TENDER NO. 194C/2020/21	CITY OF CAPE TOWN ISIXEKO SASEKAPA STAD KAAPSTAD

FRAMEWORK CONTRACT DOCUMENT

FOR THE

TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN

CONCLUDED BETWEEN

CITY OF CAPE TOWN

(WASTEWATER TREATMENT BRANCH)

AND

BIGEN AFRICA SERVICES (PTY) LTD

"STANDBY SERVICE PROVIDER 1"

REGISTRATION NUMBER: [redacted]

[redacted]

PREAMBLE

WHEREAS Term **Tender 194C/2020/21** was awarded to namely **Bigen Africa Services (Pty) Ltd**, in line with resolution **SCMB 50/05/21** dated 17 May 2021 for the provision of multidisciplinary professional services for the Water and Sanitation Department of the City of Cape Town, from the Start Date for a period of 60 months.

AND WHEREAS it is recorded that this Contract will be governed by the provisions of **Standard Professional Services Contract (July 2009) (Edition 3 of CIDB document 1015)**, as published by the Construction Industry Development Board ("**GCC**"), read with the Contract Specific Data ("**CSD**") annexed hereto marked "**PART C1.2: CONTRACT DATA**".

NOW THEREFORE THE PARTIES AGREE AS FOLLOWS:

1. PARTIES

The Parties to this Contract are:

1.1. **The City of Cape Town**, a metropolitan municipality, established in terms of the Local Government: Municipal Structures Act, 117 of 1998 read with the Province of the Western Cape: Provincial Gazette 5588 dated 22 September 2000, as amended (**"the Employer"**), herein represented by the Executive Director: Water and Waste duly authorised hereto;

1.2. **Bigen Africa Services (Pty) Ltd**, a private company registered in terms of the laws of the Republic of South Africa with registration no: [redacted] with its principal place of business situated at [redacted] (the **Service Provider**"), herein represented by its duly authorised representative, [redacted] in his capacity as Business Unit Manager;

hereinafter jointly referred to as each a "Parties" and in singular, a "Party" and,

2. INTERPRETATION

2.1. In the event of any conflict between the provisions of this Contract, the GCC and any Part attached hereto, or any other document incorporated by reference to this Contract, save to the extent expressly stated to the contrary, such conflict will be resolved by giving precedence to such different parts of this Contract in the following order of precedence:

2.1.1. first, the terms and conditions of the CSD;

2.1.2. second, the terms and conditions of the GCC;

2.1.3. third, Parts and annexures to this Contract; and

2.1.4. fourth, any other documents incorporated by reference.

2.2. The provisions of this Contract supersede and replace the provisions of any previous agreement entered into between the Parties relating to the same subject matter.

[redacted]

3. APPOINTMENT AND DURATION

3.1. The Employer hereby appoints the Service Provider to perform the Scope of Work for the Employer from the Start Date.

3.2. Unless terminated earlier in accordance with the provisions as set out in the GCC or any other provision in terms of this Contract, this Contract shall be for a period of 60-months from the Start Date.

4. MUTUAL GOOD FAITH / CO-OPERATION

4.1. The Parties represent and undertake to do all such things, perform all such acts and take all steps to procure the doing of all such things and the performance of all such acts, as may be necessary or incidental to give effect to the execution of this Contract.

4.2. The Parties shall at all times during the continuance of this Contract observe the principles of good faith towards one another in the performance of their obligations in terms of this Contract.

5. OBLIGATIONS OF THE EMPLOYER

5.1. The Employer undertakes to perform its obligations in accordance with the Contract, including but not limited to the Scope of Work (**PART C3: SCOPE OF WORK**), subject to the satisfactory fulfilment of the obligations by the Service Provider as set out in this Contract.

5.2. The Employer shall monitor and evaluate the Contractor's performance in respect of the Scope of Work.

6. OBLIGATIONS OF THE SERVICE PROVIDER

6.1. The Service Provider hereby agrees and undertakes to perform the Services to the Employer as set out in Scope of Work (**PART C3: SCOPE OF WORK**).

6.2. The Service provider will perform the Works as expeditiously as possible and furthermore agrees and undertakes to perform the services in accordance with the operational requirements of the Employer.

6.3. The Service Provider will ensure that the Works will be of a satisfactory quality and fit for purpose, having due regard to the assumptions that the Service Provider can be reasonably expected to make in accordance with sound engineering and/or professional practice and exercising the level of skill, care and attention required of the Service Provider.

6.4. The Service Provider shall, ensure that its employees, agents, representatives, sub-contractors and suppliers comply with this Contract and all applicable Laws in the execution of the Works.

6.5. The Service Provider will not conduct any activity of whatsoever nature which may be detrimental to the Employer's reputation and goodwill.

7. PRICING DATA

7.1. The Contract Price for the Works shall be as set out in the Pricing Data annexed marked "**PART C2: PRICING DATA**".

7.2. The Service Provider shall not be entitled to any other consideration for the rendering of the Services other than as provided for in this Contract.

[redacted]

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[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 194C/2020/21

TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN

C1.1 Form of Offer and Acceptance – Wastewater Treatment Branch

Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

CONTRACT 194C/2020/21: TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN

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 service provider 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.

This is a rates based contract.

The rates as contained in Part C2.2: Schedules of Rates for the branches tendered for, shall form the tender offer. These rates shall be multiplied, as applicable, by the quantities required in respect of relevant items to develop individual Works Projects to be allocated in accordance with the procedures described in the Procedure for the Allocation of Works Projects, Part C1.2: Contract Data in this Framework Contract document.

This offer may be accepted by the employer 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 service provider in the conditions of contract identified in the contract data.

Signature(s) [redacted] .....

Name(s) [redacted] .....

Capacity Business Unit Manager ! .....

for the tenderer

(Name of organization/tenderer) Bigen Africa Services (Pty) Ltd .....

(Address of organization/tenderer) [redacted] .....

.....

Name and signature of witness [redacted] Date 4 December 2020

[redacted]

For official use.
INITIALS OF CITY OFFICIALS AT TENDER OPENING
1. [redacted] 2. [redacted] 3. [redacted]

[redacted]

Acceptance – Wastewater Treatment Branch

By signing this part of this form of offer and acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the service provider 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 employer 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 C1: Agreements and contract data, (which includes this agreement)
Part C2: Pricing data
Part C3: Scope of work
Part C4: Site information

and drawings and documents or parts thereof, which may be incorporated by reference into the above listed Parts.

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 employer 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 employer's representative (whose details are given in the contract data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other 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 the parties have signed the table below and confirms receipt from the employer of one fully completed original copy of this agreement, including the schedule of deviations (if any). The tenderer (now contractor) shall within five working days of the agreement coming into effect notify the employer in writing of any reason why he cannot accept the contents of this agreement as a complete and accurate memorandum thereof, failing which the agreement presented to the contractor shall constitute the binding contract between the parties.

The Parties	Employer	Service Provider
Business Name	City of Cape Town Metropolitan Municipality	Bigen Africa Services (Pty) Ltd
Business Registration	Not applicable	[redacted]
Tax number (VAT)	[redacted]	[redacted]
Physical Address	Civic Centre 12 Hertzog Boulevard Cape Town 8000	[redacted]
Accepted contract sum including tax	Rates based contract	
Accepted contract duration	60 months from Start Date	
Signed – who by signature hereto warrants authority	[redacted]	[redacted]
Name of signatory	[redacted]	[redacted]
Signed: Date	22 October 2021	6 October 2021
Signed: Location	Cape Town	Tyger Valley, Bellville
Signed: Witness		[redacted]
Name of Witness		[redacted]

Start Date	Start date is the date on which a signed copy of the contract date is received by the Service Provider
Completion Date	30 September 2026

C1.2 Contract Data – Wastewater Treatment Branch

Data provided by the Service Provider

The name of the Service Provider is ..... Bigen Africa Services (Pty) Ltd .....

The address of the Service Provider is

Physical Address: [redacted]

Postal Address: [redacted]

Telephone: [redacted]

Fax: [redacted]

email: [redacted]

[redacted]

C1.2 Contract Data

Part 1: Contract Data provided by the Employer

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract are the **Standard Professional Services Contract (July 2009) (Edition 3 of CIDB document 1015)**, as published by the Construction Industry Development Board.

Copies of these General Conditions of Contract may be obtained from the Construction Industry Development Board's website **www.cidb.org.za**. Copies of the General Conditions of Contract are also available for inspection and scrutiny at the offices of the Employer.

The pro-formas attached to the Standard Professional Services Contract (July 2009) on pages 17 to 24 shall not apply to this Contract and shall be replaced with the documentation bound into this Contract Document.

The General Conditions of Contract make several references to the Contract Data for specific data, which together with the standard contract collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the General Conditions of Contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Specific Data below. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

i. the Form of Offer and Acceptance,
ii. the Contract Specific Data within the Contract Data,
iii. the General Conditions of Contract
iv. the Drawings
v. the Scope of Work
vi. the Pricing Data, and,
vii. The Conditions of Tender, the Tender Data and Tender Schedules

If an ambiguity or discrepancy is found in the documents, the Employer shall issue any necessary clarification or instruction.

CONTRACT SPECIFIC DATA

The following contract specific data is applicable to this Contract:

Clause 1:
*Add the following to the definition of **Employer:***
The **Employer** is the **CITY OF CAPE TOWN.**

Add the following new definitions:
"**Framework Contract**" means the Contract as defined in Clause 1 of the Standard Professional Services Contract (July 2009) (Edition 3 of CIDB document 1015).

"**Framework Contract Period**" means the period 60 months from the Start Date.

"**Framework Contract Manager"** (for each branch)" means the person named as the Framework Contract Manager in the Contract Data or any other person appointed from time to time by the Employer and of whom the is notified, in writing, to act as Framework Contract Manager for the particular branch for the purposes of the Contract as substitute for the Framework Contract Manager so named.

The function of the Framework Contract Manager is to administer the Framework Contract, and such functions as would normally fall to the Employer's Agent/Engineer/Principal Agent in accordance with the provisions of the Framework Contract, shall be undertaken by the Framework Contract Manager in this regard.

The Framework Contract Manager shall be an employee of the Employer, authorised as its representative to administer the Framework Contract, and all references to Employer's Agent/Engineer/Principal Agent in the Contract shall apply to the Framework Contract Manager in respect of his/her administering the Framework Contract.

The Framework Contract Manager is:

Branch:	**Wastewater Treatment**
Name:	[redacted]
Postal address:	Water and Sanitation Department Private Bag X98 Bellville, 7535
Cellphone No.:	[redacted]
E-mail:	[redacted]

Add the following to the definition of ***Key Persons:***
Key personnel shall have the same meaning as Key Persons.

Replace the term ***Period of Performance****:*
Replace the term Period of Performance with the term **Framework Contract Period** (as defined above)

Add the following to the definition of ***Project:***
The project is the **TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN**

Add the following new definitions:

"Intellectual Property" means any and all intellectual property rights of any nature anywhere in the world whether registered, registerable or otherwise, including patents, trademarks, registered designs and domain names, applications for any of the foregoing, trade or business names, copyright and rights in the nature of copyright, design rights, rights in databases, know-how, trade secrets and any other intellectual property rights which subsist in computer software, computer programs, websites, documents, information, techniques, business methods, drawings, logos, instruction manuals, lists and procedures and particulars of customers, marketing methods and procedures and advertising literature, including the "look and feel" of any websites

"**Purchase Order**" means the official purchase order created and released on the City of Cape Town's SAP System.

"**Schedules of Rates**" means, in this Framework Contract document, the document so designated in the Pricing Data, and which will be used to compile a quotation for Professional Services to be rendered for each Works Project.

"Standby Service Provider" means either "Standby Service Provider 1" or "Standby Service Provider 2"

"**Standby Service Provider 1**" means the highest ranked eligible (subject to Clause C.1.6.1 (b) in the Tender Data) Service Provider for a branch appointed by the Employer under the Framework Contract to be available to execute Works Projects, for the duration of the Framework Contract Period and then only if the "Winner" declines/refuses a Works Project or unless the Employer considers the "Winner" not to be performing on existing Works Projects. (refer to clause 5.1.3 in C 1.2: Contract Data)

"Standby Service Provider 2" means the highest ranked eligible (subject to Clause C.1.6.1 (b) in the Tender Data) Service Provider for a branch appointed by the Employer under the Framework Contract to be available to execute Works Projects, for the duration of the Framework Contract Period and then only if the "Winner" and "Standby Service Provider 1" declines/refuses a Works Project or unless the Employer considers the "Winner" and "Standby Service Provider 1" not to be performing on existing Works Projects. (refer to clause 5.1.3 in C 1.2: Contract Data)

"**Winner**" means the highest ranked eligible (subject to Clause C.1.6.1 (b) in the Tender Data) Service Provider appointed by the Employer under the Framework Contract who will be allocated work as and when a Works Project arises for the duration of the Framework Contract Period.

[redacted]

"**Works Project**" means a part of the Works to be performed (task) by a Service Provider under the Contract, the specific terms, conditions and scope of the Works Project contract being specified in a Works Project Contract Brief.

Add the following to the definition of ***Service Provider:***

The contracting party may be a consortium/joint venture contracting as a formally constituted Joint Venture Partnership, in which all parties are jointly and severally liable. In terms of this definition, the words consortium and joint venture shall be regarded as synonymous.

Add the following to the definition of ***Start Date:***
The Start Date is the date when the Service Provider confirms receipt of one fully completed original copy of this document, including the acceptance part of the form of offer and acceptance, and schedule of deviations (if any).

Add the following definition:

Clause 3.1
*Delete the heading and replace with "**Governing law and policies**"*

Add the following at the end of clause 3.1

Supply Chain Management Policy

a) The parties agree that this contract shall also be subject to the Employer's Supply Chain Management Policy ('SCM Policy') that was applicable on the date the bid was advertised, **save that if the Employer adopts a new SCM Policy which contemplates that any clause therein would apply to the contract emanating from this tender, such clause shall also be applicable to that contract.** Please refer to this document on the Employer's website.

b) Abuse of the supply chain management system is not permitted and may result in cancellation of the contract, restriction of the supplier, and/or the exercise by the Employer of any other remedies available to it as described in the SCM Policy.

Clause 3.2
Replace the words "time for completion" with "Framework Contract Period".

Clause 3.4 and Clause 4.3.2:
Add the following:
The authorised and designated representatives of the Employer are the Directors of Bulk Services, Retail Services and Technical Services of the Water and Sanitation Department.

