrowers
20	CIDB Practice Notes	https://www.cidb.org.za/resource-
20		centre/downloads-2/#47-99-wnfd-nractice-notes
21	CESA Forms of Agreement	https://www.cesa.co.za/contract-documents /

22	Mediators, Arbitrators & Adjudicators (CESA)	https://www.cesa.co.za/list-of-med-arb-adj- directory-2022/
23	Municipal Finance Management Act (56 of 2003)	https://www.gov.za/sites/default/files/gcis_docu ment/201409/a56-03.pdf
24	National Treasury website	http://www.treasury.gov.za/#
25	Preferential Procurement Policy Framework Act (5 of 2000)	https://www.gov.za/sites/default/files/gcis_docu ment/201409/a5-000.pdf
26	Preferential Procurement Regulations 2022 (GG 47452 dated 04 November 2022)	https://www.gov.za/sites/default/files/gcis_docu ment/202211/47452gon2721.pdf
27	Prevention & combating of Corrupt Activities Act (12 of 2004)	https://www.justice.gov.za/legislation/acts/2004-012.pdf
28	Procurement Best Practice Guidelines (cidb)	https://www.cidb.org.za/download/99/practice- notes/6106/practice-note-4-procuring-best- value-in-contruction-works.pdf
29	Procurement Documentation (cidb)	https://www.cidb.org.za/resource- centre/downloads-2/#47-100-wpfd-procurement- documents-templates-and-guidelines
30	Procurement Toolbox (cidb documentation)	https://www.cidb.org.za/resource- centre/downloads-2/#47-100-wpfd-procurement- documents-templates-and-guidelines
31	Professional Services Consultant Work Performance Evaluation – Florida / July 2019	https://pdl.fdot.gov/api/procedures/downloadPro cedure/375-030-007 f
32	Promotion of Administrative Justice Act (3 of 2000)	https://www.gov.za/sites/default/files/gcis_docu ment/201409/a3-000.pdf
33	Promotion of Equality & Prevention of Unfair Discrimination Act (4 of 2000)	https://www.gov.za/sites/default/files/gcis_docu ment/201409/a4-001.pdf
34	Public Finance Management Act (1 of 1999)	https://www.gov.za/sites/default/files/gcis_docu ment/201409/a1-99.pdf
35	Qualification-based selection promotes excellence and saves millions – ACEC New York	https://acecny.org/page/qbs
36	An Analysis of QBS in the Procurement of Engineering Services	https://program.acec.org/qbs-resources-portal
37	Qualifications-Based Selection (QBS) and its Importance to Engineering and the Public (National Society for Professional Engineers – USA)	https://www.nspe.org/resources/issues-and- advocacy/action-issues/qualifications-based- selection-engineering-services
38	Schedule of Disbursements (DPWI)	https://www.publicworks.gov.za/PDFs/consultant s docs/2022/RATES 102 FOR REIMBURSAB LE EXPENSES as from 01March2022.pdf
39	Standard for Uniformity (cidb)	https://www.cidb.org.za/resource- centre/downloads-2/#47-100-wpfd-procurement- documents-templates-and-guidelines
40	Consultants – Hourly fee rates (DPSA)	https://www.dpsa.gov.za/policy- updates/nlrrm/consultants_hourly_fee_rates/
41	YES to QBS – Association of Consulting Engineering Companies - Canada	https://www.acec.ca/advocacy/yes2qbs.html
42	Model Client- Consult Australia	https://www.consultaustralia.com.au/home/advo cacy/procurement
43	American Public Works Association (APWA Red Book on Qualifications-Based Selection Guidelines available on APWA website)	https://www.apwa.net/Store/detail.aspx?id=PB.A SEL
44	Cidb Practice Note 15: Framework Agreements	https://www.cidb.org.za/download/99/practice- notes/6116/practice-note-15-framework- agreements.pdf
45	National Treasury Supply Chain Management Practice Note 3 from 2003 as modified 2015	https://www.treasury.gov.za/legislation/pfma/pra ctice%20notes/scm/SCM- PracNote%203%2003.pdf

46	National Treasury Supply Chain Management Practice Note from 2003 as modified 2015	http://ocpo.treasury.gov.za/Resource_Centre/Le gislation/Instuction%20Note%2015%20Sep%20 2010.pdf
47	MFMA Circular 106: Local Government Framework For Infrastructure Delivery And Procurement Management	http://mfma.treasury.gov.za/Circulars/Document s/Forms/AllItems.aspx?RootFolder=/Circulars/D ocuments/MFMA%20Circular%20106
48	National Treasury Instruction 03 of 2019/2020: Framework for Infrastructure and Delivery and Procurement Management	http://ocpo.treasury.gov.za/Resource_Centre/Le gislation/National%20Treasury%20Instruction% 20note%203%20of%202019- 2020%20Framework%20for%20Infrastructure% 20Delivery%20and%20Procurement%20Manag ement.pdf

APPENDIX E: CONSULTING ENGINEER PERFORMANCE SCORECARD Table E-1: Consulting Engineer Performance Scorecard

Performance Rating Scale							
2	2 3 4 5						
Improvement required	Satisfied	Above Average	Excellent				
ing - Criteria for Evaluation	on						
Client extremely unhappy	; not prepared	d to use firm again	unless vast				
improvement.							
Client not happy & dissatisfied, but would use firm again, provided key							
issues addressed.							
Client satisfied he has received value for money; would use the firm again.							
Client received more than contracted value; firm went beyond brief. Would							
re-use them.							
Client highly impressed; firm went the extra mile, adding significant value.							
Would definitely prefer to	use the firm a	again.					
	Improvement required ing - Criteria for Evaluation Client extremely unhappy improvement. Client not happy & dissating issues addressed. Client satisfied he has reconnected with the satisfied he has reconnected withe	Q 3 Improvement required Satisfied ing - Criteria for Evaluation Client extremely unhappy; not prepared improvement. Client not happy & dissatisfied, but wool issues addressed. Client satisfied he has received value f Client received more than contracted v re-use them. Client highly impressed; firm went the e Would definitely prefer to use the firm a	Q 3 4 Improvement required Satisfied Above Average ing - Criteria for Evaluation Client extremely unhappy; not prepared to use firm again improvement. Client not happy & dissatisfied, but would use firm again, issues addressed. Client satisfied he has received value for money; would use Client received more than contracted value; firm went bey re-use them. Client highly impressed; firm went the extra mile, adding s Would definitely prefer to use the firm again.				

Notes: - An overall score of 3 is considered satisfactory performance. - The maximum score attainable is 5.

ltem	Description (Qualitative Criteria)	Score
1	Quality of Design	
	1.1 Creativity / Innovation and Appropriateness	
	1.2 Understanding Client & Legal Requirements	
	1.3 Documentation and Drawings	
	1.4 Environmental Issues / sustainability.	
	1.5 Health and Safety Issues	
	1.6 Life Cycle Costs	
2	Adherence to Time Constraints	
	2.1 Completion of Work Stages	
	2.2 Response to Queries	
3	Recognition of Cost	
	3.1 In Designs	
	3.2 Protecting Client Interests	
	3.3 Accurate Costs and Forecasts	
	3.4 Scope control	
4	Project Administration	
	4.1 Record Keeping	
	4.2 Legal and Financial	
	4.3 Programme	
	4.4 Minutes and Reporting	
	4.5 Handling Variation Orders and Claims	
5	Communication and Interfaces	
	5.1 Jurisdictions / Stakeholder Consultations	-
	5.2 Client, other Consultants and Contractors	
	5.3 Managing investigations, monitoring, and testing	
6	Construction and Post Construction	
	6.1 Monitoring during construction	
	6.2 Documentation and 'As-Built Drawings'	
	6.3 Oversight during maintenance period	
	6.4 Contract Administration	
7	General	
	7.1 Statt competency	
	7.2 Head Office Support	
	7.3 Discipline A	
Total	Score	
Final	Rating: [Average Score = Total Score/number of line items scored]	

NOTE	Each Category E to A has eight aspects. Those aspects appropriate to the project should be used to evaluate each of the Activities in each Project Stage on Table 8-1 and 8-2. The Score for A, B, C, D, or E, of 5/4/3/2/1 is then assigned to each activity on the above-mentioned tables.	Score
E. Very Poor	Did not identify project objectives, omitted to deal with all aspects of the brief	1
	Key staff very inexperienced, unable to deal with all aspects of the	
	Key staff insufficiently skilled and not competent to undertake the work.	
	No knowledge of client policies/procedures, minimum support, and communication.	
	No Quality Management System evident, adherence to Quality inadequate.	
	No proper organisational, logistic & support resources deployed to the project.	
	No knowledge & experience in management of similar type projects.	
	Failed to meet all critical deadlines & budgets, minimal senior staff involved.	
In Summary:	Client extremely unhappy; not prepared to use firm again unless	
	vast improvement.	
D. Improvement	Did not satisfy project objectives, critical aspects of brief not dealt with	2
required	properly. Key staff lacked sufficient competence, did not apply their skills	
	correctly.	
	Key staff lacked adequate experience to deal with key aspects of the project.	
	Limited knowledge of client policies/procedures - insufficient support, poor communication.	
	Lack of an adequate QMS or insufficient adherence to Quality to meet client requirements.	
	Not enough organisational, logistic & support resources deployed for project.	
	Limited knowledge and experience in management of similar type	
	Failed to meet some deadlines, some budgets exceeded, insufficient senior staff involved	
In Summary:	Client not happy & dissatisfied, but would use firm again, provided	
	key issues addressed.	
		0
C. Satisfactory	with.	3
	Key staff reasonably well qualified & competent to apply skills to the project.	
	Key staff showed reasonable experience in comparable projects, acceptable for this project.	
	Reasonable knowledge of client's policies & work procedures, support & communication evident.	
	Use of an in-house QMS, able to meet most client requirements.	
	Indication of sufficient organisational, logistic & support resources available and deployed.	
	Reasonable knowledge & experience in management of similar type	
	projects.	

	Most critical deadlines met, budget overruns controlled/corrected, adequate senior staff involved	
In Summary:	Client satisfied he has received value for money: would use the	
in outline y.	firm again.	
NOTE	Each Category E to A has eight aspects. Those aspects appropriate to the project should be used to evaluate each of the Activities in each Project Stage on Table 8-1 and 8-2. The Score for A, B, C, D, or E, of 5/4/3/2/1 is then assigned to each activity on the above-mentioned tables.	Score
B. Above Average	Approach tailored to meet project objectives, with flexibility to meet changes.	4
	All key staff qualified & competent to apply skills to project scope.	
	Key staff showed adequate experience in comparable projects, applied to this project.	
	Adequate knowledge of client's policies & work procedures, supported by good communication.	
	Consulting Engineers QMS meets the client's quality assurance requirements for the project.	
	Sufficient organisational, logistic & support resources convincingly used.	
	Adequate knowledge & experience in management of similar type projects, competently applied.	
	All deadlines met and budgets held, clear evidence of senior staff involvement.	
In Summary:	Client received more than contracted value; firm went beyond brief. Would re-use them.	
A. Excellent	Important issues handled innovatively & efficiently, in a state-of-the-art manner.	5
	Key staff exceptionally well qualified & competently applied their skills to the project.	
	Key staff showed outstanding experience in comparable projects, to benefit of this project.	
	Outstanding knowledge of client's policies & work procedures, excellent support & communication	
	Consulting Engineer's QMS internationally certified & meets all client's QA requirements.	
	Extensive organisational, logistic & support resources convincingly used.	
	Extensive knowledge & experience in management of similar type projects, expertly applied.	
	Deadlines and budgets met with significant time/cost savings, strong involvement of senior staff.	
In Summary:	Client highly impressed; firm went the extra mile, adding significant value. Would definitely prefer to use the firm again.	

Procurement of Consulting Engineering Services

Part 2: Pro Forma/Template Request for Proposals (RFP) document for Consulting Engineering Services

March 2023



PREFACE

This Guide (Parts 1 and 2) reflects what is considered best practice today for Clients and Consulting Engineers in ensuring an optimal outcome to the contractual agreement between the parties. It incorporates the requirements of the National Treasury Framework for Infrastructure Development and Procurement Management (FIDPM) published under Instruction 03 of 2019/2020 and the Local Government Framework for Infrastructure Delivery and Procurement Management (LGFIDPM) published under MFMA Circular No. 106 of 01 October 2020.

Part 1 of the Guide provides suggestions to Clients in requesting services and advice to Consulting Engineers in framing their responses to these requests. This has been done in order to better inform the procurement process.

Wherever possible the terminology used in the Guide has been aligned to reflect the terminology and methodology contained in the FIDPM, as well as the Engineering Council of South Africa (ECSA) documentation.

Part 2 of the Guide (this document) is a pro-forma/template of a typical procurement document which may be used by clients in the public sector to assist with the preparation of a tender document for the procurement of consulting engineering services.

The pro-forma/template document may also be obtained free of charge in electronic format as either a pdf or MS word document upon request to <u>general@cesa.co.za</u>

This pro forma/template is intended to assist clients to produce a typical document for the procurement of consulting engineering services. It is modelled on the Cidb Standard for Uniformity in Construction Procurement (SFU), August 2019 and SANS 10845, and adapted for the procurement of consulting engineering services because the current 2019 version of the SFU does not make provision for professional services. The template uses the CESA Model Professional Services Agreement (MPSA) as the standard form of contract, but there is no reason why another a recognised standard form of professional services agreement should not be used.

This template is intended for use on small-to-medium sized projects which are not complex in nature. It should only be used where a single consulting engineering firm is to be appointed to undertake engineering work. The process of producing a procurement document requires specific expertise and appropriate experience, and procurement documents must be worded and structured in accordance with all applicable procurement legislation and regulations and must comply with the client's supply chain management policies. It is essential that anyone using this template document should do so with care to ensure that the final product complies with all relevant legislation and the client's supply chain management policy. CESA make no presentation or warranties, either expressed or implied, as to the completeness or accuracy of the contents.

Note

The template includes guidance/notes to the compiler of the actual procurement document (RFP) in the form of:

- 1. "Compiler notes" and other guidance notes
- 2. These notes are shaded in grey and, depending on the nature of the guidance given, may be in italics.
- 3. The notes must be deleted as the procurement document is drafted.

Insert Client's Logo Or Delete Box

(Compiler note: insert client name and department, eg: HERITAGE MUNICIPALITY: WASTEWATER AND ELECTRICAL DEPARTMENT)

REQUEST FOR PROPOSALS

RFP NO.: (Compiler note: insert bid or contract number eg DEW 2022/123)

FOR: Consulting Engineering Services

CONTRACT DESCRIPTION: (Compiler note: provide a brief description of the project and services, eg Provision of consulting engineering services for new 18 MI/day wastewater treatment works and new 66 kV electrical substation for the Heritage Municipality.)

ISSUED BY

Insert client name and address

DATE OF ISSUE

Insert date of issue of tender

TENDERER'S INFORMATION
Name
Telephone
Email
Contact person
Cell No

THE TENDER

T 1.1: TENDER NOTICE AND INVITATION TO TENDER

- 1. Consulting engineers are invited to submit tenders for the design, contract administration and site monitoring for the proposed (*Compiler note: describe the project, eg: new Wastewater Treatment Works and new Substation for Heritage Municipality.*
- The Client is (Compiler note: insert client name and department, if applicable eg the HERITAGE MUNICIPALITY represented by: THE DIRECTOR: WASTEWATER AND ELECTRICAL ENGINEERING DEPARTMENT
- 3. The tender documents may be obtained as follows:

(Compiler note: delete whichever of the following do NOT apply)

3.1 Downloaded in electronic format from the National Treasury eTender website or the *(Compiler note: provide the applicable website address, eg Heritage Municipality)* website. The entire document should be printed and bound by the tenderer.

3.2 A single hard copy of the tender documents may be collected, during normal working hours after 09:00 on (Compiler note: state the date after when tender documents will be available for collection, for example "after 31 February 2023")

3.3 A non-refundable tender deposit of R...... (Compiler note: insert amount of tender deposit, if any, suggested not to exceed R100.00) payable in cash is required on collection of a hard copy tender document.

- 3.4 The physical address for the collection of hard copy tender documents is: (Compiler note: insert address where hard copy tender documents may be collected, if applicable, and describe accurately, for example : Third Floor, Heritage Municipal Building, Clyde Street, Heritage)
- 4. A tenderers clarification meeting will take place. Attendance by the tenderer at the meeting is /is not (*Compiler note: amend as applicable*) compulsory.

4.1 The date and time for the clarification meeting is: (*insert date*), at *insert time*.

- - Client Representative Name:
 - Telephone:
 - Email:

Any such queries received by email, including queries raised at the clarification meeting, will be consolidated, and emailed to all the Tenderers at the addresses provided by the tenderers at the clarification meeting.

- 6. Tenders must be delivered as stated in the Tender Data.
- 7. The closing date and time for the delivery and submission of tenders is as follows:

7.1 Date: (Compiler note: insert date, for example Tuesday, 30 February 2031)

7.2 Time: (Compiler note: insert time, for example 12:00)

7.3 Tenders received after the closing time and date will not be considered.

8. The complete tender document as issued by the Client must be returned with the tender including all Parts as listed in the Table of Contents. The Form of Tender must be completed and signed, and all Schedules must be completed by the Tenderer as listed in Part T2.1, Returnable Documents. Failure to do so may invalidate the tender. Tenders submitted in electronic format of any nature will not be accepted unless specifically allowed in the Tender Data.

T 1.2: TENDERING PROCEDURES

T 1.2.1: CONDITIONS OF TENDER

The Conditions of Tender are the Standard Conditions of Tender as contained in Annex C of the Construction Industry Development Board of SA (Cidb) Standard for Uniformity (SFU) in Engineering and Construction Works Contracts, August 2019. Refer <u>https://www.cidb.org.za/resource-centre/downloads-2/#47-100-wpfd-procurement-documents-templates-and-guidelines</u>)

The Tender Data which follow, and any other additional requirements set down in the tender schedules included in the returnable documents as described in this document, are in amplification of the Standard Conditions of Tender and form part of and must be read in conjunction with the Standard Conditions of Tender.

The Tender Data set down in T 1.2.2 below shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

T 1.2.2 TENDER DATA

The following Tender Data apply to this tender and each item of Tender Data given below is crossreferenced to the clause in the SFU (August 2019), Annex C, Standard Conditions of Tender to which it mainly applies.