The address for receipt of communications is:

Branch	Wastewater Treatment
Department	Bulk Services
Email	[redacted]
Postal Address:	Private Bag X98 BELLVILLE 7535
Physical Address:	Bellville Water and Sanitation Head Office Corner of Voortrekker Road and Mike Pienaar Boulevard BELLVILLE 7535

Clause 3.4.1:
Add the following to the first sentence:
… , and may be given as set out hereunder and shall be deemed to have been received when:
a) hand delivered - on the working day of delivery
b) sent by registered mail - five (5) working days after mailing
c) sent by email or telefax - one (1) working day after transmission

Clause 3.5:
Add the following:
The location for the performance of the Project will be the **Local Office** of the Service Provider, together with the sites of the proposed projects. The local office must be in the Cape Metropolitan area or within a radius of 60 km from the Water and Sanitation Head Office, Bellville. If the Service Provider does not have a local office, they will be required to establish a local office within 2 (two) months of the Start Date. All communication with the Employer will flow through this local office. This local office may belong to the Service Provider or any of his Joint Venture partners or sub-consultants.

Key personnel will be expected to work out of the local office for the full duration of the Framework Contract as the exigencies of this contract require.

Clause 3.8.1:
Add the following new paragraph:
The Employer reserves the right to reduce, increase or cancel individual Works Projects. This shall be done without adjustment to the agreed rates, sums or fees and without payment of any penalty or surcharge in this regard.

Clause 3.9.1:
Add the following after f):

g) a change in the cost of the construction works applicable to the services

Clause 3.9.2:
Replace the words "6 weeks" with "21 days".

Add the following at the end of the clause:
Should any of the events described in clause 3.9.1 occur, the professional fees and disbursement may be adjusted in a fair and reasonable manner. The Service Provider shall, however, not be entitled to an adjustment to the extent that the variation is due to the negligence or default of the Service Provider. The Service Provider is required to provide all necessary substantiating documents required by the employer to evaluate the request for variation.

Clause 3.9.3:
Delete the clause and replace with the following:
The Employer shall assess the changes to the estimated fee (per Works Project) proposed by the Service Provider on any fair and reasonable basis. The Employer may assess these changes on the effect of the event on the Services based on the time-based fees as stated in the Pricing Data.

Clause 3.12
Delete the heading and replace with ***"Penalties and fines"***

Clause 3.12.1
Add the following:
Failure to establish a Local Office within 2 (two) months of the Contract Start Date (refer to clause 3.5 of the Contract Data above):

Failure to establish a Local Office within 2 (two) months of the Contract Start Date will result in the implementation of penalties.

- The penalty amount for every day for which the Local Office is not established and functional is R5 000 with no limit.
- The minimum 'functional' requirement is for the Key Personnel (required for the Works Projects) to be established together with the necessary physical resources.
- A Breach Notice will be issued if the Local Office is not established by the due date with the requirement that the matter be remedied within 14 days or such time as agreed to by the Employer.
- No further Works Project Briefs will be issued if the Local Office is not established and functional within 2 (two) months of the Contract Start Date.
- Should the Employer consider the local office not to be functional at any stage during the course of the contract, the Employer will notify the Service Provider accordingly and issue a Breach Notice.
- If the matter is not resolved within 14 days (or such time as agreed to by the Employer) of the issuing of the Breach Notice, the Employer may terminate the contract in terms of Clause 8.4.1 (c) of the Contract Data.

Failure to meet deliverable or milestone date (as defined in the agreed Works Project proposal):
Failure to adhere to timeframes without valid agreed upon reasons will result in the implementation of penalties.

- The penalty amount per day for each deliverable/milestone is R2 000 (to a maximum of 42 days - R84 000).
- A deliverable/milestone that is more than 14 days late will result in the issuing of a Breach Notice which will require the matter to be remedied within 14 days or such time as agreed to by the Employer.
- If the matter is not resolved within 14 days (or such time as agreed to by the Employer) of the issuing of the Breach Notice, the Employer may terminate the contract in terms of Clause 8.4.1 (c) of the Contract Data.

Add the following after 3.12.2

Clause 3.12.3
The Employer may impose the following additional penalties or fines:

a) Penalties for breach of conditions of granting preferences in terms of the **Preference Schedule.**
b) Penalties for failure to meet targeted labour and local enterprises contract participation goals (if applicable)
c) Any other fines or penalties levied in accordance with any of the specifications.

[redacted]

[redacted]

Clause 3.15.1:
Add the following:
The programme shall be submitted within **14** days of the Start Date.

Clause 3.16.2:
Replace the words "in which the start date falls" with "prior to the closing date of the tender".

Add the following:
The indices are those contained in Table A of the P0141 Consumer Price Index for the **CPI for services** published by Statistics South Africa.

Clause 4.7:
Delete the clause and replace with:
The Employer shall pay the Service Provider in accordance with the provisions of the Contract.

Add the following clause after Clause 4.7:

Clause 4.8 Procedure for the allocation of Works Projects
The Employer will provide the Service Provider with a scope/project brief and any specific terms and conditions (such as time frames/milestones) for a particular Works Project. The Employer reserves the right to plan and effect individual Works Projects at its sole discretion and subject to the availability of funding. The Employer also reserves the right to increase or decrease the scope of work at its sole discretion.

If the "Winner" declines the Works Project due to lack of capacity at that time, the Employer reserves the right to offer the Works Project to the "Standby Service Provider 1".

If the "Standby Service Provider 1" declines the Works Project due to lack of capacity at that time, the Employer reserves the right to offer the Works Project to the "Standby Service Provider 2".

If, in the opinion of the Employer, the "Winner" is:

(a) not performing on an existing Works Project/s; or
(b) is lacking capacity or the necessary skills for a particular Works Project; or
(c) if the proposal on a Works Project is unsatisfactory (after consultations), then

the Employer reserves the right to offer the Works Project to the "Standby Service Provider 1".

If, in the opinion of the Employer, the "Standby Service Provider 1" is:

(a) not performing on an existing Works Project/s; or
(b) is lacking capacity or the necessary skills for a particular Works Project; or
(c) if the proposal on a Works Project is unsatisfactory (after consultations), then

the Employer reserves the right to offer the Works Project to the "Standby Service Provider 2".

The procedure for the allocation of Works Projects is described in detail at the end of this Part 1: Contract Data provided by the Employer.

Clause 5.1.1
Add the following

The Services to be performed will be defined in terms of the Works Projects.

The procedure for the allocation of Works Projects are described in Clause 4.8 above.

The Service Provider will respond to the Works Project Brief with a Works Project Proposal

The Employer reserves the right to reduce the scope of work of a Works Project or cancel a Works Project based on the Non-performance of the Service Provider.

Add the following after Clause 5.1.2:
Clause 5.1.3 Failure to perform (Non-performance) by the Service Provider on a Works Project would include (but not be limited to) the following:

- Repeated inadequate Works Project Proposals (including methodology, resources availability and appropriate skills, resource-based costing where applicable, programming time frames/milestones, cost proposals);
- Failure to provide adequate and appropriate resources;

- Repeated failure to adhere to the agreed programme or time frames/milestones,
- Repeated failure to submit reports, drawings or other documents by the agreed dates;
- Repeated errors or significant design or construction monitoring errors;
- Other failures or actions on the part of the Service Provider causing additional costs to the Employer or delays to the programme;
- Combinations of the above.

(a) If the "Winner" does not remedy a failure in the performance of their duties under the Works Project within fourteen (14) days of having been notified thereof, or within any further period that the Employer may subsequently approve in writing, the Employer reserves the right to:

- Reduce the scope of work of the Works Project;
- Cancel the Works Project;
- Offer the Works Project in question and/or subsequent Works Projects to the "Standby Service Provider 1".

(b) If the "Standby Service Provider 1" does not remedy a failure in the performance of their duties under the Works Project within fourteen (14) days of having been notified thereof, or within any further period that the Employer may subsequently approve in writing, the Employer reserves the right to:

- Reduce the scope of work of the Works Project;
- Cancel the Works Project;
- Offer the Works Project in question and/or subsequent Works Projects to the "Standby Service Provider 2".

Clause 5.4.1:
Add the following:
The Service Provider is required to take out and maintain, for the full duration of the performance of this contract, the following insurance cover:

a) Professional Indemnity (PI) insurance providing cover in an amount of not less than R20 000 000 in respect of each and every claim during the period of insurance. Where the entity tendering is a joint venture then the value of the PI insurance cover required may be shared between the joint venture partners in proportion to the percentage contribution of each party to the joint venture.
b) Public Liability insurance with a limit of indemnity of not less than R20 000 000 for any single claim, the number of claims to be unlimited during the contract period.
c) Insurance in terms of the provisions of the Compensation for Occupational Injuries and Diseases (COID) Act No. 130 of 1993.

The Service Provider shall ensure that any sub-contractors engaged in construction activities shall, in addition to the Public Liability and COID Insurances as described above, also take out and maintain contractors all risks insurance to the value of the work being undertaken.

Clause 5.4.2
Add the following:
Evidence of insurance or confirmation (warranty) from a reputable Insurance Broker that the required insurances are in place, shall be submitted within **14** days of the Start Date.

Add the following clause after Clause 5.4.2:

5.4.3 The Service Provider shall maintain the insurance policy/ies for the duration of the liability period in terms of Clause 13.4 and shall upon request by the Employer provide periodic proof of such insurance.

Clause 5.5:
Add the following:
The Service Provider is required to obtain the Employer's prior approval in writing before taking any of the following actions:

a) Replacing any of the key and additional personnel listed at the time of tender.
b) Occupying any public land or facility for any purpose that will cause disruption and or inconvenience to the users of such land or facility in respect of any construction contract.
c) Making a material change, addition or omission from the approved designs.
d) The exercising of any discretion in terms of any terms and conditions in this contract, that results in the utilisation of the contingency allowance of a construction contract, increasing the contract value for that construction contract or awarding any additional time for that construction contract as detailed in the relevant contract conditions.
e) Permitting advance payment for items not listed in the Advance Payment Schedule.
f) Nominating the Employer's Agent/Engineer/Principal Agent or their respective representatives (as applicable) in terms of the relevant Conditions of Contract.
g) Authority of the Employer's Agent/Engineer/Principal Agent to delegate.
h) Granting permission to work during non-working times in terms of the relevant Conditions of Contract.

i) Suspend the progress of the works in terms of the relevant Conditions of Contract.
j) The issuing of an instruction to accelerate progress in terms of the relevant Conditions of Contract.
k) Approval of any other Additional and Specialist Services and their respective costs/hourly rates.

Clause 6.4:
Add the following clause after Clause 6.3:

6.4 Conflict of interest
The Service Provider shall immediately disclose any potential conflict of interest or involvement in the project other than a professional interest in terms of this Contract.

Clause 7.1.2
Add the following:
Key Persons shall be those individuals listed under "Key personnel" in Part C3.1 Scope of Work.

Clause 7.2.1:
Add the following:
The Service Provider shall provide appropriate Personnel for such time periods as required and shall enter all data pertaining to Personnel (Key personnel and additional personnel) on Schedules 11, 11A and 18, in Part T2.2: Returnable Schedules.

Clause 8.1:
Add the following:
The Service Provider is to commence the performance of the Services within **14** days of the Start Date.

Clause 8.4.1:
Delete "thirty (30)" in the second line of Clause (c) and replace with "fourteen (14)"
Delete "or" at the end of Clause 8.4.1(d) and add the following five clauses after Clause 8.4.1(e):
f) if the Service Provider has failed to provide the required insurances within the prescribed time;
g) if the Service Provider has committed a corrupt or fraudulent act during the tender process or the execution of the Contract;
h) if the Service Provider has benefitted from an official or other role player committing any corrupt or fraudulent act during the tender process or in the execution of the Contract;
i) if a material irregularity vitiates the procurement process leading to the conclusion of the contract, rendering the procurement process and the conclusion of the resulting contract unfair, inequitable, non-transparent, uncompetitive or not cost-effective, provided the Employer follows the processes as described in its SCM Policy; or
j) The implementation of the contract may result in reputational risk or harm to the City as a result of (inter alia):
    (i) reports of poor governance and/or unethical behaviour;
    (ii) association with known family of notorious individuals;
    (iii) poor performance issues, known to the Employer;
    (iv) negative social media reports; or
    (v) adverse assurance (e.g. due diligence) report outcomes.;

Clause 8.4.3(c):
Add the following:
The period of suspension under Clause 8.5 is not to exceed 6 months.

Clause 8.4.4:
Delete the content of this clause and replace with the following:
Upon termination of this Contract pursuant to Clauses 8.4.1 or 8.4.3, the Employer shall remunerate the Service Provider in terms of the Contract for Services satisfactorily performed prior to the effective date of termination and reimburse the Service Provider without adjustment to the agreed rates, sums or fees and without payment of any penalty or surcharge, including any pro-rata payment for partially completed Services, except in the case of termination pursuant to events (c) and (d) of Clause 8.4.1.

Add the following after clause 8.4.5:
Clause 8.4.6
In addition to anything else contained in this contract, the Employer may make either of the following elections to ensure its rights are protected and any negative impact on service delivery is mitigated in instances where the Service Provider has been liquidated:
a) accept a contractor's proposal (via the trustee / liquidator) to render delivery utilising the appropriate contractual mechanisms; or
b) terminate the contract, as the liquidator proposed contractor is deemed unacceptable to the employer, at any time by giving written notice to the contractor (via the trustee / liquidator).

Clause 9:
Delete the clause and replace with the following:

9.1 The Service Provider acknowledges that it shall not acquire any right, title or interest in or to the Intellectual Property of the Employer.

9.2 The Service Provider hereby assigns to the Employer, all Intellectual Property created, developed or otherwise brought into existence by it for the purposes of the contract, unless the Parties expressly agree otherwise in writing.

9.3 The Service Provider shall, and warrants that it shall:

9.3.1 not be entitled to use the Employer's Intellectual Property for any purpose other than as contemplated in this contract;

9.3.2 not modify, add to, change or alter the Employer's Intellectual Property, or any information or data related thereto, nor may the Service Provider produce any product as a result of, including and/or arising from any such information, data and Intellectual Property, and in the event that it does produce any such product, the product shall be, and be deemed in law to be, owned by the Employer;

9.3.3 not apply for or obtain registration of any domain name, trademark or design which is similar to any Intellectual Property of the Employer;

9.3.4 comply with all reasonable directions or instructions given to it by the Employer in relation to the form and manner of use of the Employer's Intellectual Property, including without limitation, any brand guidelines which the Employer may provide to the Service Provider from time to time;

9.3.5 ensure that its employees, directors, members and contractors comply strictly with the provisions of clauses 9.3.1 to 9.3.3 above; unless the Employer expressly agrees thereto in writing after obtaining due internal authority.