In	this	document	the word	"employ	ver" (a	nd all its	s derivatives) is re	placed by	v the word	"client".
		accument		ompio.	yo: (a		s aonvauvoo	, 10 10	placea b	y 1110 1101 a	onorit .

		DESCRIPTION	
a	SFU C 1.2	Documents: The documents issued for the purpose of the tender are the full set of documents as listed and described in the Table of Contents at the front of this tender document.	
b	SFU C 1.4	Details of client and of In this document, the te "client's representative" time to time to represent the contract for consult representative will norm employee of the client for and to receive inform	Client's representative: Form "employer's agent" is replaced by the term and shall mean the natural person appointed from the client in all matters related to this tender and ing engineering services. The client's nally, but not necessarily, be a permanent and will have complete authority to give instructions mation on behalf of the client.
		The client is	(Compiler note: insert client name and department, eg Heritage Municipality, represented by: Director: Wastewater and Electrical Engineering)
		The client's representative is	(Compiler note: insert name of client's representative who must be the person with authority to make decisions, issue instructions and receive information)
			Name:
			Position:
			Phone:
			Email:

С	SFU C 1.6	Procurement proce Tenders will be eval followed by a compe 1.6.1 of the SFU.	edures: uated on the basis of eligibility and functionality etitive selection procedure as described in Clause C		
d	SFU C 2.1	Eligibility A tenderer will not b	e eligible to submit a tender if:		
		(a) The tenderer sub principals who are u procurement proces	omitting the tender is under restrictions or has nder restriction to participate in the client's s due to corrupt or fraudulent practices;		
		(b) The tenderer doe contract;	es not have the legal capacity to enter into the		
		(c) The tenderer doe client's current SCM	es not comply with the legal requirements stated in the Policy;		
		(d) The tenderer car respect to duties, ta: applicable legislation	nnot provide proof that he/she is in good standing with xes, levies, and contributions required in terms of n.		
		 (e) In the event of a The tendered The tendered Attendance Returnable of representation 	 (e) In the event of a compulsory clarification meeting: The tenderer fails to attend the compulsory clarification meeting The tenderer fails to have "Form T2.2.1.1: Certificate of Attendance at Compulsory Clarification Meeting" in Part T2.2 - Returnable Schedules and Forms signed by the client's representative. 		
		(f) At the time of clos National Treasury C In the case of a Join each party in the Joi	sing of tenders, the tenderer is not registered on the entral Supplier Database (CSD) as a service provider. It Venture, this requirement will apply individually to int Venture.		
е	SFU C 2.2	Cost of tender doc	uments:		
		The tender documentation may be downloaded in electronic format from the National Treasury eTender website or the Heritage Municipality website. The entire document should be printed and bound by the tenderer. (Compiler note: amend the wording if an alternative method of issuing tender documents is applicable)			
f	SFU C 2.7	Clarification meeting	ng		
		(i) A clarification meeting will take place.	YES/NO (Compiler note: delete as applicable)		
		(ii) Attendance by the tenderer at the meeting is compulsory	YES/NO (Compiler note: delete as applicable)		
		(iii) The date and (<i>example</i>) time for the Date: Wednesday, 31 February 2023 meeting is: Time: 09:00			
		(iv) The venue for the meeting is:	(<i>example)</i> Heritage Water treatment Works Hill Street Heritage		

			GPS Coordinates: 35°5'31.205"E ; 36°38'40.780"S)	
g	SFU C 2.9	Insurance		
		The requirements for Specific Contract Date	or insurance are described in Clause C 1.2.2.2, ata. Insurance will not be provided by the client.	
h	SFU C 2.12	Alternative offers		
		Alternative offers wi Part C 1.2.2.1 of the	Il not be considered unless specifically described in Specific Contract Data in this document.	
i	SFU C 2.13	Submitting a tender offer		
		Tenders to be subm SFU C 2.13.	itted in accordance with the requirements stated in the	
		Tenders may only b Electronic, telephon (Compiler Note: del	e submitted as a single, hand-delivered hard copy and ic, or posted tender offers will/will not be accepted. ete as applicable)	
j	SFU C 2.15	Closing time		
		The tender closing of	date, time, and delivery address are as follows:	
		(Compiler note: inse	ert the applicable details below)	
		Closing Date:	(example Friday, 1 January 2023)	
		Closing time:	(example 12:00)	
		Venue (Delivery address):	(Compiler note: the delivery address must be described accurately, for example:	
			Tender box, First Floor Foyer, Heritage Municipal Offices, 3 Tide Street, City Central.	
			GPS Coordinates: 35°5'31.205"E ; 36°38'40.780"S)	
		Tender package identification:	(Compiler note: describe how the tender package must be identified by the tenderer, example: Bid/contract number, Bid/contract description, Closing Date and Time)	
k	SFU C 2.16	Tender offer validi	ty	
		The tender offer validity period is 90 days (Compiler note: the tender validity period must be kept as short as possible, bearing in mind the client's SCM procedures. Tenderers cannot be expected to hold prices good for long periods especially during times of uncertainty)		
I	SFU C 2.23	Certificates		
		A listing of any certi tender is provided ir document.	ficates or other documents to be submitted with the Part T 2.1 List of Returnable Schedules of this	

m	SFU C 3.4	Opening of tender	submissions
		Tenders will be ope tenders.	ned in public immediately after the closing time for
n	SFU C 3.11	Evaluation of tend	er offers
		(Compiler Note: The and should be mod	e following are indicative functionality requirements ified to meet the requirements of the project)
		Tenders will be eva	luated for Functionality as follows:
		Company Experier	nce – 25 points
		0	Has not provided proof of having successfully
		_	completed a similar project
		5	Has provided proof of having completed a similar
		10	Provided proof of baying completed a similar project
		Minimum	and references were positive
		requirement	
		15	Provided proof of having completed 2 similar projects
			and references were positive
		25	Provided proof it having completed 4 or more similar projects and the references were positive
		Experience of Key	Staff – 50 points
		Declaration of	
		Project Lead	
		0	Three (3) years of experience or more on projects relating to the design and construction monitoring of similar projects
			Civil/Mechanical/Electrical)
		5	Five (5) years of experience or more on projects
			relating to the design and construction monitoring of
			similar projects
			AND BTech Degree /NHD in Engineering
			(Civil/Mechanical/Electrical)
		10	Five (5) years of experience or more on projects
		Minimum requirement	relating to the design and construction monitoring of similar projects
			AND BTech Degree /NHD in Engineering
			(Civil/Mechanical/Electrical)
			AND
		45	Registration with ECSA as PR Tech Eng
		15	Ten (10) years of experience or more on projects
			similar projects
			BSc Degree/BTech Degree/BEng Degree/NHD in
			Engineering (Civil/Mechanical/Electrical)
			AND
		05	Registration with ECSA as PR Eng/PR Tech Eng
		25	Fifteen (15) years of experience or more on projects
			similar projects
			AND
			BSc Degree/BTech Degree/BEng Degree/NHD in
			Engineering (Civil/Mechanical/Electrical)
			ANU Registration with ECSA as PR Eng/PR Tech Eng
			Registration with LOOK as I'V LIG/FIV LEDI LIG

0	Two (2) years of experience or more on projects
•	relating to civil/mechanical/electrical design of simi
	projects
	AND
	BTech Degree/NHD in Civil/Mechanical/Electrical
	Engineering
5	Five (5) years of experience or more on projects
	relating to civil/mechanical/electrical design of simi
	projects
	AND
	BTech Degree/NHD in Civil/Mechanical/Electrical
	Engineering
10	Five (5) years of experience or more on projects
Minimum	relating to civil/mechanical/electrical design of simi
requirement	projects
	AND Registration with ECCA on DD Tech End
15	Tegistration with ECSA as PK Tech Eng
CI	relating to civil/mochanical/clastrical design of circle
	BSc Degree/BTech Degree/ BEng Degree/NHD in
	Civil/Mechanical/Electrical Engineering
	AND
	Registration with ECSA as PR Eng/PR Tech Eng
25	Fifteen (15) years of experience or more on project
	relating to civil/mechanical/electrical design of simil
	projects
	AND
	BSc Degree/BTech Degree/ BEng Degree/NHD in
	Civil/Mechanical/Electrical Engineering
	AND
	Registration with ECSA as PR Eng/PR Tech Eng
Programme – 5	points
0	Programme has no links between tasks
1	Programme has links between tasks but does not
-	indicate critical path
2	Programme is logical, has links between tasks and
Minimum	includes a critical path
requirement	
3	Programme has sufficient detail, is logical and
	includes a critical path
5	Programme has sufficient detail, resources, is logic
	and includes a critical path
Approach and I	Methodology – 20 points
5	The technical approach and/or methodology is
	poor/is unlikely to satisfy project objectives or
	requirements. The tenderer has misunderstood
	certain aspects of the scope of work and does not
	deal with the critical aspects of the project.
10	The approach is generic and not tailored to addres
	the specific project objectives and methodology. The
	approach does not adequately deal with the critical
	characteristics of the project. The quality plan
	manner in which risk is to be managed etc. is too
---	--
15 Minimum requirement	The approach is specifically tailored to address the specific project objectives and methodology and is sufficiently flexible to accommodate changes that may occur during execution. The quality plan and approach to managing risk etc. is specifically tailored to the critical characteristics of the project.
20	Besides meeting the "good" rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has outstanding knowledge of state-of-the-art approaches. The approach paper details ways to improve the project outcomes and the quality of the outputs.
Tenderers scoring I evaluated further. A required for the tend	ess than the minimum in any category will not be In overall aggregate score of 65 points is the minimum der to be evaluated further
Tenders that meet t of financial offer (pr	the Functionality criteria will then be evaluated in terms ice) and preference (SFU).
ADJUDICATION U	SING A POINTS SYSTEM
The Tenderer obtai the contract.	ning the highest number of total points will be awarded
Preference points s comparative basis t unconditional disco	hall be calculated after prices have been brought to a aking into account all factors of non-firm prices and all unts.
Points scored must	be rounded off to the nearest 2 decimal places.
In the event that two successful tender m preference points fo	o or more tenders have scored equal total points, the nust be the one scoring the highest number of or B-BBEE.
However, when fun more tenders have for B-BBEE, the suc score for functional	ctionality is part of the evaluation process and two or scored equal points including equal preference points ccessful tender must be the one scoring the highest ity.
Should two or more decided by the drav	tenders be equal in all respects, the award shall be ving of lots.
POINTS AWARDE	D FOR PRICE
THE 80/20 OR 90/1	0 PREFERENCE POINT SYSTEMS
A maximum of 80 o	r 90 points is allocated for price on the following basis:
80/20	or 90/10
$Ps = 80 \left(1 - \frac{Pt - r}{Pr} \right)$	$\frac{P\min}{\min}$ $Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$
Where	
Ps = Points sc	ored for price of tender under consideration

		Pt= Price of tender under considerationPmin=Price of lowest acceptable tender			
		POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a Tenderer for attaining the B-BBEE status level of contribution in accordance with the table below:			
		B-BBEE Status Level	Number of points	Number of points	
		of Contributor	(90/10 system)	(80/20 system)	
		1	10	20	
		2	9	18	
		3	5	14	
		5		8	
		6		6	
		7	2	4	
		8	1	2	
		Non-compliant	0	0	
		contributor	0	0	
		 Risk analysis and acceptance of tender offer After the tenderer with the highest number of tender evaluation points (highest ranked tenderer) has been identified, but before a tender is accepted, the client will undertake a risk analysis of the tenderer and tender as contemplated in SFU C 3.13. The purpose of the risk analysis will be to ensure that acceptance of the tender does not present any risk and only if: (i) (i) the financial offer is reasonable and realistically priced. (Compiler note: Client to determine bounds for realistic pricing referring to the ECSA fee scale where relevant) (ii) the tenderer is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement; (iii) the tenderer is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her business activities or is subject to legal proceedings in respect of any of the foregoing; (v) the tenderer is able, in the opinion of the employer, to perform the contract free of conflicts of interest; and (vii) The tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer. 			
р	SFU C 3.16	Registration of the awar	d		

		The tender award will be published on the National Treasury eTender platform
q	SFU C 3.17	Provide copies of the contract
		The number of paper copies of the signed contract to be provided by the client to the appointed consulting engineer is one.

T 2: RETURNABLE DOCUMENTS

(Compiler note: This part of the tender document includes all the documents, schedules, forms, etc that the client requires the tenderer to complete and submit with the tender. A typical list of suggested Returnable Schedules is provided in Part T2.1 below and some suggested pro forma sample documents are provided in Part T2.2 which follows. The list and pro forma documents are provided for guidance and information only and it is essential that clients must develop their own returnable document schedules, forms, etc to suit their particular needs and circumstances.

Be aware that the preparation of a tender by a tenderer is an onerous, time-consuming, and costly process and for this reason clients should take care not to call for unnecessary returnable documents, particularly in the case of smaller and routine projects.)

T 2.1 LIST OF RETURNABLE DOCUMENTS, SCHEDULES, ETC

The Tender Document must be completed and submitted as a whole document with all supporting documents attached as a separate volume and as described below.

The tenderer must complete, sign, and submit all parts of this tender document as applicable, including all Schedules and Forms as listed below. The returnable documents, schedules etc which are not bound in as part of this tender document must be bound together as a separate volume and submitted with the tender. The separate document must have a List of Contents set out as described below and bound in as the front page of the Returnable Documents. The List of Contents shall include all additional documents which the tenderer considers part of the tender. Failure to do so may result in the tender being declared unresponsive and in it being rejected.

Part No.	Description	Tenderer to tick to		
(Compiler note: insert below a list of all the returnable documents, schedules etc that tenderers are required to submit with their tender in terms of the client's SCM policies. The tenderer must bind all the returnable documents together and submit them as a separate volume with the tender. The list below is the minimum considered necessary in the case of consulting engineering services, and other documents should be added, deleted, or amended as deemed necessary.				
T2.2	Confirmation of Attendance at Compulsory Tenderers' Clarification Meeting			
T2.3	Record of Addenda to Tender Documents			
T2.4	Schedule of Amendments and Qualifications by the Tenderer			
(Compiler note: It is recommended that each returnable document, schedule, or form, be numbered as shown below, but if it is decided not to number the documents then delete the numbers which follow)				
T2.5	SBD 2 or MDB 2 – Attach Valid Tax Clearance Certificate or PIN number			
T2.6	SBD 4 or MDB 4 – Declaration of Interest			
T2.7	SBD 5 or MDB 5 – Declaration for Procurement above R10m (All applicable Taxes included) (if applicable)			
T2.8	SBD 6.1 or MDB 6.1 - Preference Points Claim form			
T2.9	SBD 8 or MDB 8 – Declaration of Bidders Past SCM Practices			
T2.10	SBD 9 or MDB 9 – Certificate of Independent Bid Determination			
T2.11	Attach Proof of Authority to Sign Tender			

T2.12	Attach Authority of Signatory / Board of Resolution if JV	
T2.13	Attach Proof of Professional Indemnity and Public Liability Insurance	
T2.14	Attach Company Profile	
T2.15	Valid Letter of Good Standing in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 (COID)	
T2.156	Attach Company Registration / Directors ID's / Shareholder Certificates / Joint Venture / Consortium Agreements	
T2.17	Attach 3 years Financial Statements	
T2.18	Attach Full Central Supplier Database (CSD) Registration Report	
	Returnable Schedules for Functionality and Preference	
T2.19	Attach Valid Bank Rating Certificate	
T2.20	Attach Key Staff CV's / Qualifications / Professional Registrations	
T2.21	Attach Relevant Experience in Similar Projects	
T2.22	Attach Project Reference Letters and/or Completion Certificates	
T2.23	Attach Approach and Methodology description	
T2.24	Attach Programme Indicating Critical Path and Resources	
T2.25	Attach Valid B-BBEE Certificate from a SANAS accredited B- BBEE certification agency or, if applicable, Sworn Affidavit for a B-BBEE Exempted Micro Enterprise.	
	Other Parts to be completed as part of the tender	
C1.1	Form of Offer and Acceptance	
C1.2.2.2	Data provided by the Tenderer	
C2	Pricing Data and Bill of Quantities	
	Other (Compiler note: add any other Parts to be completed as part of the tender)	

TENDERER'S ANNEXURES:

The tenderer shall list below any annexures which are appended by him to this tender. Such annexures shall have no meaning or effect unless they are listed and described. Examples of Tenderer's Annexures are a Covering Letter, Alternative Offer/Tender (which must be fully detailed), information in amplification of the tender, etc.

T 2.2 CONFIRMATION OF ATTENDANCE AT COMPULSORY TENDERERS' CLARIFICATION MEETING

It is confirmed that the following tenderer attended the compulsory tenderers' clarification meeting as described below:

TENDERER'S NAME:

TENDERER'S EMAIL ADDRESS:

NAME OF TENDERER'S
REPRESENTATIVE AT MEETING:

SIGNATURE

RFP NO.: (Compiler note: insert bid or contract number eg DEW 2022/123)

CONTRACT NAME: (Compiler note: insert the name of the project, eg: Provision of consulting engineering services for new 18 MI/day wastewater treatment works and new 66 kV electrical substation for the Heritage Municipality.)

TIME AND DATE OF MEETING: (Compiler note: insert the time and date of the tenderers' clarification meeting)

Attendance at the tenderers' clarification meeting is confirmed by the following person acting as the Client's representative at the meeting:

(Compiler note: leave blank and the client's representative to insert name and signature at the meeting)

NAME OF CLIENT'S REPRESENTATIVE:

SIGNATURE:

DATE:

T 2.3 RECORD OF ADDENDA TO TENDER DOCUMENTS

The Tenderer must list below all communications and other documents which may have been issued to him/her during the tender period. The actual documents must be signed by the Tenderer and either attached to this page or attached as an Addendum to the tender document. Failure to comply with the above may render the tender unresponsive.

We confirm that the following communications received from the Client before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:				
Item	Date	Title or Details		

Attach additional pages if more space is required.

Signature	Date
Name	Position
Tenderer	

T 2.4 PROPOSED AMENDMENTS AND QUALIFICATIONS

The Tenderer is required to give full details of any departure from the provisions of this tender and contract document. If there are no departures, the Tenderer must state NIL on this page and sign it. The Tender shall then be held to comply in all respect with the Specification.