9.4 The Service Provider represents and warrants to the Employer that, in providing goods, services or both, as the case may be, for the duration of the contract, it will not infringe or make unauthorised use of the Intellectual Property rights of any third party and hereby indemnifies the Employer from any claims, liability, loss, damages, costs, and expenses arising from the infringement or unauthorised use by the Service Provider of any third party's Intellectual Property rights.

9.5 In the event that the contract is cancelled, terminated, ended or is declared void, any and all of the Employer's Intellectual Property, and any and all information and data related thereto, shall be immediately handed over to the Employer by the Service Provider and no copies thereof shall be retained by the Service Provider unless the Employer expressly and in writing, after obtaining due internal authority, agrees otherwise.

9.6 Copyright of all documents prepared for the project, and the patent rights or ownership in any plant, machine, item, system or process designed or devised, shall be vested with the Employer. Where copyright is vested in the Service Provider, the Employer shall be entitled to use the documents or copy them only for the purposes for which they are intended in regard to the Project and need not obtain the Service Provider's permission to copy for such use. Where copyright is vested in the Employer, the Service Provider shall not be liable in any way for the use of any of the information other than as originally intended for the Project and the Employer hereby indemnifies the Service Provider against any claim which may be made against him by any party arising from the use of such documentation for other purposes.

9.7 The ownership of data and factual information collected by the Service Provider and paid for by the Employer shall, after payment by the Employer, lie with the Employer.

9.8 The Employer shall have no right to use any documents prepared by the Service Provider whilst the payment of any fees and expenses due to the Service Provider in terms of the Contract is overdue.

Clause 11.1:
Add the following:
A Service Provider may not sub-contract any work which he has the skill and competency to perform, unless he has the Employer's prior approval in writing.

Clause 12.1.2:
Add the following:
Interim settlement of disputes is to be by **mediation.**

[redacted]

Clause 12.2.1:
Add the following:
In the event that the parties fail to agree on a mediator, the mediator is nominated by the Association of Arbitrators Southern Africa.

Clause 12.2.4:
Add the following:
Final settlement is by **litigation**.

Clause 12.3.3:

In the event that the parties fail to agree on an adjudicator, the adjudicator is nominated by the Association of Arbitrators Southern Africa.

Clause 13.1:
Add the following clause after Clause 13.1.3:

13.1.4 The Employer and the Service Provider shall enter into an agreement to complete the Services required for the Project in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993 and the Construction Regulations, 2014 promulgated thereunder.

An agreement is included in the Contract Document (C1.3 of Contract Data) and shall be completed and submitted to the Employer together with a letter of good standing from the Compensation Commissioner (if not insured with a licenced compensation insurer) within fourteen (14) days of the Start Date. The Service Provider shall ensure that any letter of good standing shall be timeously renewed in order that it remains in full force for the duration of the Contract.

Clause 13.4:
Delete the content of this clause and replace with the following:
Notwithstanding the terms of the Prescription Act No. 68 of 1969 (as amended) or any other applicable statute of limitation neither the Employer nor the Service Provider shall be held liable for any loss or damage resulting from any occurrence unless a claim is formally made within a liability period of five years, which period shall commence on the earlier of:
(a) Final completion of the construction contract.
(b) Suspension, postponement, expiry or termination of all construction contracts.
(c) Cancellation or termination of this Framework Contract.

Clause 13.7.3:
Add the following clause after Clause 13.7.2:

13.7.3 The Service Provider hereby indemnifies the Employer against all claims by third parties which arise out of or in connection with the Services rendered under this Contract and where such claims are the consequence of breach by the Service Provider to exercise reasonable professional skill, care and diligence in the exercising of its obligations.

Clause 14.5:
Add the following new clause after Clauses 14.4:

Clause 14.5: Tax Invoices
Section 20(1) of the Value Added Tax Act No. 89 of 1991 requires that a supplier (person supplying goods or services) who is registered as a VAT vendor issue to the recipient a tax invoice within 21 days of the date of a supply whether requested or not.

The Service Provider shall provide a tax invoice (VAT invoice) which shall be included with each account delivered to the Employer in terms of Clause 14. Failure by the Servicer Provider to provide a tax invoice (VAT invoice) timeously may delay payment by the Employer and no interest shall accrue.

Clause 14.6: More frequent payments
The Service Provider may submit a fully motivated application regarding more frequent payments to the Employer's Project Manager to be submitted to the Employer for consideration. Requests for more frequent payments will be considered at the sole discretion of the Employer and is not a right in terms of this contract.

Clause 15:
Add the following:
The interest rate will be the prime interest rate of the Employer's Bank at the time the amount is due.

Additional Clause:

Clause 16: Periodic review

16.1 This Agreement is valid from the Start Date outlined herein and is valid for the duration of the Framework Contract Period. This Agreement shall be reviewed once every three years; however, in lieu of a review during any period specified, the current Agreement will remain in effect. The Employer reserves the right to reduce or increase the Scope of Work according to the dictates of the budget, to terminate this contract, and/or to review and terminate this contract as is contemplated in Section 116(1)(b)(iii) of the Local Government: Municipal Finance Management Act 56 of 2003, without adjustment to the agreed rates, sums or fees and without payment of any penalty or surcharge in this regard. The Service Provider shall however be entitled to pro-rata payment for all services carried out in terms of any adjustment to the Scope of Work or, in the case of termination, payment for services delivered.

[redacted]

PROCEDURES FOR THE ALLOCATION OF WORKS PROJECTS

The procedures for the allocation of Works Projects, given below, are to be read in conjunction with Clause 4.8 in the Contract Data and the Process Diagram for Allocation of Works Projects below. These procedures include the development of a Works Project Brief, applying the tendered rates in order to arrive at a quote and compiling a preliminary programme and scope of works from the Service Provider.

The procedures are summarised under the steps below:

Step 1 The Employer's Framework Contract Manager together with the Employer's Project Manager for the project compiles a Works Project Brief and any terms and conditions associated for a particular works project. This Works Project Brief outlines the broad details of the project and includes, but is not limited to:

- Reference drawings, plans and other information.
- Time frames/milestones and a required completion date.

Step 2 The Employer issues the Works Project Brief to the designated representative of the "Winner". If, at this stage the "Winner" declines the work, the Employer reserves the right to consider the "Standby Service Provider 1" for this particular works project.

Step 3 If the "Winner" accepts the work, a project briefing session/site meeting is organised.

Step 4 After the project briefing session/site meeting, the Service Provider will provide the Employer with an estimated cost for the preparation of a Works Project proposal. Once accepted/acknowledged, the "Winner"/"Standby Service Provider" prepares and submits a Works Project Proposal (within the specified time) for approval by the Employer which includes the following documents:

i) The Scope of the works;
ii) A methodology - extent of methodology required will be dependent on scope of work (as advised by Employer);
iii) A programme of the work;
iv) Agreed time frames/milestones;
v) Proposed resources (project team);
vi) A list of CVs for each of the project team members, their company's name and the company's BBBEE status level;
vii) Resource-based costing; (ie. tasks, staff allocation, hours and rates)
viii) A cost proposal which includes the cost of any associated fees and services and an estimated cost of construction (where applicable).

Step 5 Following submission of these documents, the Employer will review the Works Project proposal.

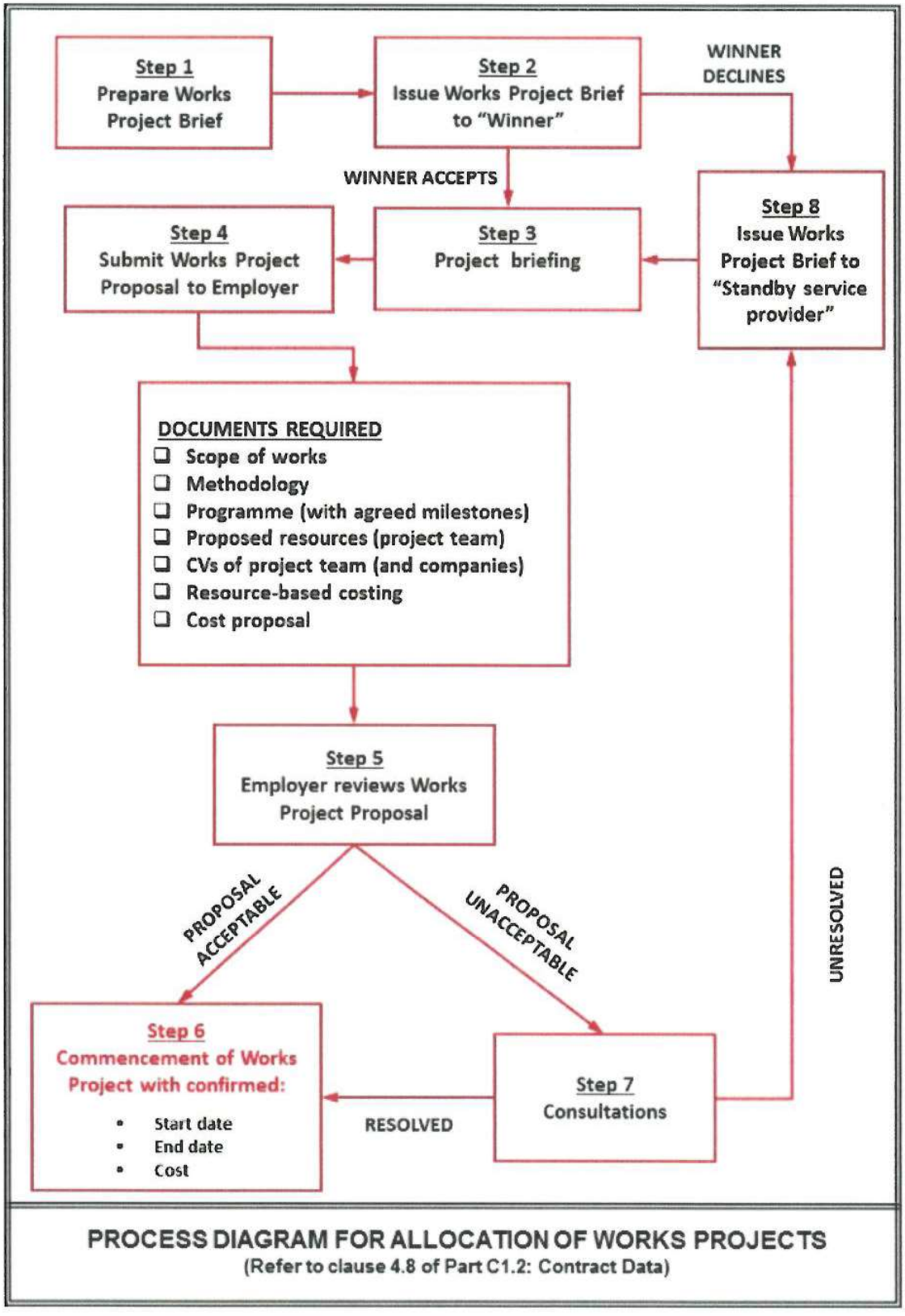
Step 6 If the Works Project proposal is satisfactory, the Employer will notify the "Winner" in writing to commence with the work. The Employer will confirm the start and end date for the Works Project and the associated cost. All work undertaken on the Works Project, prior to this approval, will be at the Service Provider's cost.

Step 7 If the Employer is not satisfied with the Works Project proposal, consultations will proceed between both parties (Employer and "Winner").

- If consultations are resolved, the Works Project proposal must be revised by the "Winner" and submitted to the Employer for final approval. On approval, the Employer will then inform the "Winner" in writing to commence with the work as for Step 6 above.
- If consultations are unresolved, the Employer reserves the right to consider appointing "Standby Service Provider 1". The Employer will inform the "Winner" in writing, giving reasons for the decision.

PROCEDURES FOR THE ALLOCATION OF WORKS PROJECTS (CONTINUED)	
Step 8	The Employer will issue the Works Project Brief to the "Standby Service Provider 1". • If, at this stage the "Standby Service Provider 1" declines the work, the Employer reserves the right to consider appointing "Standby Service Provider 2" or an alternative procurement method for this particular works project. • If the "Standby Service Provider 1" accepts the work, a Works Project Proposal will be submitted as per Step 4 above then Step 9 below.
Step 9	Following submission of the documents, the Employer will review the Works Project Proposal from "Standby Service Provider 1".
Step 10	If the Works Project proposal is satisfactory, the Employer will notify the "Standby Service Provider 1" in writing to commence with the work. The Employer will confirm the start and end date for the Works Project and the associated cost. All work undertaken prior to this approval will be at the Service Provider's cost.
Step 11	If the Employer is not satisfied with the Works Project proposal, consultations will proceed between both parties (Employer and "Standby Service Provider 1"). • If consultations are resolved, the Works Project proposal must be revised by the "Standby Service Provider 1" and submitted to the Employer for final approval. The Employer will then inform the "Standby Service Provider 1" in writing to commence with the work as for Step 10 above. • If consultations are unresolved, the Employer reserves the right to consider appointing "Standby Service Provider 2" or an alternative procurement method for this particular works project. The Employer will then inform the "Standby Service Provider 1" in writing, giving reasons for the decision.
Step 12	Proceed to Step 8 and repeat Steps 8, 9,10 and 11 with "Standby Service Provider 2"

[redacted]



PROCESS DIAGRAM FOR ALLOCATION OF WORKS PROJECTS
(Refer to clause 4.8 of Part C1.2: Contract Data)

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 194C/2020/21

TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN

C1.3 Occupational Health and Safety Agreement

AGREEMENT MADE AND ENTERED INTO BETWEEN THE CITY OF CAPE TOWN (HEREINAFTER CALLED THE "EMPLOYER") AND

BIGEN AFRICA SERVICES (PTY) LTD
(Service Provider/~~Mandatary~~/Company/~~CC~~ Name)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993 AS AMENDED.