Should there be insufficient space, the Tenderer may add separate sheets arranged in the same manner as below and bound in with the Volume of Returnable Documents described in Part T 2.1. referenced as Part 2.3. Mere reference to a separate covering letter will not be regarded as compliance with this requirement unless the letter is bound into the Volume of Returnable Documents and the proposed amendments and qualifications are set out in the format below.

PAGE	CLAUSE OR ITEM NO.	PROPOSED AMENDMENT

Signature	Date	
Name	Position	
Tenderer		

THE CONTRACT

C1 AGREEMENTS AND CONTRACT DATA

C 1.1 FORM OF OFFER AND ACCEPTANCE

OFFER

The **client**, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of consulting engineering services as follows:

(Compiler note: briefly describe the project works and the consulting engineering services required:

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the consulting engineer under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

THE OFFERED TOTAL TENDER PRICE FOR THE SERVICES, INCLUSIVE OF VALUE ADDED TAX IS:

(Rands, in words)

(in figures)

R

TIME FOR COMPLETION OF THE SERVICES (REFER PART C1.2.2.1 (h) and PART C.3.3)

The date for commencement of the services will be the date of acceptance of this offer, or as stated in Part C.1.2.2.1 (h).

Stage 1 Inception (weeks) Stage 2: Concept and Viability (weeks) Stage 3: Design Development (weeks) Stage 4: Documentation and Procurement (weeks) Stage 5: Contract Administration and Inspection (weeks)	The time for completion of the services will be stated by the client in Part C.3.3 of this Agreement. If the time is not stated in Part C.3.3 the tenderer is to state the time required for completion of the services below <i>(Compiler Note: Add to or delete ECSA stages as applicable)</i>	
Stage 2: Concept and Viability (weeks) Stage 3: Design Development (weeks) Stage 4: Documentation and Procurement (weeks) Stage 5: Contract Administration and Inspection (weeks)	Stage 1 Inception (weeks)	
Stage 3: Design Development (weeks) Stage 4: Documentation and Procurement (weeks) Stage 5: Contract Administration and Inspection (weeks)	Stage 2: Concept and Viability (weeks)	
Stage 4: Documentation and Procurement (weeks) Stage 5: Contract Administration and Inspection (weeks)	Stage 3: Design Development (weeks)	
Stage 5: Contract Administration and Inspection (weeks)	Stage 4: Documentation and Procurement (weeks)	
	Stage 5: Contract Administration and Inspection (weeks)	

PREFERENCES CLAIMED

B-BBEE Status Level of Contribution claimed by tenderer	

This offer may be accepted by the client by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the consulting engineer in the conditions of contract identified in the contract data.

For the Tenderer:

Signature	
Name of signatory	
Capacity	

Tendering Organisation:

Name	
Address	

Witness:

Signature	
Name	
Date	

ACCEPTANCE

By signing this part of this form of offer and acceptance, the client identified below accepts the tenderer's offer. In consideration thereof, the client shall pay the consulting engineer the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form an agreement between the client and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

- Part C.1 to C.3 Agreements and contract data, (which includes this agreement)
- Part C.4 Pricing data
- Part C.5 Scope of Services and Scope of Work (Terms of reference)

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the returnable schedules as well as any changes to the terms of the offer agreed by the tenderer and the client during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this form of offer and acceptance. No amendments to or deviations from said documents are valid unless contained in this schedule.

The Tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the Client's Representative (whose details are given in the Specific Contract Data) to arrange the delivery of any documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the Tenderer receives written confirmation from the Client that the tender is accepted. Unless the tenderer (now consulting engineer), within five (5) working days of the date of such receipt, notifies the client in writing of any reason why he/she cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

For the Client:

Signature of authorised client representative	
Name of signatory	
Capacity of signatory	

Client organisation

Name	
Address	

Witness

Signature	
Name	
Date	

SCHEDULE OF DEVIATIONS

NOTES:

- a) The extent of deviations from the tender documents agreed by the tenderer and the client during this process of offer and acceptance is limited to those permitted in terms of the Conditions of Tender.
- b) A Tenderer's covering letter shall not be included in the final contract document unless it was bound into the original submittal from the tenderer as part of T2.3. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.
- c) Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the parties becomes an obligation of the contract shall also be recorded here.

d) Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1	Subject	
	Details	

2	Subject	
	Details	

3	Subject	
	Details	

4	Subject	
	Details	

5	Subject	
	Details	

Note: Additional items may be added in the same format and stapled to this page.

By the duly authorised representatives signing this agreement, the client and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the returnable schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the tenderer and the client during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the Tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.

C 1.2 CONTRACT DATA

C 1.2.1 FORM OF PROFESSIONAL SERVICES AGREEMENT

The conditions of agreement are the CESA Professional Services Agreement, May 2021, published by Consulting Engineers South Africa (CESA) (see <u>www.cesa.co.za</u>) (*Compiler note: amend if necessary depending on the standard form of professional services selected*)

The following contract specific data, referring to the CESA Professional Services Agreement, May 2021, *(amend if applicable)* are applicable to this professional services agreement and shall take precedence over the CESA Professional Services Agreement and shall govern.

C 1.2.2 SPECIFIC CONTRACT DATA

C 1.2.2.1 DATA PROVIDED BY THE CLIENT

(Compiler note: The following specific contract data is based on the specific data included in the CESA Model Professional Services Agreement, May 2021. If a different standard form of professional services agreement is selected, the specific contract data must be modified accordingly)

а	The Client is (insert Client name, eg the HERITAGE MUNICIPALITY) represented by: (Insert Client department, eg THE DIRECTOR: WASTEWATER AND ELECTRICAL ENGINEERING DEPARTMENT					
b	The client's designated representative with authority to give instructions and to receive information is:					
	(Compiler note: in representative in named must have related to the cor department)	(Compiler note: insert here the details of the person who will act as the client's representative in all matters related to the professional services contract. The person so named must have the authority to make decisions and issue instructions in all matters related to the contract and would normally be the Director, or person in charge of the client department)				
	Name					
	Telephone					
	Email					
С	The project is the	e provision of consulting engineering services for the:				
	(Compiler note: insert here the project name, eg: new Wastewater Treatment Works and new Substation for Heritage Municipality.					
d	Amendments					
	The following amendments to the CESA Professional Services Agreement standard Conditions of Agreement apply to this Agreement:					
	(Compiler note: Insert here any amendments to be made to the standard form of agreement referred to in C1.2.1 above, bearing in mind that such amendments should be restricted to an absolute minimum and only where considered essential)					

е	Special Conditions				
	The following special conditions apply to this Agreement:				
	(Compiler note: Insert here any special general conditions which may apply to the standard form of agreement referred to in C1.2.1 above. Some examples are:				
	 Client supply chain management policy requirements such as performance monitoring of service providers Targeted procurement goals Other 				
f	Scope of Services				
	The scope of the services to be provided by the consulting enginee agreement, is described in Part C.3 of this document.	er in terms of this			
i	Remuneration				
	The remuneration to be paid to the consulting engineer for providin in terms of this agreement and for reimbursement for all expenses performing the services is as described in Part C.2 of this docume	g the services required and costs incurred in nt			
j	Date for Commencement	(Compiler note: Insert the intended date for commencement of the services)			
k	Time for completion				
	The time for completion of the services will be stated by the client in Part C.3.3 of this Agreement. If the time is not stated in Part C.3.3 the tenderer is to include the time required for completion of the services in Part C.1.1 Form of Offer and Acceptance				
I	Subcontracting	(Compiler note: insert			
	The c lient is to describe any services or part thereof which the consulting engineer is required to subcontract in terms of Clause 7.3 of the CESA Professional Services Agreement Conditions of Agreement.	any services which the client requires the consulting engineer to subcontract)			
m	Subconsultants appointed by client	YES/NO (Compiler note: delete			
	The client accepts responsibility for any acts, omissions, and defaults of any subconsultant appointed as a result of an instruction by the client	as applicable)			
n	Duration of Liability	(Compiler note: It is			
	The duration of liability of the client and/or the consulting engineer in terms of Clause 6.3 of the CESA Professional Services Agreement Conditions of Agreement shall be as stated in Clause 6.3 or as stated opposite	duration of liability be in accordance with Clause 6.3, but state here if a different duration is to apply).			
0	Limit of Compensation	(Compiler note: It is			
	The limit of compensation payable by the consulting engineer to the client in terms of Clause 6.4 of the CESA Professional	maximum limit of compensation be in accordance with			

	Services Agreement Conditions of Agreement shall be as stated in clause 6.4 or as stated opposite	Clause 6.4, but state here if a different limit is to apply.)
р	Ownership of Data, Designs and Documents	
	In terms of Clause 7.4 of the CESA Professional Services Agreement Conditions of Agreement the ownership of and copyright in all documents prepared by the consulting engineer shall be as follows:	
	Retained by the consulting engineer (default as described in Clause 7.4 of the CESA Professional Services Agreement Conditions of Agreement)	YES/NO (Compiler note: delete as applicable)
	Ceded to the client upon making full payment for the services	YES/NO (Compiler note: delete as applicable)
q	Publicity and Publication	
	Clause 7.7 of the CESA Professional Services Agreement Conditions of Agreement applies unless otherwise specified opposite	

C 1.2.2.2 DATA PROVIDED BY THE TENDERER (CONSULTING ENGINEER)

(Compiler note : the information in this part of the agreement is to be completed by the tenderer as part of the tender submission)

а	The Consulting Engineer is:	
	Address:	
	Telephone: Email:	
b	The Consulting Engineer's designated representative with authority to rec and to give information is:	ceive instructions
	Name:	
	Address:	
	Telephone:	
	Email address for receipt of communications:	
С	Professional Indemnity and Public Liability Insurance:	
	Professional indemnity and public liability insurance cover is to be provide by the consulting engineer. The consulting engineer shall provide a certifi insurance with the tender as well as from time to time at the client's reque	ed and maintained cate of proof of est.
	Limit of professional indemnity insurance cover per claim	R
	Deductible (first amount payable in the event of a claim)	R
	Limit of public liability insurance	R
	Construction Monitoring	
	The Level of construction monitoring services to be provided by the consulting engineer will be as stated by the client in Part C 3.5. If the Level is not stated by the client, the tenderer shall state opposite the Level that will be provided	LEVEL 1 LEVEL 2 LEVEL 3
d	Subcontracting	
	The consulting engineer is to describe any services or part thereof which it is intended will be subcontracted in terms of Clause 7. of the CESA Professional Services Agreement	

C 2 PRICING DATA

(Compiler note: The following Pricing Data are based on best practice principles and generally follow guidelines set down by the Engineering Council of SA (ECSA). The client document compiler may amend or change the Pricing Data to suit the Client's SCM policy, bearing in mind that such changes and amendments may result in unforeseen and prejudicial consequences and should only be carried out by persons with adequate expertise in such matters. Various options for the pricing strategy may be selected when drawing up a tender document, for example percentage based, time and cost, or lump sum. The pricing strategy adopted in this proforma document is based on percentage fees which is the method most commonly adopted in SA)

C 2.1 GENERAL

The professional services to be performed in terms of this professional services agreement, and the terms of remuneration, shall generally be as described in the applicable version of the Engineering Council of SA Guideline Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Professions Act 46 of 2000 (the ECSA Guideline). The applicable version of the ECSA Guideline shall be the version applicable five (5) days prior to the date on which tenders close. As stated in the ECSA Guideline, where the ECSA Guideline is amended and a new version published in the Government Gazette during the currency of this professional services agreement, then the old version(s) of the ECSA Guideline shall apply to the stage or stages which were commenced prior to publication of the new ECSA Guideline, and the new version(s) shall apply to all subsequent stages.

The Consulting Engineer shall be deemed to have allowed in the pricing for everything necessary to provide and complete the professional services in accordance with the requirements described in this tender document. The Pricing Schedules which follow shall be completed and submitted with the tender. Failure to so do may result in the tender being declared invalid.

C 2.1.1 The tendered fee may be percentage based or time based as described in C 2.2 and C2.3 below.

C 2.1.2 The tendered fee is based on estimated values and times for the work and is remeasurable and will be adjusted according to final values and subject to the provisions described in C 2.2 below.

C 2.1.3 All figures quoted in this document shall be in South African Rands (ZAR).

C 2.1.4 All costs quoted in this document shall be exclusive of VAT. VAT will be added to the total prices as indicated in the Pricing Schedule and in the Form of Offer and Acceptance.

C 2.1.5 Only numeric values shall be used to complete the Pricing Schedule which follows. The use of alphabetic characters will not be accepted, and any items tendered as "Incl", "Nil", etc. will be replaced with a zero numeric value. Any items left blank for which a value should have been tendered will be treated as having a zero value.

C 2.1.6 Arithmetic errors, omissions and discrepancies will be dealt with as described in the Cidb SFU.

C 2.1.7 All hourly rates shall be all-inclusive and include all allowances for overheads and administrative costs, but exclude expenses and costs, including travelling costs as described in C 2.2.4 below.

C 2.1.8 Contract Price Adjustment (escalation): Percentage based fees are self-adjusting and based on the actual final cost of the construction works and therefore no further adjustment is necessary as a result of changes in prices (escalation).

C 2.1.9 Fees based on hourly rates will remain fixed for the first twelve (12) months of this agreement but after twelve (12) months they will be adjusted annually on the anniversary date of the closing date for tenders based on the CPI Index as published by Statistics SA in their monthly Bulletin.

C 2.2 PRICING INSTRUCTIONS

C 2.2.1: Percentage Based Fees for Normal Services

The fee for normal services shall be a tendered percentage of the cost of the construction works based on the estimated construction value provided by the client and is expressed as the tender sum for Normal Services as described in the Pricing Schedule, Part C 2.3 below. The cost of the construction works shall be as defined and described for "cost of the works" in the ECSA Guideline.

- a. The fee for normal services shall be determined as described in Clause 4 of the ECSA Guideline and shall include a basic fee based on a primary amount and a secondary percentage fee after which the basic fee is adjusted according to category factors provided in tables in the ECSA Guideline to arrive at the resultant fee for normal services.
- b. The resultant fee shall be expressed as a percentage of the estimated cost of the works provided by the client as described in the Pricing Schedule.

To ensure competition between tenderers, tenderers may adjust the tendered fee percentage for normal services arrived at as described in b) above according to the project circumstance to arrive at the tendered fee for normal services. However the reasonableness of the tendered fee will be judged on the variance from the resultant fee calculated in accordance with a) above and, where the variance exceeds 15%, the tender may be rejected.

The tendered fee percentage shall remain fixed unless the final cost of the works (as defined in the ECSA Guideline) varies by more than 15% from the client's estimated cost provided below and on which the tender percentage is based. Where the final cost of the works varies by more than 15% from the tender estimated cost, the percentage fee will be adjusted following the principle described in the ECSA Guideline.

C 2.2.2: Fees for Construction Monitoring

Depending on the Level of construction monitoring applicable to the project and as recorded in Part C 3.5 by the client, or in Part C 1.2.2 by the tenderer, the fees for construction monitoring services shall be based on the table below:

LEVEL OF CONSTRUCTION MONITORING SERVICE	REMUNERATION
Level 1 Periodic construction monitoring	Included as part of normal services and no additional fee applicable, but if additional site visits are required over the average of one visit every two weeks over the duration of the construction, additional remuneration will apply on a time and cost basis at the hourly rate of such staff
Level 2 1 Part-time construction monitoring	Additional service, remuneration on time and cost at hourly rate of such staff.
Level 3 Full-time construction monitoring	Additional service, remuneration at monthly rate for staff costs in accordance with ECSA Guideline.

C 2.2.3: Time based Fees for Services for Feasibility Studies and Investigations and Reports and Fees for Additional Services

Depending on the nature of the project the tendered fees may be on the basis of time and cost as called for in the Pricing Schedule, Part C 2.3.

The tenderer shall submit hourly rates and prices for key personnel in various categories who may be assigned to undertake the work. The determination of the hourly rates should generally be based on

the method described in the ECSA Guideline, but the factors used to calculate the rates are at the sole discretion of the tenderer.

The remuneration for time basis work shall be strictly at the hourly rate and category of personnel appropriate to the nature of the work being undertaken.

Where remuneration is on a time basis, the consulting engineer shall maintain accurate records of all time spent and costs incurred, which shall be submitted to the client for approval at the time when the work is undertaken, on a weekly or monthly basis as agreed.

The ECSA Guideline describes a number of services which are not regarded as being part of the normal services performed by a consulting engineer and for which additional remuneration must be paid. Unless otherwise agreed between the parties the additional remuneration will be determined on a time and cost basis as described in more detail in the ECSA Guideline.

All remuneration for Additional Services shall be agreed with the client, before such work is commenced, or, if circumstances so demand, as soon as practically possible after commencement of the work.

C 2.2.4: Expenses and Costs (Disbursements)

The client shall reimburse the consulting engineer for all expenses and costs necessarily incurred while performing the services as generally described in the ECSA Guideline. The rates at which such costs may be recovered shall be at the rates published by the National Department of Public Works and Infrastructure on their website and as applicable on the date the expense is incurred.

Travelling costs will only be reimbursed on the basis that the consulting engineer uses the most economical form of transport available and based on the distance of the consulting engineer's local office from the client's office/construction site. In the case of consulting engineers who do not have a local office, the client will limit the reimbursement for travel to ____km per trip one way (*Compiler note: in order to avoid excessive claims for travelling costs by consulting engineers who do not have a local office the client should limit the maximum trip distance on which travel reimbursement will be based. The limit must be applied with discretion and will vary according to the location of the project site in relation to the nearest major town or city where consulting engineers with the required expertise may be expected to be located.)*

The provisional sums allowed in Part C 2.3 will only be expended on the basis of actual expenses and costs incurred and any unexpended amounts will be for the benefit of the client.

C 2.2.5: Provisional sums for additional services

The tender shall include for provisional sums as included in Part C 2.3. These amounts are intended to cover the costs of performing additional services, the details of which are unknown at the time of tendering. Where work is carried out under a provisional sum item, it shall be priced on the actual time and costs involved and any unexpended amount in respect of a provisional sum will not be paid to the consulting engineer.