I, [redacted] representing **BIGEN AFRICA SERVICES (PTY) LTD**, as an employer in its own right, do hereby undertake to ensure, as far as is reasonably practicable, that all work will be performed, and all equipment, machinery or plant used in such a manner as to comply with the provisions of the Occupational Health and Safety Act (OHSA) and the Regulations promulgated thereunder.

I furthermore confirm that ~~I am~~/we are registered with the Compensation Commissioner and that all registration and assessment monies due to the Compensation Commissioner have been fully paid or that ~~I~~/We are insured with an approved licensed compensation insurer.

COID ACT Registration Number: [redacted]

OR Compensation Insurer: n/a Policy No.: n/a

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him/them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Council's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any subcontractors employed by me will enter into an occupational health and safety agreement separately, and that such subcontractors comply with the conditions set.

I hereby declare that I have read and understand the appended Occupational Health and Safety Conditions and undertake to comply therewith at all times.

I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan.

Signed at [redacted] on the 6th day of October 2021.

[redacted]

[redacted]

Signed at Cape Town on the 22 day of October 2021

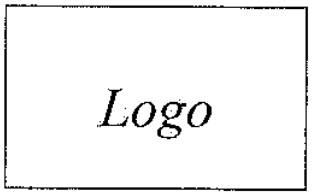
[redacted]

Witness

for and on behalf of
City of Cape Town

C1.4 Insurance Broker's Warranty

Pro Forma



Letterhead of Contractor's Insurance Broker

Date _____

CITY OF CAPE TOWN
City Manager
Civic Centre
12 Hertzog Boulevard
Cape Town
8000

Dear Sir

CONTRACT NO.: **194C/2020/21**

CONTRACT TITLE: **TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN**

NAME OF CONTRACTOR: _____

I, the undersigned, do hereby confirm and warrant that all the insurances required in terms of the abovementioned contract have been issued and/or in the case of blanket/umbrella policies, have been endorsed to reflect the interests of the CITY OF CAPE TOWN with regard to the abovementioned contract, and that all the insurances and endorsements, etc., are all in accordance with the requirements of the contract.

I furthermore confirm that all premiums in the above regard have been paid.

Yours faithfully

Signed: _____

For: _____

AON
Empower Results®

30 October 2020

TO WHOM IT MAY CONCERN

Dear Sir / Madam

PROOF OF INSURANCE LETTER

This letter serves to confirm that the following entity have the given Insurance Policy in place.

BIGEN AFRICA GROUP HOLDINGS (PTY) LTD AND BIGEN GLOBAL LTD

1.	Cover	:	**Professional Indemnity / Third Party Liability Insurance**
	Limit of Indemnity	:	[redacted] each and every claim
2.	Cover	:	**General Public Liability Insurance**
	Limit of Indemnity	:	[redacted] each and every claim
	Deductible	:	[redacted] each and every claim
	Period of Insurance	:	[redacted]
	Renewal Date	:	
	Retroactive date	:	
	Policy Number	:	[redacted]
	Insurers	:	iTOO Special Risks (Pty) Ltd on behalf of Hollard

We confirm that the above-mentioned policy is currently in full force and effect and is subject to the terms, subjectivities, conditions and exclusions of the policy wording.

Yours faithfully

[redacted]

AON PROFESSIONAL RISKS

AON

Date : 5 October 2021

CITY OF CAPE TOWN
City Manager
Civic Centre
L2 Hertzog Boulevard
Cape Town
8000

Dear Sir/Madam

Contract Number: **194C/2020/21**

Contract title: **Term tender for the provision of multidisciplinary professional services for the water and sanitation department of the city of Cape Town.**

NAME OF CONTRACTOR : **BIGEN AFRICA GROUP HOLDINGS (PTY) LTD**

Professional Indemnity Insurance

I, the undersigned, do hereby confirm and warrant that all the professional liability / indemnity insurances required in terms of the abovementioned contract have been issued and/or in the case of blanket / umbrella policies, have been endorsed to reflect the interests of the CITY OF CAPE TOWN with regard to the abovementioned contract, and that all the insurances and endorsements, etc, are all inaccordance with the requirements of the contract.

We confirm that the premium has been paid and that the policy is currently in full force and effect.

Yours faithfully

[redacted]

[redacted]
Business Unit Manager - Specialty
Professional Risks

Part C2: Pricing Data

Pages

C2.1 Pricing Assumptions ..... 25 – 26

C2.2 Schedules of Rates ..... 27 – 40

C2.1 Pricing Assumptions

Pricing Assumptions mean the criteria as set out below, read together with all Parts of this contract document, which it will be assumed in the contract, that the tenderer has taken into account when developing his prices.

1. The short descriptions given in the Schedules of Rates below are brief descriptions used to identify the activities for which prices are required. Typical Works Projects, for which rates are required, are contained in the Part C3.1: Scope of Work.

2. While it is entirely at the tenderer's discretion as regards pricing the Schedules of Rates below, tariffs of fees or indicative time based fee rates are gazetted from time to time by the built environment professional bodies. These are useful documents that will give tenderers some idea of industry norms against which they may compare their rates, sums and/or prices as applicable. Where applicable, tenderers must take into account the possible project types when pricing the Schedules of Rates.

   The tenderer's attention is drawn to the Municipal Cost Containment Regulations, 2019 (published in Government Gazette on 7 June 2019). Rates tendered must not exceed rates:
   (a) set out in the "Guide on Hourly Fee Rates for Consultants" issued by the Department of Public Service and Administration (DPSA rates); and
   (b) as prescribed by the body regulating the profession of the consultant.

3. For the purpose of the Schedules of Rates, the following words shall have the meanings hereby assigned to them:

   Unit: The unit of measurement for each item of work.
   Tendered Rate: The agreed payment per unit of measurement.
   Tendered Percentage: Service Provider's percentage mark-up.

4. The rates (excluding VAT) in the Schedules of Rates are to be fully inclusive rates for the work described under the several items. Such rates are to cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. The rates shall also include for all payments to administrative, clerical and secretarial staff used to support professional and technical staff.

5. Where a local office is required to be established by the Service Provider (in terms of clause 3.5 in C1.2: Contract Data), these establishment and operational costs must be included in the tendered time-based rates. These tendered rates shall also include any travel, accommodation, subsistence allowances, etc. paid by the Service Provider to his employees or sub-consultants for the duration of the local office establishment (see item 19 below) in fulfillment of the Contract.

6. A rate or percentage is to be entered against each item in the Schedules of Rates for the branches tendered for. If a nil rate (i.e. "nil" or "0.00") is entered against an item, it will be considered that there is no charge for that particular item. **An item against which no rate (or rates, in the case of rate categories if provided) is/are entered, or if anything other than a rate or a nil rate (for example, a zero, a dash or the word "included" or abbreviations thereof) is entered against an item, it will also be regarded as a nil rate having been entered against that item, i.e. that there is no charge for that item.**

   The tenderer may be requested to clarify nil rates, or items regarded as having nil rates, and the Employer may also perform a risk analysis with regard to the reasonableness of such rates.

7. The tenderer may not group a number of items together and tender one lump sum for such group of items.

8. **Tenderers are only to price their Branches of Preference as they have indicated on Returnable Schedule 26, in accordance with clauses C.1.6.1 and C.2.10.5 in Part T1.2 Tender Data.**

9. There are no quantities applicable to the tender during the tender submission stage. The rates provided in the Schedules of Rates shall be used in representative Works Projects for tender evaluation purposes in accordance with clause C.3.11.1 in Part T1.2: Tender Data.

10. Tenderers shall provide rates and mark-up percentages (excluding VAT) for each required rate for each item specified in every schedule in the Schedules of Rates applicable to the branch(es) tendered for (refer to clause C.2.10.5 in Part T1.2: Tender Data).

11. The procedures for the allocation of Works Projects are specified in Part C1.2: Contract Data (refer to clause 4.8).

12. All rates (except for travel expenses – see Item 18 below) shall be adjusted in terms of clause 3.16 of the Standard Professional Services Contract.

13. A higher category person undertaking lower category work will be reimbursed, in respect of time-based fees, at the lower category rate.

14. Tenderers are to note that only those recoverable expenses listed in the Schedules of Rates will be reimbursed to the Service Provider. No reimbursement of costs for subsistence, typing, printing/copying (other than reports and/or tender documents), communications or computer hardware and/or software will be made and these costs will be deemed to be included in tendered rates.

15. Payment will only be made for copies of reports and drawings when requested by the Employer, and all drafts shall be for the Service Provider's account.

16. Full time construction monitoring staff shall be reimbursed for travelling expenses, for either the return office to site or return home to site journeys, whichever is the lesser. Part time construction monitoring staff shall be reimbursed for either the return office to site or return alternate site to site journeys, whichever is the lesser. Construction monitoring staff engaged in work outside of normal working hours shall be reimbursed for the return home to site journey. Staff other than construction monitoring staff shall be reimbursed for all travelling expenses at the appropriate rate.

17. Unless otherwise agreed with the Employer, any air travel will be for the Service Provider's account.

18. The per kilometre rate for the reimbursement of travel expenses shall be limited to the ad-hoc duty transportation allowance for the Employer's own staff as adjusted from time to time. This rate is currently R 3.98/km (excluding VAT). The Service Provider must obtain the Employers prior approval before using a 4 x 4 vehicle for any site journeys. The rate for using a 4 x 4 vehicle is currently R 5.94/km (excluding VAT), and will be adjusted pro rata to the ad-hoc duty transport allowance for the Employer' own staff.

19. Travel time and all associated travel costs from the local office, as required in fulfillment of a works project, will be reimbursable. Travel time and all associated travel costs from outside the local office area to the local office (eg. air travel) will not be reimbursable.

20. Where fractions of a cent occur in calculations of prices and amounts, they shall be rounded up/down to the nearest whole cent.

21. Clause C.2.13.11(c) in Part T1.2: Tender Data shall be applicable to the submission of Schedules of Rates which have been priced electronically, and which the tenderer wishes to submit as a printed version with his/her tender in the place of a handwritten priced Schedules of Rates.

    If there is found to be any variance between the printed version and the original issued document, the original shall stand. However, where Addenda have been issued which amend the Schedules of Rates, then the printed Schedules of Rates shall take these into account.

    The pages of the issued Schedules of Rates should not be removed from the tender document.

22. Timesheets, drawn from the Service Providers' financial system, are to be submitted with each invoice to confirm the actual hours worked for each task.

23. The Service Provider will be reimbursed for the cost of preparing a Works Project proposal.

24. The payment for Construction Monitoring levels 1 and 2 will be paid at the appropriate Category rate for the particular discipline as tendered for, Stages 5 and 6 and Additional Services.

[redacted]

C2.2 Schedules of Rates

	Pages
Schedule No. 5: Wastewater Treatment Branch	28 - 40

SCHEDULE NO. 5: WASTEWATER TREATMENT BRANCH

The following Notes (W1 to W19) are applicable to the Wastewater Treatment Branch only:

Note W1: **Project Managers:** Category A: The required personnel must be a professionally registered (PrCPM or PMP or other proven equivalent registration) with over 20 (twenty) years of experience in project management. The Project Manager's expertise and experience must be nationally recognised and must provide advice at a level of specialisation where such advice is recognized as that of an expert in the area of project management.

Category B: The required personnel must be a professionally registered (PrCPM or PMP or other proven equivalent registration) with at least 10 (ten) years verifiable postgraduate experience in the project management of all works related to all types of construction works. The Project Manager is a person who bears the risk of the business or who takes responsibility for the projects and related liabilities of the practice and where his level of expertise and relevant experience is commensurate with the position and provides strategic guidance in planning and executing a project.

Category C: The required personnel must be a professionally registered (PrCPM or PMP or other proven equivalent registration) with at least 5 (five) years verifiable postgraduate experience in the project management of various types of similar works.

Category D: Need not be professionally registered and can be an Engineer, Technologist or Technician involved in project management of various types of works.

Note W2: **Construction Health and Safety Services:** The required personnel must be registered with the South African Council for the Project and Construction Management Professions (SACPCMP).

Professional Construction Health and Safety Agent: must be a professionally registered Construction Health and Safety Agent (PrCHSA).

Construction Health and Safety Manager: must be a registered Construction Health and Safety Manager (CHSM).

Construction Health and Safety Officer: must be a registered Construction Health and Safety Officer (CHSO).

Note W3: **Environmental Assessment Practitioner:** The required personnel must be registered with the Environmental Assessment Practitioner's Association of South Africa (EAPASA) or must meet the criteria for registration (and has applied for registration) with the Environmental Assessment Practitioner's Association of South Africa (EAPASA). The EAP must have at least 8 (eight) years verifiable experience in the undertaking of all environmental works related to all types of construction work similar to those listed in the Typical Works Projects lists. The EAP must have acted in a lead role in at least (2) two Full Scoping/Environmental Impact Assessment (EIA) reports and at least (5) five Basic Assessments of a project or type relevant to the Typical Works Projects list.

Note W4: **Environmental Control Officer:** The required personnel must have a relevant tertiary qualification and at least 3 (three) years verifiable experience of all works related to all types of construction works similar to those listed in Typical Works Projects lists.

Note W5: **Public Participation Practitioner (Lead):** The required personnel will be required to assist with Environmental Impact Assessments and must have at least 3 (three) years' experience in similar activities.

Note W6: **Environmental Auditor:** The required personnel must have an environmental auditing qualification and at least 3 (three) years' experience as a lead environmental auditor.

Note W7: **Heritage Assessment Practitioner:** The required personnel must have a postgraduate qualification in a heritage related field and at least 4 (four) years verifiable appropriate experience in heritage management issues likely to be encountered in all works similar to those listed in Typical Works Projects lists.

Note W8: **Freshwater ecologist:** The required personnel must be a registered professional with the South African Council for Natural Scientific Professions (SACNASP or other proven equivalent registration), with at least 8 (eight) years verifiable postgraduate experience in this specialised field and specifically providing aquatic ecological advisory services and undertaking all work necessary to acquire the authorisations (including General Authorisations or Water Use Licences) or permits required in terms of the National Water Act No. 36 of 1998.

[redacted]

[redacted]

Note W9: **Environmental Specialist (e.g. botanist, horticulturist, marine biologist, etc.):** The required personnel must be appropriately qualified and have a minimum of 8 (eight) years verifiable experience in the specialised field, 5 (five) of which must be proven and appropriate experience of local conditions relating to projects as stated in the Scope of Work.