C 2.3 PRICING SCHEDULE

(Compiler note: The value of the professional fees and the manner in which they are calculated and presented will depend on the nature, value, complexity and duration of the project and many other factors. The compiler of the tender document must take care to prepare a Pricing Schedule which will enable tenderers to price the services properly. Be aware that percentage fees are subject to adjustment depending on the final cost of the project works. The pricing schedule below is indicative only and must be amended according to the client and project needs)

ITEM	DESCRIPTION	UNIT	QUANTITY / VALUE	TENDER RATE	TENDER AMOUNT R
1.	Percentage fee for normal services determined as described in C 2.2.2 above and based on the client's estimated construction cost of works.	%	R(Compiler note: Insert client estimate)		
(Compil applical enginee mechar	ler note: enter the Client estimate ble on multidisciplinary projects, pl ering discipline and separate estim nical, electrical, and electronic eng	of the cons rovide a se lates of co ineering ca	struction cost of the wo eparate Percentage Fe nstruction costs in eac ategories)	orks in Rands e item for eac h of the civil,	. Where ch separate structural,
2.	Fees for construction monitoring services as described in C 2.2.2 above				
(Compil delete t	ler note: the Level of Construction he options below which do NOT a	Monitoring pply.)	g required must be spe	cified in C 3.	5, then
	Level 1: Periodic construction monitoring: Additional site visits (Compiler note: delete this row if not applicable)	R/hour	(Compiler note: Insert estimated total hours to be allowed for additional site visits in excess of one visit every two weeks) hours		
	Level 2: Part-time construction monitoring (Compiler note: delete this row if not applicable)	R/hour	(Compiler note: Insert total hours to be allowed for part- time construction monitoring for the full duration of works construction) hours		
	Level 3: Full-time construction monitoring (Compiler note: delete this row and the following 3 rows if not applicable)		<u>.</u>		
2.1	Engineer Employer's Agent	R/ month	(Compiler note: Insert estimated duration of works construction) months		

2.2	Resident Engineer/ Employer's Agent's Representative	R/ month	(Compiler note: Insert estimated duration of works construction) months		
2.3.	Inspectors/Clerks of Works	R/ month	(Compiler note: Insert estimated duration of works construction) Months		
Compiler note: The tender must allow for various additional services which do not form part of the normal services and for which the consulting engineer must be remunerated on the basis of time and costs. Examples are geotechnical investigations, environmental and traffic impact assessments, arrangements for wayleaves and servitudes, arrangements for municipal services connections and many others. It is usually not possible to identify and quantify the extent of these additional services at the time of tendering and the most convenient and fair manner to manage this is to allow for Provisional Sums in the Pricing Schedule and also to establish competitive hourly rates which will then be used to price the expenditure against each Provisional Sum. The suggested format for the presentation of the hourly rates and Provisional Sums is described below. The Compiler must amend and add additional items as applicable to the particular project and adjust the hours allowed so that they are relevant according to the project needs. The figures provided below are indicative only.					part of the sis of time sis of time services nt of these manage etitive sum. The sum. The ribed lar project The figures
			(Compiler note: Insert the provisional amount in Rands against each Provisional Sum below. Every effort should be made to allow an amount which is appropriate to the project. The same sum is then entered in the following row for the tenderer to put their percentage mark up on the provisional sum for their overheads, charges, and profit)		(Compiler note: repeat the provisiona I sum amount in this column)
3.	Provisional Sums				
3.1	Topographic survey	Prov. Sum			
3.2	Mark-up on item 3.1 above for all overheads, charges and profit.				
3.3	Geotechnical investigations	Prov. Sum			
3.4	Mark-up on item 3.3 above for all overheads, charges, and profit.	%			

3.5	Environmental impact assessment	Prov. Sum			
3.6	Mark-up on item 3.5 above for all overheads, charges and profit.	%			
3.7	Traffic impact assessment	Prov. Sum			
3.8	Mark-up on item 3.7 above for all overheads, charges, and profit.	%			
3.9	Municipal services connections (Compiler note: describe in more detail)	Prov. Sum			
3.10	Mark-up on item 3.9 above for all overheads, charges, and profit.	%			
3.11	Etc.	Prov. Sum			
4.	Fees for Miscellaneous Additional Services not listed above where remuneration is on the basis of time and costs				
The ten each ite remune	derer must allow hourly rates for e m as described below. These hou ration for each Provisional Sum in	each categ Irly rates s Item 3 ab	ory of staff member ar hall be applied to dete ove as well as for this	nd a tender au rmine the act Item 4.	mount for ual
			(Compiler note: adjust the hours in Items 4.1 to 4.5 below. Every effort must be made to allow an amount which is appropriate to the project)	Tender hourly rate	Tender amount
4.1	Project leader	hours	50		
4.2	Senior design engineer	hours	100		
4.3	Design engineer	hours	200		
4.4	Junior design engineer/ technician	hours	200		
4.5	Technician/CAD technician	hours	250		
(Compi describ on expe	ler note: The consulting engineer r ed in the ECSA Guideline. Compil acted project requirements	must be re er to inser	munerated for expensit t estimated quantities a	es and costs against each	as item based

4.1	Provisional sum for travelling	Sum	(Compiler note:		
	expenses		insert an estimated		
			cost to cover the		
			consulting		
			engineer's		
			travelling costs and		
			travelling time by		
			means of private		
			vehicle transport.		
			scheduled airline		
			and/or bus. taxi.		
			hired car)		
4.1	Provisional sum for all other	Sum	(Compiler note:		
	expenses and costs		insert an estimated		
	· · · · · · · · · · · · · · · · · · ·		amount to cover		
			the cost of all		
			reimbursable costs		
			other than		
			travelling such as		
			typing, printing,		
			and copying of		
			documents and		
			drawings, etc)		
4.4	Tenderer to list below any				
	expenses and costs not				
	described above and for which				
	the tenderer requires				
	remuneration				
		0			
4.4.1		Sum			
4.4.2		Sum			
4.4.3		Sum			
		-			
4.4.4		Sum			
4.4.5		Sum			
	SUBTOTAL				
	VALUE ADDED TAX (13%)				
	TOTAL TENDER PRICE CARR	IED FORV	VARD TO FORM OF C	OFFER	

C3 SCOPE OF CONSULTING ENGINEERING SERVICES AND CONSTRUCTION SCOPE OF WORK (TERMS OF REFERENCE)

C 3.1 General

This Part of the document describes the scope of the services to be performed by the consulting engineer in terms of this professional services agreement as well as the scope of the construction work to be undertaken by the construction contractor in terms of the construction contract between the client (employer) and the contractor.

C 3.2 Estimate of Cost of Works

The client's estimate of the cost of the works as described in C 3.5 below is provided in the Pricing Schedule, Part 2.3 and it shall be used to determine the tender pricing.

C 3.3 Project Programme

The key target milestone dates for the project are as follows: (Compiler note: Add to or delete ECSA Stages as below)

ITEM	DESCRIPTION	TARGET DATE
1	Date for commencement of the consulting engineering services, if not the date of signature of this Agreement	(Compiler, insert target date)
2	Date for completion of Stage 1 Inception Stage	(Compiler, insert target date
3	Date for completion of Stage 2: Concept and Viability	(Compiler, insert target date
4	Date for completion of Stage 3: Design development	(Compiler, insert target date
5	Date for completion of Stage 4: Documentation and Procurement	(Compiler, insert target date
6	Date of anticipated award of construction works contract	(Compiler, insert target date
7	Date for completion of construction works (handover)	(Compiler, insert target date
8	End of Defects Liability Period	(Compiler, insert target date

Note: The consulting engineer will be required to draw up his/her programme to perform and complete the services based on the key milestone dates provided above. If the key milestone dates are not provided by the client, in the above table, the tenderer shall submit the time required for completion of the services in Part C.1.1, Form of Offer and Acceptance.

C 3.4 Scope of Consulting Engineering Services

The services to be performed in terms of this professional services agreement shall be as described in the applicable version of the Engineering Council of SA (ECSA) Guideline Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Professions Act 46 of 2000. The applicable version of the ECSA Guideline shall be the version applicable five (5) days prior to the date on which tenders close. As stated in the Guideline, where the Guideline is amended and a new version published in the Government Gazette during the currency of this professional services agreement, then the old version(s) of the Guideline shall apply to the stage or stages which were commenced prior to publication of the new Guideline and the new version(s) shall apply to all subsequent stages.

The scope of the consulting engineering services to be performed by the consulting engineer in terms of this agreement includes the Normal Services for Stages 1 to 6 as defined and described in the ECSA Guideline.