Note W10: **Dam Safety specialist:** The required personnel must be a professionally registered Civil Engineer or Civil Engineering Technologist (PrEng or PrTechEng or other proven equivalent registration) with at least 8 (eight) years verifiable postgraduate experience and must be registered as an Approved Professional Person with the Department of Water and Sanitation.

Note W11: **Energy Optimisation specialist:** The required personnel must be professionally registered with a recognized body and have at least 10 years' verifiable postgraduate experience in the design of energy optimization systems incorporating new technologies

Note W12: **Fire Services specialist:** The required personnel must be registered with the Engineering Council of South Africa (ECSA) and have at least 8 (eight) years verifiable postgraduate experience, 3 (three) of which must be experience in the design, installation, testing and inspections of fire protection, detection, smoke extraction and suppression systems and who will be responsible for all fire services work required for each Works Project.

Note W13: **Geotechnical specialist:** The required personnel must be a professionally registered Civil Engineer or Civil Engineering Technologist (PrEng or PrTechEng or other proven equivalent registration) with at least 8 (eight) years verifiable postgraduate experience and must have a postgraduate qualification in the specialised field.

Note W14: **Hazardous Substance Management specialist (Major Hazardous Installations, working with hazardous materials):** The required personnel must be a qualified Chemical or Process Engineer with at least 8 (eight) years proven experience in this specialised field and must be: (i) accredited by the South African National Accreditation System (SANAS) in accordance with ISO/IEC 17020:2012; and (ii) approved by, or registered with, the Department of Labour as an Approved Inspection Authority (Type A) to conduct Major Hazardous Installations audits/inspections.

Note W15: **Hydraulic Engineer "B":** The required personnel must be a registered professional Civil Engineer or professional Civil Engineering Technologist (PrEng or PrTechEng or other proven equivalent registration), with at least 8 (eight) years postgraduate experience in the design of large diameter pipelines and in surge analyses and must have undertaken, and taken responsibility for, the design of a minimum of 5 (five) pipeline projects with a diameter larger than 300 mm.

Note W16: **Process Design Engineer "D":** The required personnel must be a registered professional Civil or Chemical Engineer (PrEng) or professional Civil or Chemical Engineer Technologist (PrTechEng) or other proven equivalent registration and have experience in the analyses and design of Wastewater Treatment Plants (10Mℓ/day or larger), **and** has either:
(i) a Postgraduate qualification in Wastewater Treatment with a minimum of 8 (eight) years verifiable experience in the analyses and design of Wastewater Treatment Plants, 5 (five) of which must be post Postgraduate experience, or
(ii) 20 (twenty) years verifiable experience in the analyses and design of Wastewater Treatment Plants.

Note W17: **Process Design Engineer "E":** In addition to the requirements for Process Design Engineer "D", the required personnel must have a minimum of three years of verifiable experience in **advanced wastewater treatment processes** (e.g. Tertiary treatment processes such as MBR, biological nutrient removal). This experience can run concurrently with the verifiable years of experience as required in terms of the requirements (i) and (ii) for Process Design Engineer "D".

Note W18: **Water Use Authorisation specialist:** The required personnel must be appropriately qualified and professionally registered in the applicable field and have at least 8 (eight) years proven experience in the specialist field.

Note W19: **Training Supervisor:** Refer to sub-clause 5.2.1.3, Training of Personnel in C3.1: Scope of Work.

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5.1: PLANNING, STUDIES, INVESTIGATIONS, ASSESSMENTS AND ADDITIONAL SERVICES

Time-based fees for Planning, Studies, Investigations, Assessments and Additional Services as described in the Scope of Work for the following disciplines:

Item No.	Activity Description	Unit	Tendered Rate
	CIVIL ENGINEERING SERVICES		
5.1.1.	Category A	Hour	0.00
5.1.2.	Category B	Hour	1 250.00
5.1.3.	Category C	Hour	850.00
5.1.4.	Category D	Hour	500.00
	STRUCTURAL ENGINEERING SERVICES		
5.1.5.	Category A	Hour	0.00
5.1.6.	Category B	Hour	1 000.00
5.1.7.	Category C	Hour	800.00
5.1.8.	Category D	Hour	500.00
	MECHANICAL ENGINEERING SERVICES		
5.1.9.	Category A	Hour	0.00
5.1.10.	Category B	Hour	1 000.00
5.1.11.	Category C	Hour	800.00
5.1.12.	Category D	Hour	0.00
	ELECTRICAL ENGINEERING SERVICES		
5.1.13.	Category A	Hour	0.00
5.1.14.	Category B	Hour	1 000.00
5.1.15.	Category C	Hour	800.00
5.1.16.	Category D	Hour	500.00
	ELECTRONIC ENGINEERING SERVICES		
5.1.17.	Category A	Hour	0.00
5.1.18.	Category B	Hour	1 000.00
5.1.19.	Category C	Hour	825.00
5.1.20.	Category D	Hour	0.00

			Negotiated Rate
Item No.	Activity Description	Unit	Tendered Rate
	QUANTITY SURVEYING SERVICES		
5.1.21.	Registered Professional Principals (Specialist)	Hour	0.00
5.1.22.	Registered Professional Principals (> 10 years experience)	Hour	1 150.00
5.1.23.	Registered Professional Principals (5 – 10 years experience)	Hour	0.00
5.1.24.	Registered Professional Principals (< 5 years experience)	Hour	0.00
5.1.25.	Salaried Personnel	Hour	500.00
	ARCHITECTURAL SERVICES		
5.1.26.	Principal (Specialist)	Hour	0.00
5.1.27.	Principal (>10 years experience)	Hour	1 000.00
5.1.28.	Principal (<10 years experience)	Hour	700.00
5.1.29.	Salaried staff (Associates and Managers)	Hour	0.00
5.1.30.	Salaried Staff (Registered architectural professionals performing work of an architectural nature and carrying direct responsibility for activities related to a project)	Hour	600.00
5.1.31.	Salaried Staff (Registered architectural professionals performing work of an architectural nature under direction and control)	Hour	0.00
5.1.32.	Salaried Staff (Staff performing work of an architectural nature and/or to support architectural work outputs under direction and control)	Hour	350.00
	PROJECT MANAGEMENT SERVICES		
5.1.33.	Category A (Note W1)	Hour	0.00
5.1.34.	Category B (Note W1)	Hour	1 250.00
5.1.35.	Category C (Note W1)	Hour	0.00
5.1.36.	Category D (Note W1)	Hour	750.00
	CONSTRUCTION HEALTH AND SAFETY SERVICES		
5.1.37.	Professional Construction Health and Safety Agent (Note W2)	Hour	0.00
5.1.38.	Construction Health and Safety Manager (Note W2)	Hour	0.00
5.1.39.	Construction Health and Safety Officer (Note W2)	Hour	0.00

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			Negotiated Rate
Item No.	Activity Description	Unit	Tendered Rate
	ENVIRONMENTAL AND HERITAGE SERVICES		
5.1.40.	Environmental Assessment Practitioner (Note W3)	Hour	800.00
5.1.41.	Environmental Assessment Practitioner Assistant	Hour	350.00
5.1.42.	Environmental Control Officer (Note W4)	Hour	0.00
5.1.43.	Public Participation Practitioner (Lead) (Note W5)	Hour	850.00
5.1.44.	Public Participation Practitioner (Administrative assistant)	Hour	560.00
5.1.45.	Environmental Auditor (Note W6)	Hour	850.00
5.1.46.	Heritage Assessment Practitioner (Note W7)	Hour	750.00
5.1.47.	Heritage Assessment Practitioner Assistant	Hour	450.00
5.1.48.	Freshwater Ecologist (Note W8)	Hour	1 000.00
5.1.49.	Environmental Specialist (e.g. botanist, horticulturist, marine biologist, etc.) (Note W9)	Hour	1 000.00
	LANDSCAPE ARCHITECTURAL SERVICES		
5.1.50.	Registered Professional Principal Landscape Architect (minimum 8 years' experience)	Hour	900.00
5.1.51.	Staff performing work of a landscape architectural nature and carrying direct responsibility for one or more specific activities related to a project	Hour	500.00

5.2: NORMAL SERVICES AND ADDITIONAL SERVICES (STAGES 1 TO 4)

Time-based fees for Normal Services Stages 1 to 4 and Additional Services as described in the Scope of Work for the following disciplines:

Item No.	Activity Description	Unit	Tendered Rate
	CIVIL ENGINEERING SERVICES		
5.2.1.	Category A	Hour	1 250.00
5.2.2.	Category B	Hour	1 250.00
5.2.3.	Category C	Hour	850.00
5.2.4.	Category D	Hour	500.00
	STRUCTURAL ENGINEERING SERVICES		
5.2.5.	Category A	Hour	0.00
5.2.6.	Category B	Hour	1 000.00
5.2.7.	Category C	Hour	800.00
5.2.8.	Category D	Hour	500.00
	MECHANICAL ENGINEERING SERVICES		
5.2.9.	Category A	Hour	0.00
5.2.10.	Category B	Hour	1 000.00
5.2.11.	Category C	Hour	800.00
5.2.12.	Category D	Hour	500.00
	ELECTRICAL ENGINEERING SERVICES		
5.2.13.	Category A	Hour	0.00
5.2.14.	Category B	Hour	1 000.00
5.2.15.	Category C	Hour	800.00
5.2.16.	Category D	Hour	500.00
	ELECTRONIC ENGINEERING SERVICES		
5.2.17.	Category A	Hour	0.00
5.2.18.	Category B	Hour	1 000.00
5.2.19.	Category C	Hour	825.00
5.2.20.	Category D	Hour	525.00

			Negotiated Rate
Item No.	Activity Description	Unit	Tendered Rate
	QUANTITY SURVEYING SERVICES		
5.2.21.	Registered Professional Principals (Specialist)	Hour	0.00
5.2.22.	Registered Professional Principals (> 10 years experience)	Hour	1 150.00
5.2.23.	Registered Professional Principals (5 – 10 years experience)	Hour	880.00
5.2.24.	Registered Professional Principals (< 5 years experience)	Hour	0.00
5.2.25.	Salaried Personnel	Hour	500.00
	ARCHITECTURAL SERVICES		
5.2.26.	Principal (Specialist)	Hour	0.00
5.2.27.	Principal (>10 years experience)	Hour	1 000.00
5.2.28.	Principal (<10 years experience)	Hour	700.00
5.2.29.	Salaried staff (Associates and Managers)	Hour	0.00
5.2.30.	Salaried Staff (Registered architectural professionals performing work of an architectural nature and carrying direct responsibility for activities related to a project)	Hour	600.00
5.2.31.	Salaried Staff (Registered architectural professionals performing work of an architectural nature under direction and control)	Hour	350.00
5.2.32.	Salaried Staff (Staff performing work of an architectural nature and/or to support architectural work outputs under direction and control)	Hour	250.00
	PROJECT MANAGEMENT SERVICES		
5.2.33.	Category A (Note W1)	Hour	0.00
5.2.34.	Category B (Note W1)	Hour	1 250.00
5.2.35.	Category C (Note W1)	Hour	0.00
5.2.36.	Category D (Note W1)	Hour	750.00
	CONSTRUCTION HEALTH AND SAFETY SERVICES		
5.2.37.	Professional Construction Health and Safety Agent (Note W2)	Hour	850.00
5.2.38.	Construction Health and Safety Manager (Note W2)	Hour	550.00
5.2.39.	Construction Health and Safety Officer (Note W2)	Hour	0.00

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Item No.	Activity Description	Unit	Tendered Rate
	ENVIRONMENTAL AND HERITAGE SERVICES		
5.2.40.	Environmental Assessment Practitioner (Note W3)	Hour	800.00
5.2.41.	Environmental Assessment Practitioner Assistant	Hour	350.00
5.2.42.	Environmental Control Officer (Note W4)	Hour	0.00
5.2.43.	Heritage Assessment Practitioner (Note W7)	Hour	750.00
5.2.44.	Heritage Assessment Practitioner Assistant	Hour	450.00
5.2.45.	Freshwater Ecologist (Note W8)	Hour	1 000.00
5.2.46.	Environmental Specialist (e.g. botanist, horticulturist, marine biologist, etc.) (Note W9)	Hour	1 000.00
	LANDSCAPE ARCHITECTURAL SERVICES		
5.2.47.	Registered Professional Principal Landscape Architect (minimum 8 years' experience)	Hour	900.00
5.2.48.	Staff performing work of a landscape architectural nature and carrying direct responsibility for one or more specific activities related to a project	Hour	500.00

5.3: NORMAL SERVICES AND ADDITIONAL SERVICES (STAGES 5 TO 6)

Time-based fees for Normal Services Stages 5 to 6 and Additional Services as described in the Scope of Work for the following disciplines:

Item No.	Activity Description	Unit	Tendered Rate
	CIVIL ENGINEERING SERVICES		
5.3.1.	Category A	Hour	0.00
5.3.2.	Category B	Hour	1 250.00
5.3.3.	Category C	Hour	850.00
5.3.4.	Category D	Hour	500.00
5.3.5.	Construction Monitoring: Level 3 - Category C person	Month	72 500.00
5.3.6.	Construction Monitoring: Level 3 - Category D person	Month	45 000.00
	STRUCTURAL ENGINEERING SERVICES		
5.3.7.	Category A	Hour	0.00
5.3.8.	Category B	Hour	1 000.00
5.3.9.	Category C	Hour	800.00
5.3.10.	Category D	Hour	500.00
5.3.11.	Construction Monitoring: Level 3 - Category C person	Month	70 000.00
5.3.12.	Construction Monitoring: Level 3 - Category D person	Month	45 000.00
	MECHANICAL ENGINEERING SERVICES		
5.3.13.	Category A	Hour	0.00
5.3.14.	Category B	Hour	1 000.00
5.3.15.	Category C	Hour	800.00
5.3.16.	Category D	Hour	500.00
5.3.17.	Construction Monitoring: Level 3 - Category C person	Month	0.00
5.3.18.	Construction Monitoring: Level 3 - Category D person	Month	45 000.00
	ELECTRICAL ENGINEERING SERVICES		
5.3.19.	Category A	Hour	0.00
5.3.20.	Category B	Hour	1 000.00
5.3.21.	Category C	Hour	800.00
5.3.22.	Category D	Hour	500.00
5.3.23.	Construction Monitoring: Level 3 - Category C person	Month	0.00
5.3.24.	Construction Monitoring: Level 3 - Category D person	Month	55 000.00

			Negotiated Rate
Item No.	Activity Description	Unit	Tendered Rate
	ELECTRONIC ENGINEERING SERVICES		
5.3.25.	Category A	Hour	0.00
5.3.26.	Category B	Hour	1 000.00
5.3.27.	Category C	Hour	825.00
5.3.28.	Category D	Hour	0.00
	QUANTITY SURVEYING SERVICES		
5.3.29.	Registered Professional Principals (Specialist)	Hour	0.00
5.3.30.	Registered Professional Principals (> 10 years experience)	Hour	1 000.00
5.3.31.	Registered Professional Principals (5 – 10 years experience)	Hour	0.00
5.3.32.	Registered Professional Principals (< 5 years experience)	Hour	0.00
5.3.33.	Salaried Personnel	Hour	415.00
	ARCHITECTURAL SERVICES		
5.3.34.	Principal (Specialist)	Hour	0.00
5.3.35.	Principal (>10 years experience)	Hour	1 000.00
5.3.36.	Principal (<10 years experience)	Hour	700.00
5.3.27.	Salaried staff (Associates and Managers)	Hour	0.00
5.3.38.	Salaried Staff (Registered architectural professionals performing work of an architectural nature and carrying direct responsibility for activities related to a project)	Hour	600.00
5.3.39.	Salaried Staff (Registered architectural professionals performing work of an architectural nature under direction and control)	Hour	0.00
5.3.40.	Salaried Staff (Staff performing work of an architectural nature and/or to support architectural work outputs under direction and control)	Hour	315.00
	PROJECT MANAGEMENT SERVICES		
5.3.41.	Category A (Note W1)	Hour	0.00
5.3.42.	Category B (Note W1)	Hour	1 250.00
5.3.43.	Category C (Note W1)	Hour	0.00
5.3.44.	Category D (Note W1)	Hour	750.00
	CONSTRUCTION HEALTH AND SAFETY SERVICES		
5.3.45.	Professional Construction Health and Safety Agent (Note W2)	Hour	850.00
5.3.46.	Construction Health and Safety Manager (Note W2)	Hour	550.00
5.3.47.	Construction Health and Safety Officer (Note W2)	Hour	450.00

Item No.	Activity Description	Unit	Tendered Rate
	ENVIRONMENTAL AND HERITAGE SERVICES		
5.3.48.	Environmental Assessment Practitioner (Note W3)	Hour	800.00
5.3.49.	Environmental Assessment Practitioner Assistant	Hour	350.00
5.3.50.	Environmental Control Officer (Note W4)	Hour	450.00
5.3.51.	Heritage Assessment Practitioner (Note W7)	Hour	0.00
5.3.52.	Heritage Assessment Practitioner Assistant	Hour	0.00
5.3.53.	Freshwater Ecologist (Note W8)	Hour	1 000.00
5.3.54.	Environmental Specialist (e.g. botanist, horticulturist, marine biologist, etc.) (Note W9)	Hour	1 000.00
	LANDSCAPE ARCHITECTURAL SERVICES		
5.3.55.	Registered Professional Principal Landscape Architect (minimum 8 years' experience)	Hour	900.00
5.3.56.	Staff performing work of a landscape architectural nature and carrying direct responsibility for one or more specific activities related to a project	Hour	500.00

5.4: ADDITIONAL AND SPECIALIST SERVICES - GENERAL

Time-based fees for Normal Services Stages 1 to 6 and Additional Services for the following disciplines:

			Negotiated Rate
Item No.	**Activity Description**	**Unit**	**Tendered Rate**
5.4.1	Land Survey Team – Field Work (civil topographical surveys or survey/measure existing structures)	Hour	600.00
5.4.2	Land Survey Team – Office Work (reduce field work, prepare CAD/GIS drawing/s, maps and reports)	Hour	500.00
5.4.3	CAD Draughting Operator	Hour	625.00
5.4.4	GIS technician	Hour	650.00
5.4.5	Registered Land Surveyor (cadastral surveys, property registration of sub-divisions)	Hour	750.00
5.4.6	Dam Safety specialist (Note W10)	Hour	850.00
5.4.7	Energy Optimisation specialist (Note W11)	Hour	1 000.00
5.4.8	Fire Service specialist (Note W12)	Hour	1 000.00
5.4.9	Geotechnical specialist (Note W13)	Hour	1 100.00
5.4.10	Hazardous Substances Management specialist (Major Hazardous Installations, working with hazardous materials) (Note W14)	Hour	1 400.00
5.4.11	Hydraulic Engineer "B" (Note W15)	Hour	1 350.00
5.4.12	Process Design Engineer "D" (Note W16)	Hour	1 350.00
5.4.13	Process Design Engineer "E" (Note W17)	Hour	1 350.00
5.4.14	Water Use Authorisation specialist (Note W18)	Hour	1 000.00
5.4.15	Training Supervisor (Note W19)	Hour	0.00

5.5: RECOVERABLE EXPENSES

Recoverable Expenses

Item No.	Activity Description	Unit	Sum
5.5.1.	Service Provider's cost for materials, equipment, testing and/or any other recoverable expenses not covered in the tender document will be claimed under this item for each individual works project during the Framework Contract Period.	Sum	

Provision for Service Provider's Mark-up on Recoverable Expenses claimed under item 5.5.1.

Item No.	Activity Description	Unit	Tendered Percentage
5.5.2.	Service Provider's percentage mark-up on item 5.5.1 above	%	5.00

5.6: DISBURSEMENTS/RECOVERABLE EXPENSES

Item No.	Description	Unit	Tendered Rate
	Recoverable expenses in respect of printing/plotting/copying, traveling expenses, etc. as specified below:		
5.6.1.	Size A0 (Monochrome)	No.	30.00
5.6.2.	Size A1 (Monochrome)	No.	20.00
5.6.3.	Size A2 (Monochrome)	No.	15.00
5.6.4.	Size A3 (Monochrome)	No.	1.55
5.6.5.	Size A4 (Monochrome)	No.	0.85
5.6.6.	Size A4 (Monochrome on colour paper)	No.	1.00
5.6.7.	Size A0 (Colour)	No.	50.00
5.6.8.	Size A1 (Colour)	No.	35.00
5.6.9.	Size A2 (Colour)	No.	25.00
5.6.10.	Size A3 (Colour)	No.	8.50
5.6.11.	Size A4 (Colour)	No.	3.50
5.6.12.	Laminated posters: Size A0 (Colour)	No.	90.00
5.6.13.	Laminated posters: Size A1 (Colour)	No.	65.00
5.6.14.	Laminated posters: Size A2 (Colour)	No.	50.00
5.6.15.	Laminated posters: Size A3 (Colour)	No.	30.00
5.6.16.	Compilation and binding of reports/tender documents, books of drawings, etc.	No.	20.00
5.6.17.	Electronic Data provided on a flash drive (4 GB).	No.	40.00
5.6.18.	Provision of Personal Computer	Month	0.00
5.6.19.	Travel expenses	km	3.98
5.6.20.	Travel expenses (4 X 4)	km	5.94

Part C3: Scope of Work

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CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 194C/2020/21

TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN

C3.1 Scope of Work

CONTENTS

1. INTRODUCTION AND EMPLOYER'S OBJECTIVE
2. DESCRIPTION OF THE SERVICES REQUIRED
3. EXTENT OF THE SERVICES
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5. PROJECT BRIEF
6. APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS
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14. INTELLECTUAL PROPERTY RIGHTS AND CONFIDENTIALITY

1. INTRODUCTION AND EMPLOYER'S OBJECTIVE

The Employer's objectives are to execute new developments and services and repairs, maintenance, alterations, additions and refurbishments to existing properties and services within the Water and Sanitation Department, for which it requires teams of Professional Services Providers. The department is divided into five (5) branches for this tender and the Employer intends to appoint a "Winner", a "Standby Service Provider 1" and a "Standby Service Provider 2" to provide multidisciplinary professional services for each branch.

Branch No.	Branch Name	Estimated professional fees to be spent per branch for the Framework Contract Period
A	Bulk Water	R100 000 000
B	Catchment Stormwater and River Management	R56 000 000
C	Engineering and Asset Management	R54 000 000
D	Reticulation Branch	R84 000 000
E	Wastewater Treatment	R100 000 000

Note 1: It is the intention of the Employer to use the successful Service Providers if and when required and the successful appointment under this contract does not guarantee any amount of work to be executed hereunder. The Employer reserves the right to plan and effect individual Works Projects at its sole discretion and to reduce or increase the estimated professional fees to be spent per branch according to the dictates of the budget.

Teams of Professional Service Providers are required to provide the professional services necessary to implement these projects, which, in terms of the Municipal Finance Management Act, 2003 and the Municipal Supply Chain Management Regulations, 2005, must be procured through a competitive bidding process.

The list of Typical Works Projects contained in Clauses 2.1, 2.2, 2.3, 2.4 and 2.5 (Description of the Services Required) is merely an outline of the scope of the Contract Works for each branch and shall not limit the work to be carried out by the Service Provider under this Framework Contract. The anticipated services to be provided in accordance with the Framework Contract Document for the Typical Works Projects are included in the Schedules of Rates.

It will be expected that a Project Leader (Project Manager or similar professional person) will lead the teams of Professional Service Providers and who will draw the required competencies from resources available to him (e.g. in his own company or sub-consultant) or from external approved Service Providers. The key personnel in the Service Provider teams shall comply with the competencies required irrespective of the nature of the teams and will be evaluated as a single entity

As this framework contract period will exceed the current budget cycle, it is subject to Section 33 of the Municipal Finance Management Act, 56 of 2003, and consequently the Employer must follow the required processes in terms of Section 33. These will run concurrently with the procurement process for this tender/contract. The Start Date of the Framework Contract is expected to be within 10 (ten) months of the tender closing date.

The Employer reserves the right to utilise, under exceptional circumstances, the Service Providers appointed for this framework contract to provide professional services to other Directorates/Departments within the City of Cape Town. These Works Projects will be issued subject to agreement between the Framework Contract Manager and the Service Provider and will be without prejudice.

2. DESCRIPTION OF THE SERVICES REQUIRED

2.1 NOT APPLICABLE

2.2 NOT APPLICABLE

2.3 NOT APPLICABLE

2.4 NOTAPPLICABLE

2.5 WASTEWATER TREATMENT BRANCH

The Service Provider is required to provide the professional services listed in Clauses 2.5.1 to 2.5.8 below to address the following Typical Works Projects which are anticipated to be executed during the duration of the contract. (Note: Projects requiring design will mostly include the construction phase)

- Additions, alterations, refurbishments and new building works.
- Upgrades and additions to road works, paving, sewer, stormwater, reticulation/minor water supply and ducts (electrical, instrumentation, telecommunication, etc.) at wastewater treatment works.
- Refurbishment, upgrade and new pump stations.
- Design of water retaining structures (settling tanks, balancing tanks, reactors) and other concrete structures.
- Bulk pipeline (for reuse and final effluent) design including route planning, vertical alignment and hydraulic analysis.
- Wastewater treatment process improvement and investigations.
- Online effluent monitoring.
- Renewal of licences at various Wastewater Treatment Works.
- Geotechnical investigations.
- Environmental investigations and studies.

Personnel requirements

The requirements of the various professional/technical personnel are contained in the Notes provided as a preamble to Schedule No.5: Wastewater Treatment Branch in Part C2.2: Schedules of Rates.

Verifiable experience referred to in the Notes is interpreted as experience in that particular service. Postgraduate years of experience is defined as working experience gained from the time of obtaining a baccalaureus/diploma qualification, as applicable.

2.5.1 Engineering Services (Civil, Structural, Mechanical, Electrical and Electronic)

2.5.1.1 Planning, Studies, Investigations and Assessments

The provision of all services described in Clause 3.1 of Board Notice 138 of 2015: Guideline for Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No 46 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below.

2.5.1.2 Normal Services

The provision of all services described in Clauses 3.2.1 to 3.2.6 (inclusive) of Board Notice 138 of 2015: Guideline for Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No 46 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below.

The Service Provider's attention is also drawn to the responsibilities of the designer of a structure in terms of the Construction Regulations, and shall comply with all requirements in this regard.

The Service Provider shall, apart from conducting his own activities in compliance with the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) and Construction Regulations 2014, ensure that any sub-consultants/contractors employed by the Service Provider also comply with the requirements of the Act and Regulations. The Service Provider shall enter into an agreement with the Employer in this regard before the commencement of any work related to this contract (Form C1.3, Occupational Health and Safety Agreement Part C1, refers).

2.5.1.3 Additional Services

(1) The provision of additional services pertaining to all stages of the project as anticipated in Clause 3.3.1 of Board Notice 138 of 2015: Guideline for Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No 46 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below, will be conducted based on the hourly rates tendered and upon the acceptance of a quotation for such services received from the Service Provider by the Employer.

(2) The provision of construction monitoring service as described in Clause 3.3.2 of Board Notice 138 of 2015: Guideline for Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No 46 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below, will be based on the rates tendered and upon the acceptance of a quotation for such services received from the Service Provider by the Employer.

2.5.2 Quantity Surveying Services

2.5.2.1 Building and Engineering Works Services

The provision of all applicable services described in Board Notice 170 of 2015: Guideline Tariff of Professional Fees in respect of Services rendered by Persons Registered in terms of the Quantity Surveying Profession Act, 2000 (Act No 49 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below.

2.5.3 Architectural Services

2.5.3.1 Standard Services

The provision of all services described in Clauses 1.1 of Board Notice 121 of 2015: Framework for the Professional Fees Guideline in respect of services provided by persons registered in terms of the Architectural Profession Act, 2000 (Act No 44 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below.

The Service Provider's attention is also drawn to the responsibilities of the designer of a structure in terms of the Construction Regulations, and shall comply with all requirements in this regard.

The Service Provider shall, apart from conducting his own activities in compliance with the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) and Construction Regulations 2014, ensure that any sub-consultants/contractors employed by the Service Provider also comply with the requirements of the Act and Regulations. The Service Provider shall enter into an agreement with the Employer in this regard before the commencement of any work related to this contract (Form C1.3, Part C1, refers).

2.5.3.2 Additional Services

(1) The provision of additional services pertaining to all stages of the project as anticipated in Clauses 1.2.1 of the 2015: Framework for the Professional Fees Guideline in respect of services provided by persons registered in terms of the Architectural Profession Act, 2000 (Act No 44 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below, will be conducted based on the hourly rates tendered and upon the acceptance of a quotation for such services received from the Service Provider by the Employer.