(Compiler note: The scope of normal services described in the ECSA Guideline should be adequate to describe the scope of services to be provided by a consulting engineer on most routine and less complex projects, but the client must describe any additional services which the consulting engineer must include in the tender price, failing which such additional services, if required, will result in claims for extra costs by the consulting engineer. Some examples are:

- This proforma tender document for consulting engineering services assumes that the client
 has carried out and completed preliminary feasibility and viability studies and investigations
 normally associated with infrastructure projects and has completed the preparation of reports
 which include preliminary proposals and initial feasibility studies which will be made available
 to the consulting engineer. If this is not the case, the consulting engineer will be entitled to
 provide these services as additional services and will be entitled to additional remuneration.
- This proforma tender document for consulting engineering services may be used for appointments for services related to carrying out studies and investigations and the preparation and submission of reports for initial feasibility studies, but in such instances the Pricing Schedule must be amended and based on hourly rates and expenses and costs and the Scope of Services and Scope of Work must describe the work to be performed by the consulting engineer.
- This proforma tender document assumes that the consulting engineer will be appointed to perform all the stages of the normal service, from Stage 1 to Stage 6, as described in the ECSA Guideline. If this is not the case, the document must be amended accordingly.
- Site investigations, surveys, tests, analyses, etc.
- Obtaining data, drawings, documents and any other information relevant to the project.
- The provision of an initial project cost estimate
- Environmental, geotechnical, tacheometric surveys and reports
- Site surveys
- Way leaves, servitudes, and expropriations
- Provision of services and infrastructure (eg water, sewage, and electrical connections)
- Obtaining statutory approvals and licenses, eg Water Use License
- Work related to targeted procurement which may include:
 - Incorporate targeted participation goals
 - Manage and administer targeted procurement programme
 - Auditing compliance
- Community and stakeholder liaison and communication
- Software compliance
- Condition assessment of existing infrastructure)

C 3.5 Construction Monitoring Services

The consulting engineer shall provide Construction Monitoring services as described in the ECSA Guideline. The Guideline describes three Levels of construction monitoring services which are summarised in the following table:

LEVEL 1	Periodic construction monitoring	Visit the site at an average frequency of once every two weeks over the duration of the project. Additional visits, if required and if agreed between the client and the consulting engineer, will be regarded as an additional service.
LEVEL 2	Part-time construction monitoring	Visit the site at a frequency that may vary during the course of a project and such visits may be daily or weekly according to the project demands and as agreed between the client and the consulting engineer.
LEVEL 3	Full-time construction monitoring	Maintain a full-time presence on site with one or more site staff

The Level of construction monitoring selected by the client in terms of this agreement is

Level 1/Level 2/ Level 3 (Delete as applicable)

If the Level of construction monitoring is not selected above, the tenderer must state in Part C 1.2.2 the Level of construction monitoring that will be provided.

(Compiler note: the level of construction monitoring services (as described in the ECSA Guideline) and the frequency and duration of the site visits must be agreed between the client and the consulting engineer after taking into account the following factors

- The type of work and the speed with which elements of the work are covered up
- The engineering discipline (civil, structural, mechanical, electrical)
- The complexity of the project works and the expected competency of the contractor(s)
- The risk of non-compliance and the consequences thereof)

C 3.6 Scope of Construction Work

(Compiler note: the provision of a clear, detailed description of the scope of the project works which will be constructed by the construction contractor and which is the ultimate objective of any infrastructure project is absolutely critical to the success or failure of any project.

The better the description provided the more likely tenderers will understand the client's requirements and will be able to respond and price the consulting engineering services accurately. As much detail as possible should be provided, based on the following three basic project parameters:

- A description of the works
- The project estimate and budget
- The project programme

This section of the manual includes some typical examples of the minimum requirements for describing a scope of works for different project types)

C 3.6.1. Project Overview

Compiler note: bearing in mind that the "project" includes both the services to be provided by the consulting engineer as well as the works to be undertaken by the construction contractor, start with a general overview of the project, the project objectives, and the basic project description, whether it is a new project or upgrading/extending/additions to an existing piece of infrastructure.

The following are examples of a typical project overview for two different types of infrastructure project:

Example A: New school:

The client intends constructing a new school near the town of Heritage in the Utopia Province. The school building must be two storeys high and designed to accommodate 600 learners and will include 30 classrooms, 2 science laboratories, 4 computer laboratories, an assembly hall, staff facilities, ablution facilities as well as outdoor playing fields for soccer and netball.

A 25 000M² site which is located on unoccupied municipal land within the Heritage municipal area has been identified and made available. The site is sloping and will require levelling. The site address is:

5 School Road, Academia Heritage

GPS Coordinates:

The client is the Department of Education and Learning and a preliminary project feasibility study has been completed and will be made available to the consulting engineer. The client has established an initial cost estimate of R123 000 000.00 excluding professional fees. Construction of the works is planned to commence in January 2023 and must be complete by December 2023.

This professional services agreement will include consulting engineering services for the design and construction monitoring and administration of the civil and structural engineering services required for the project.

Example B: Alterations and Additions to an Existing Wastewater Treatment Works

The existing Wastewater Treatment works in the town of Heritage in Utopia Province has a capacity of treating 8 MI/day and due to growth of the town of Heritage is now reaching its design capacity. Heritage Municipality intends to increase the capacity of the treatment works to 20 MI/day which is expected to be sufficient to meet the town's needs for at least 30 years.

The site is located outside the town of Heritage and may be accessed from the N27 North approximately 10 kms from the Heritage Municipal offices at GPS location

The client is the Heritage Municipality who has completed a preliminary planning and feasibility study of the project. The estimated cost of the upgrading project is R123 000 000.00 excluding professional fees and the project must be complete by December 2023.

The client intends appointing a multi-disciplinary consulting engineering firm to carry out the design and construction monitoring and administration of the project.

C 3.6.2 Scope of Works

(Every single infrastructure project is unique, and the scope of works required will be different from one project to another. In order to assist the compiler of the professional services tender document, some examples of descriptions of the scope of works for some typical infrastructure projects are provided below. These are presented as very brief examples and every effort should be made to expand on the description and to provide as much information as possible to assist the tenderer)

A. Building Project

- a. Describe building function (eg a school), usage and occupancy,
- b. New building or alterations to an existing facility.
- c. Site details, location, area, boundary details, existing fencing, walls, etc.
- d. Erf zoning
- e. Site conditions (if known), results of any soils tests or geotechnical information.
- f. Provision for site services: water and electricity supply, availability of telecommunications, sewage, stormwater
- g. Site restrictions if known
- h. Roads and parking
- i. Stormwater management
- j. Building accommodation requirements broken down into as much detail as possible, for example in the case of a school the number of learners, number and sizes of classrooms, laboratories, offices, assembly halls, ablutions, storerooms, etc, number, size, and type of playing fields and any other relevant information about the buildings and the site.
- k. Building construction: foundations, walls and floors including finishes, roof construction and cladding
- I. Compliance with local authorities' requirements and the National Building Regulations.
- m. Energy efficiency
- n. Building services required such as fire protection, air conditioning and mechanical ventilation, water storage
- Building projects normally include a multi-disciplinary team including architect, quantity surveyor, project manager, various engineering disciplines. Describe these and describe which services form part of the services to be provided under this professional services agreement.
- p. Etc,

B Electrical Reticulation

- a. The number of erven supplied
- b. New or existing installation. If existing a detailed description of the existing installation must be provided.
- c. The type of installation (overhead/underground)
- d. Any client specifications for the installation (eg type of conductors)
- e. The supply Authority.
- f. The point of supply and supply parameters
- g. Substation details, if applicable, including substation type (Indoor, outdoor, pole mounted, etc), earthworks and civil engineering requirements, substation building and enclosure, security provisions, primary and secondary voltages, type of switchgear if applicable.
- h. Layout drawings indicating layout of erven and point of supply
- i. Requirements for streetlighting, if applicable, including requirements for high-mast area lighting
- j. Requirement for service connections to houses (eg pre-payment meters and distribution boards)
- Any requirements for communications services (eg optic fibre cables and/or sleeves and manholes for such services
- I. Etc,

C Water or Sewer Reticulation

- a. The number of erven supplied
- b. New or existing reticulation. If existing a detailed description of the existing reticulation must be provided.
- c. Design guidelines and standard details to be used
- d. Any client specifications for the reticulation (eg type of pipes to be used)
- e. The point of supply/discharge and supply/discharge parameters
- f. Layout drawings indicating layout of erven and point of supply/discharge
- g. Requirements for house connections, if applicable,
- Requirement for service connections to houses (eg pre-payment meters and distribution boards)
- i. Etc,

D Roads and Stormwater

- a. Basic planning/preliminary design report with design standards
- b. Upgrade of existing road or new road
- c. Beginning and end of road, length, class of road, traffic projections,
- d. Major interchanges/intersections, bridges
- e. River crossings, culverts and road drainage requirements and associated water use license requirements
- f. Incident Management system data for potential hazardous locations (existing roads only)
- g. Safety and accommodation of pedestrian traffic
- h. Signage and road lighting
- i. Etc

E Water and Wastewater treatment

- a. Concept design report with design standards, capacity required, inflow characteristics preliminary process design etc.
- b. New or upgrade project
- c. Biosolids/backwash handling
- d. Effluent discharge requirements
- e. Disinfection requirements
- f. Instrumentation, control and automation requirements and SCADA
- g. Power supply scope (See B above)
- h. Security
- i. Etc.

F Water Transmission Systems

- a. Concept design report with design standards, capacity required, preliminary design etc.
- b. Pumpstation location and configuration
- c. Instrumentation, control and automation requirements and SCADA
- d. Heating Ventilation and Air conditioning (HVAC)
- e. Power supply scope (See B above)
- f. Preliminary pipeline route(s) and diameter(s)
- g. Reservoir and break pressure tank requirements
- h. Road and watercourse crossings
- i. Surge protection
- j. Cathodic protection
- k. Communication between facilities
- I. Disinfection booster facilities

m. Etc.