(2) The provision of special inspections (more intensive inspections and assessments of the works) as described in Clause 1.2.1.2(c) of the 2015 Professional Fees Guidelines as published by the South African Council for the Architectural Profession in terms of the Architectural Profession Act, 2000 (Act No 44 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below, which will be conducted based on the rates tendered and upon the acceptance of a quotation for such services received from the Service Provider by the Employer.

(3) Rezoning or change of use or amendments of town planning schemes.

2.5.4 Project Management Services

The provision of all services described in Clause 3.0 (Standard Services) and Clause 4.0 (Additional/Supplementary Services) of Board Notice 202 of 2011: Guideline Scope of Services and Recommended Guideline Tariff of Fees for Persons Registered in terms of the Project and Construction Management Professions, (Act 48 of 2000), as amended or amplified upon in the Project Brief (Clause 5) below.

2.5.5 Environmental Assessment Practitioner, Environmental Control Officer, Environmental Auditor and Heritage Assessment Practitioner

2.5.5.1 An independent Environmental Assessment Practitioner (EAP) is required to assess the project objectively, provide advice on the implementation of relevant environmental legislation and the requirements for any Environmental Assessments, undertake such assessments (where required), obtain the required Environmental Authorisation from the Environmental Authorities (where required) and develop an Environmental Management Programme (EMPr) for the project.

The EAP will be responsible for the planning, management, coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instruments introduced through regulations

An EAP may be required to act as a Review EAP on any project as instructed by the Employer. A Review EAP must fulfil the requirements of an EAP and must be registered with EAPASA.

When required, a Public Participation Practitioner will assist with any Environmental Impact Assessments or similar. The practitioner will be required to have at least 3-years' experience in similar activities.

2.5.5.2 An independent Environmental Control Officer (ECO) is required to monitor objectively the implementation of relevant environmental legislation, conditions of Environmental Authorisations (EAs or other environmental licences, permits) and the Environmental Management Plan for the project. The ECO must be on site prior to any site establishment and must form an integral part of the project team.

2.5.5.3 An independent Environmental Auditor is required to undertake environmental compliance audits at prescribed timeframes (prescribed by the competent authority) for the duration of construction related activities (and thereafter as required). These audits must comply with the requirements as prescribed in Regulation 34 of the EIA Regulations, 2014, as amended.

2.5.5.4 An independent Heritage Assessment Practitioner (HAP) may be required to assess a project objectively and provide advice on the implementation of the National Heritage Resources Act and Heritage Protection Overlay zoning where this is in place. The Heritage practitioner will be required to complete any Notifications of Intent to Develop, carry out any heritage impact assessments or develop heritage statements for the project, and assist with any required applications under heritage legislation as well as with the implementation of any heritage requirements put in place by the relevant authorities. It must be noted that the heritage practitioner should be appropriately experienced/qualified in the applicable fields of heritage such as built environment, archaeology or palaeontology as required.

2.5.6 **Health and Safety Services**

The provision of all services described in Clause 3 (Standard Services) and Clause 4 (Additional Related Services) as described in the **Guideline Scope of Services and Recommended Guideline Tariff of Fees for Construction Health and Safety Professionals Registered in terms of the Project and Construction Management Professions Act, 2000 (Act 48 of 2000), Board Notice 167 of 2019** as gazetted in government Gazette No. 42697, 13 September 2019, as amended or amplified upon in the Project Brief (Clause 5) below.

2.5.7 **Landscape Architectural Services**

All standard services as described in Stages 1 to 6 in the Amended Landscape Architectural Work Stages January 2011 published by the South African Council for the Landscape Architectural Profession (available on their website www.saclap.org.za), as amended or amplified upon in the Project Brief (Clause 5) below.

2.5.8 **Specialist Services**

Where the Employer requires specialist services from the Service Provider to comply with the Scope of Works, such services shall be provided by the Service Provider and shall be conducted on a Time and Cost basis. No additional services shall be undertaken without the approval of the Employer. Such specialist services shall include but are not limited to those listed in item 5.4 in C2.2: Schedules of Rates.

Where the Employer requires materials, equipment, testing and/or any other recoverable expenses not covered in the Scope of Work, such items will be provided by the Service Provider on a cost basis plus administration fee (refer to items 5.5.1 and 5.5.2 in C2.2: Schedules of Rates). Prior approval needs to be obtained from the Employer before these items may be procured.

3. EXTENT OF THE SERVICES

The work that is to be carried out under the contract is as provided for in the Schedules of Rates. However, if during the course of the Works Project, circumstances are found to differ from those anticipated, the Employer reserves the right to modify the scope of the Work Project to suit the prevailing circumstances.

Purchase Orders will be raised for each approved Works Project by the Employer. Such Works Project will be based on the Schedules of Rates or time based cost proposal submitted by the Service Provider and accepted by the Employer

The services to be provided in terms of this contract are inextricably linked to the Employer's budget, and it should be noted that while the Employer has every intention of completing the full Scope of Work making full use of the budget allocation, the Employer's budget is subject to periodic review. Should it become necessary to vary the scope of work or even suspend or terminate this contract, such variation, suspension or termination shall be dealt with in accordance with the provisions of the Standard Professional Services Contract as amended by the Contract Data.

4. USE OF REASONABLE SKILL AND CARE

The Service Providers' attention is drawn to the fact that the safety of persons and property is of paramount importance, closely followed by the minimisation of disruption and inconvenience to the local authority and public.

The Service Provider is therefore required to provide all aspects of the Service with all reasonable care, diligence and skill in accordance with generally accepted professional techniques and standards, and ensure that all legal requirements are met, and that all legal processes are adhered to.

5. PROJECT BRIEF

5.1 Terms of Reference

The Employer's objective is to:

(i) perform repairs, renovations, alterations and additions from time to time on some of the properties and services under its custodianship. These properties are located in all areas of the City of Cape Town.
(ii) execute new capital projects or services.

In order to design, procure and manage these projects the Employer requires various professional services to be provided. All services would be performed in complete compliance with the respective guidelines or tariffs of fees.

In general, it is the Employer's intention for the Service Provider to provide all stages of services (Stages 1-6) for a particular Works Project.

The Service Provider will furthermore be required to procure, on instruction from the Employer, any other specialist services as may be required for the successful implementation of this project, in terms of a sub-consultancy or sub-contract agreement.

5.2 Specific Requirements

5.2.1 Professional Consulting Services

5.2.1.1 Planning, Studies, Investigations and Assessments

The Service Provider shall carry out all of the studies and investigations necessary to determine a scope of work for each facility. A Preliminary report on the technical and financial feasibility of the project together with preliminary proposals in this regard shall be submitted.

The payment for Planning, Studies, Investigations and Assessments shall be at the tendered Time-Based fees for the professional services required.

5.2.1.2 Normal, Standard and Building & Engineering Works Services

Where a Quantity Surveyor is not part of the team for a particular Works Project, the cost estimates shall be completed by the other relevant disciplines for each Stage (as applicable) and the cost thereof shall be deemed to be included in the tendered rates for that discipline.

Stage 1: Inception

The Works Project Brief will generally have been agreed before the Works Project commences.

The Service Provider shall provide a Works Project Proposal, as detailed in clause 4.8 of Part C1.2: Contract Data, to the Employer for approval.

Stage 2: Concept and Viability

The Service Provider shall provide a preliminary design.

Stage 3: Design Development

The Service Provider shall provide those services necessary to finalise the detailed scope of work, design, specifications, detailed estimate and updated programme for the project and shall co-ordinate the input from all members of the professional team in this regard. The Project Leader shall be responsible for ensuring that the time, cost and quality parameters are adhered to. The Project Leader's name for the particular Works Project must be clearly stated in the Works Project Proposal.

The Service Provider shall be responsible for all service enquiries, wayleave applications and obtaining the necessary authority or permission from the relevant service authorities to carry out all work in terms of this project. All applications in this respect must be carried out timeously.

The design development shall take cognisance of all design requirements as may be imposed by the local authority or any other authority whose services are impacted upon by the proposed work.

The design development shall consider and minimise disruption to the working environment of staff adjacent to renovated areas. A form of screening at public entrances, corridors and private working areas must be considered to minimise loss of privacy and entry into the properties and those immediately adjacent.

A set of documents, consisting of a scope of work, draft plans/drawings and specifications shall be submitted to the Employer for comment and approval prior to going out to tender. All plans must be thoroughly checked by the Service Provider's Project Leader prior to submission. On approval of the detail design drawings and council approved drawings, two sets of paper prints of each must be submitted to the Employer for signature. One set will be kept by the Employer and the other returned to the Service Provider. All other prints issued thereafter shall carry the words "Initial version signed on *(date)*" at the signature location in the title block.

A revised cost estimate shall be submitted to the Employer.

Stage 4: Documentation and Procurement

The Service Provider shall provide those services necessary for the preparation of procurement documentation, advertising of tenders, and the evaluation of tenders received. The Service Provider shall confirm the Employer's procurement (Supply Chain Management) policies and procedures prior to the preparation of any procurement documentation.

The construction contract document shall be prepared in the Construction Industry Development Board's (CIDB) or non-CIDB format (as applicable). The Service Provider shall confirm with the Employer which Conditions of Contract (GCC, FIDIC, JBCC, National Treasury, etc.) will be applicable to each Works Project. The Service Provider shall liaise with the Employer during the preparation of the contract document to determine any other specific requirements that the Employer may have in this regard.

Specifications shall include, inter alia, Health and Safety Specifications, and an Environmental Management Plan.

The Service Provider should note that it is the Employer's preference that all payment items must be measured out in the Bills of Quantities, as opposed to the use of provisional sums or prime cost items. Should provisional sums or prime cost items of greater value than R300 000 (incl. VAT) be included in the Bills of Quantities, the Service Provider will be expected to follow an open competitive process in respect of these items, on behalf of the contractor. This will include the preparation of a tender document, advertising and receiving tenders, and evaluating same on behalf of the contractor.
A draft contract document shall be submitted to the Employer for scrutiny at least four weeks prior to the Bid Specification Committee meeting taking place. The Service Provider shall attend Bid Specification Committee meetings (as required) prior to the finalisation of the contract document and the advertising of tenders. All comments of the committee shall be incorporated into the final contract documents.

Once the contract document has been finalised, the Service Provider shall supply the Employer with an electronic copy of the documents and drawings.

The Service Provider shall be responsible for providing the Employer with the required number of copies of plans and tender documents for tender purposes (both hard copy and on a flash drive).

The Service Provider shall, during the tender period, attend and preside over a tender clarification meeting, and respond to all queries received during this period. This will include the preparation of any Notice to Tenderers

Once tenders close, the Service Provider shall prepare a technical evaluation report for consideration by the Employer's Bid Evaluation Committee (BEC). The Service Provider may be required to attend the BEC Meeting and may be asked to respond to any queries the committee may raise and follow up on any issues requiring attention/action.

Once approved by the Employer, the Service Provider shall facilitate the signing up of the construction contract, in consultation with the Employer.

Working drawings, including reinforcement drawings and Bending Schedules, shall be finalised as part of Stage 4 unless otherwise agreed with the Employer.

Stage 5: Contract Administration and Inspection

The Service Provider shall provide those services as required to manage, administer and monitor the construction contract, including co-ordination of the inspection of the works by the other members of the professional team, as and when necessary.

The service to be provided shall include, where necessary detailed drawings prepared by the contractor for manufacture and installation.

The Service Provider shall prepare any further plans, designs and drawings (over and above the tender drawings), which may be necessary for the execution of the works. The preparation of any shop drawings required for manufacture and installation, or the detailed checking of such, where prepared and submitted by the construction contractor, shall form part of the normal services to be provided by the Service Provider.

The Service Provider shall also, in particular, ensure that all payment certificates, preferential procurement and labour returns, and contract participation expenditure reports are timeously submitted.

Stage 6: Close-Out

The Service Provider shall complete the project close-out as described in the guideline scope of services.

As-built plans/drawings shall be submitted to the Employer in electronic format (preferably .dwg, otherwise .dxf) as well as one complete set of paper prints.

The Service Provider shall also compile a project close-out report for submission to the Employer, which includes, *inter alia*, technical details of the project, the project team, project cost, completion dates, construction details and design changes, delays and the reasons thereof, problems encountered and the solution thereof, conclusions and recommendations.

5.2.1.3 Additional Services

Payment for the following services will be deemed to be included in the tendered percentage rates unless specifically itemised or excluded:

Service Enquiries/Wayleave Applications

The Service Provider shall be responsible for all initial service enquiries/wayleave applications from the various service authorities, the requirements of whom shall be carried through into the designs and tender documentation as necessary. Payment for this service will be time-based.

Preferential Procurement and Targeted Participation

The Service Provider shall provide all services related to preferential procurement and targeted participation in respect of the construction contract (as set out in the Employer's example CIDB documents for Civil (or other) construction contracts including but not limited to:

(a) the incorporation into the contract documentation of:

  i) preferential procurement requirements in respect of B-BBEE and, if applicable, local production and content, and
  ii) targeted participation goals in respect of targeted labour and/or resources.

(b) the monitoring and verification of compliance with (i) and (ii) in (a) above during the construction contract (including the receiving and collation of documentary evidence submitted by the contractor in this regard).

Construction Monitoring

Construction monitoring will be required for many projects, requiring the full time input of experienced individuals on site. The level of construction monitoring required will be stated in the Works Project Brief.

The Service Provider shall, when called upon to do so by the Employer, submit a fully motivated proposal for such construction monitoring to the Employer for approval.

The proposal shall name the individual(s) proposed, provide details of their experience in relation to the particular Works Project, the anticipated duration of their involvement and the monthly cost in respect thereof. The cost shall include all benefits, overhead charges and profit as well as any overtime costs, if applicable. Construction monitoring staff will be paid over the year end break, if applicable.

The Service Provider's proposal may be accepted or rejected at the sole discretion of the Employer.

Act as the Employer's agent in terms of the Occupational Health and Safety Act

The Service Provider, in submitting a tender for this professional services contract, shall be deemed to have acknowledged acceptance of the appointment as the Employer's Construction Health and Safety Agent in terms of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) and the Construction Regulations, 2014, should the Employer accept the tender. The Service Provider shall, as such, execute all of the duties of the client as contemplated in the Construction Regulations.

The Service Provider's attention is also drawn to the responsibilities of the designer of a structure in terms of the Construction Regulations, and shall comply with all requirements in this regard.

The Service Provider shall, apart from conducting his own activities in compliance with the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) and Construction Regulations, 2014, ensure that any sub-consultants/contractors employed by the Service Provider also comply with the requirements of the Act and Regulations. The Service Provider shall enter into an agreement with the Employer in this regard before the commencement of any work related to this contract (Form C1.3, Part C1, refers).

Environmental Control Officer

Where required for a specific Works Project, the Service Provider shall provide from within its own organisation or, if necessary, appoint as a sub-consultant, a suitably experienced Environmental Control Officer (ECO) whose responsibilities shall be as follows:

(a) to prepare a project specific Construction Environmental Management Programme (specification) (EMPr) for inclusion into the construction tender/contract documents.
(b) to assist the Employer's Agent/Engineer/Principal Agent in ensuring that any necessary permits are obtained.
(c) to convey the contents of the EMPr to the contractor's site team, and discuss the contents in detail with the contractor, as well as to conduct induction and environmental awareness training sessions to the contractor's and sub-contractor's workforces, as and when necessary.
(d) to monitor and verify that the EMPr is adhered to at all times, and to inform the Employer's Agent/Engineer/Principal Agent if the specifications are not followed.
(e) to review construction method statements for approval by the Employer's Agent/Engineer/Principal Agent.
(f) to assist the Employer's Agent/Engineer/Principal Agent and contractor in finding environmentally responsible solutions to problems.
(g) to provide a report on environmental compliance issues (with photographic evidence, if applicable) at the monthly site meetings or any other meetings that may be called regarding environmental matters.
(h) to ensure that all activities/incidents concerning the environment are recorded in the site records, to monitor and review such records and advise the Employer's Agent/Engineer/Principal Agent of any action necessary.
(i) to inspect the site and surrounding areas with regard to compliance with the EMPr.
(j) to advise the Employer's Agent/Engineer/Principal Agent on the imposition of penalties or fines specified in the EMPr, or the removal of person(s) and/or equipment not complying with the specifications.

The frequency of site visits/inspections shall be as and when necessary, but not less than at monthly intervals.

Training of Personnel

The Employer may require that the Service Provider provide training and transfer knowledge to one or more of the Employer's staff, described as a Trainee for the purposes of this Contract.

The preferred situation will be that the Trainee is incorporated into the Service Provider's team for a particular Works Project. The Trainee should be given specific design tasks to complete under the supervision of an experienced and relevant engineer, referred to as the Supervisor.

The Supervisor will be required to:

- Guide and instruct the Trainee in the execution of the tasks
- Monitor the Trainee's progress
- Provide monthly feedback on the Trainee's progress

Payment will be made for the effective time spent by the engineer in the supervision and training of the Trainee. Payment will also be made for the provision of a Personal Computer (PC) for the sole use by the Trainee for the execution of the task(s) allocated to the Trainee. The PC shall be appropriate for the task(s) and have the necessary software required for the execution of the task(s). Appropriate payment items have been allowed in the Schedules of Rates.

5.3 Time Frames/Milestones

Milestones set by the Employer typically revolve around budget cycles and the need to spend the budget in any given financial year. The important milestones are therefore the financial year ends (30 June each year) and the Service Provider will be expected to establish a project programme, in consultation with the Employer that takes cognisance of the budgets available and the budget cycles. Once agreed, the Service Provider is expected to ensure that the programme is adhered to, and to intervene timeously if necessary.

The Service Provider shall submit a revised programme as and when required by the Employer.

5.4 Places for the Performance of Specific Tasks

It is anticipated that the majority of the work involved in the reporting, preliminary design and detail design and tender stages will be undertaken at the Service Provider's local office. The construction monitoring service will take place at the site of the project.

The Service Providers personnel will however be required to attend meetings in the Cape Metropolitan area or at the location of the Works Projects as and when required, and it may be necessary to carry out inspections at the contractor's (or sub-contractor's) yard(s) wherever they may be.

5.5 Reporting Requirements

Aside from the three particular reports required in terms of the brief above (the Preliminary Technical & Feasibility Report, Tender Evaluation Report and Project Close-Out Report), the Service Provider may be required to prepare, or contribute to, ad hoc reports on specific aspects of the project.

Furthermore, the Service Provider shall submit monthly cost reports to the Employer showing expenditure in respect of both the Service Provider's appointment and the construction contractor's contract; together with the anticipated spend to the end of the financial year in question.

The Conceptual Planning Report shall be submitted within the time frames agreed to by the Employer.

The Tender Evaluation Report shall be submitted to the Employer within two weeks of tenders for the construction works having been received.

A preliminary Project Close-Out Report shall be submitted to the Employer within three months of the Certificate of Completion having been issued, which shall be updated as necessary and re-submitted within three months of the issue of the Final Approval Certificate.

6. APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS

The Service Provider shall ensure that cognisance of all applicable national and international standards are taken in the execution of his/her own work and that of his/her sub-consultants in the design and compilation of specifications for this project. International standards should only be used where no national standards exist, or where it is the norm to use or refer to international standards.

7. APPROVALS

The Service Provider shall be responsible for obtaining the following approvals:

(a) Approval of the implementation programme from the Employer,
(b) Approval of the conceptual and preliminary designs from the Employer,
(c) Approval of the project from Heritage Western Cape (*if required*),
(d) Approval (authorisation) of the project from the Department of Environmental Affairs and Development Planning (*if required*),
(e) Approval of the detail design, drawings and contract document from the Employer,
(f) Wayleave approval from all service authorities,
(g) Approval of the Engineers Representative from the Employer,
(h) In respect of time based services, approval of the allocation of staff from the Employer,
(i) Approval for the employment of specialist sub-consultants from the Employer,
(j) Approval of plans from Department of Planning and Building Development within City of Cape Town in accordance with the National Building Regulations and Building Standards Act (Act 103 of 1977) and all necessary certifications,
(k) Approval for the employment of specialist sub-consultants and their applicable costs/hourly rates from the Employer,
(l) Approval of the accommodation of traffic plans from the Traffic Manager.

Notwithstanding any approval received from the Employer, the Service Provider shall remain responsible for all work carried out by the Service Provider and its sub-consultants in terms of this contract.

8. PROCUREMENT

8.1 Preferential Procurement

The Works shall be executed in accordance with the conditions associated with the granting of preferences detailed in the **Preference Schedule** where preferences are granted in respect of B-BBEE contribution.

Financial penalties, as described in the **Preference Schedule**, shall be applied in the event that the Service Provider is found to have breached the conditions contained in the **Preference Schedule** (unless proven to be beyond the control of the Service Provider).

Notwithstanding the application of penalties, the Service Provider's attention is drawn to other sanctions that may be applied by the Employer (listed in the **Preference Schedule**) with due consideration to the circumstances.

8.2 Monitoring the use of sub-contractors/sub-consultants and joint ventures

Notwithstanding the restriction on sub-contracting as described on the **Preference Schedule**, it is recognised that sub-contracting is an integral part of the built environment, which the conditions of contract make provision for.

In order, however, to comply with the requirements of the **Preference Schedule**, the Service Provider shall submit to the Employer's Agent, on a monthly basis, a **B-BBEE Sub-contract Expenditure Report**. The format of this report is provided in Annex 2 attached.

The Service Provider shall submit to the Employer's Agent documentary evidence in accordance with the applicable codes of good practise of the B-BBEE status level of every sub-contractor employed by the Service Provider. Until such time as documentary evidence as described above has been submitted to the Employer's Agent, a sub-contractor shall be deemed to be a non-compliant contributor.

The Service Provider shall furthermore, on the written request of the Employer's Agent, provide documentary evidence showing the value of work sub-contracted to any or all of the sub-contractors employed by the Service Provider.

8.3 Forms for contract administration

The Service Provider shall complete, sign and submit with each monthly statement for payment, the following updated returns (the format of which are attached in C3.2 Annexes as amended from time to time):

- B-BBEE Sub-contract Expenditure Report (Annex 1)
- Joint Venture Expenditure Report (Annex 2)

The **B-BBEE Sub-contract Expenditure Report** is required for monitoring the prime contactor's compliance with the sub-contracting conditions of the **Preference Schedule**.

The Joint Venture Expenditure Report is required for monitoring the joint venture's compliance with the percentage contributions of the JV partners as tendered, where the joint venture has been awarded preference points in respect of its consolidated B-BBEE scorecard.

In respect of Annexes 1 and 2, the Employer shall, in addition to any other sanctions available to it, apply the financial penalties applicable to breach of preferencing conditions in the **Preference Schedule** Preference Schedule in Part T2.2 Returnable Schedules. In the case of joint ventures (Annex 2), the contractor shall prove his compliance with item 6) in Section 2 of the Preference Schedule by providing a consolidated scorecard at his own cost on instruction from the Employer's Agent.

9. FORMAT OF COMMUNICATION

All requests for formal approval from the Employer, or any other body, shall be submitted in writing in hardcopy format. Interim payment claims shall be submitted in the same format, accompanied by an original tax invoice. Ad-hoc communication between the Employer and the Service Provider may be conducted per facsimile or in electronic format (e-mail). Electronic copies shall also be submitted for the record.

All plans and contract documents submitted for approval shall be in hardcopy and electronic format.

10. KEY PERSONNEL

More than the minimum number of key personnel stated below may be required in order to fulfil the Service Provider's obligations.

KEY PERSONNEL						
NOTE: Refer to Clauses 2.1, 2.2, 2.3, 2.4 and 2.5 in Part C3.1: Scope of Work for Typical Works Projects lists.						
Service	**Profession**	**Branch**				
		Bulk Water	**Catchment, Stormwater and River Management**	**Engineering and Asset Management**	**Reticulation**	**Wastewater Treatment**
Civil Engineering	A minimum of 2 (two) registered **professional Civil Engineers (PrEng) or professional Civil Engineering Technologists (PrTechEng) or other proven equivalent registration**, each with at least 8 (eight) years verifiable postgraduate experience in the analysis, design, control and monitoring of civil and infrastructural works similar to those listed in Typical Works Projects lists.	✓	✓	✓	✓	✓
Structural Engineering	A minimum of 2 (two) registered **professional Structural Engineers (PrEng) or professional Structural Engineering Technologists (PrTechEng) or other proven equivalent registration**, each with at least 8 (eight) years verifiable postgraduate experience in the analysis, design, control and monitoring of structural works pertaining to all types of construction work similar to those listed in Typical Works Projects lists.	✓	✓	✓	✓	✓
Mechanical Engineering	A minimum of 2 (two) registered **professional Mechanical Engineers (PrEng) or professional Mechanical Engineering Technologists (PrTechEng) or other proven equivalent registration**, each with at least 8 (eight) years verifiable postgraduate experience in the analysis, design, control and monitoring of all works related to all types of construction work similar to those listed in Typical Works Projects lists.	✓	✓	✓	✓	✓
Electrical Engineering	A minimum of 2 (two) registered **professional Electrical Engineers (PrEng) or professional Electrical Engineering Technologists (PrTechEng) or other proven equivalent registration**, each with at least 8 (eight) years verifiable postgraduate experience in the analysis, design, control and monitoring of all works related to all types of construction work similar to those listed in Typical Works Projects lists.	✓	✓	✓	✓	✓
Electronic Engineering	A minimum of 1 (one) registered **professional Electronic Engineer (PrEng) or professional Electronic Engineering Technologist (PrTechEng) or other proven equivalent registration**, with at least 8 (eight) years verifiable postgraduate experience in PLC and SCADA programming and in the analysis, design, control and monitoring of all works related to all types of construction work similar to those listed in Typical Works Projects lists.	✓	✓	✓	✓	✓

KEY PERSONNEL						
NOTE: Refer to Clauses 2.1, 2.2, 2.3, 2.4 and 2.5 in Part C3.1: Scope of Work for Typical Works Projects lists.						
Service	Profession	Branch				
		Bulk Water	Catchment Stormwater and River Management	Engineering and Asset Management	Reticulation	Wastewater Treatment
Process Design Engineer "A"	A minimum of 1 (one) **Process Design Engineer** who is a registered **professional Civil or Chemical Engineer (PrEng) or professional Civil or Chemical Engineering Technologist (PrTechEng) or other proven equivalent registration**, who has experience in the analyses and design of Water Treatment Plants (10Mℓ/day or larger), **and** has either: (i) a Postgraduate qualification in Water Treatment with a minimum of 8 (eight) years verifiable experience in the analyses and design of Water Treatment Plants, 5 (five) of which must be post Postgraduate experience, or (ii) 20 (twenty) years verifiable experience in the analyses and design of Water Treatment Plants.	✓	*	*	*	*
Process Design Engineer "D"	A minimum of 1 (one) **Process Design Engineer** who is a registered **professional Civil or Chemical Engineer (PrEng) or professional Civil or Chemical Engineering Technologist (PrTechEng) or other proven equivalent registration**, who has experience in the analyses and design of Wastewater Treatment Plants (10Mℓ/day or larger), **and** has either: (i) a Postgraduate qualification in Wastewater Treatment with a minimum of 8 (eight) years verifiable experience in the analyses and design of Wastewater Treatment Plants, 5 (five) of which must be post Postgraduate experience, or (ii) 20 (twenty) years verifiable experience in the analyses and design of Wastewater Treatment Plants.	*	*	*	*	✓
Hydraulic Engineer "A"	A minimum of 1 (one) registered **professional Civil Engineer (PrEng) or professional Civil Engineering Technologist (PrTechEng) or other proven equivalent registration**, with at least 8 (eight) years postgraduate experience in the design of large diameter pipelines and in surge analyses and must have undertaken, and taken responsibility for, the design of a minimum of 5 (five) pipeline projects (including surge analyses) with a diameter larger than 500mm.	✓	*	*	*	*
Hydraulic Engineer "B"	A minimum of 1 (one) registered **professional Civil Engineer (PrEng) or professional Civil Engineering Technologist (PrTechEng) or other proven equivalent registration**, with at least 8 (eight) years postgraduate experience in the design of pipelines and in surge analyses and must have undertaken, and taken responsibility for, the design of a minimum of 5 (five) pipeline projects (including surge analyses) with a diameter larger than 300mm.	*	*	*	✓	✓

KEY PERSONNEL						
NOTE: Refer to Clauses 2.1, 2.2, 2.3, 2.4 and 2.5 in Part C3.1: Scope of Work for Typical Works Projects lists.						
Service	Profession	Branch				
		Bulk Water	Catchment Stormwater and River Management	Engineering and Asset Management	Reticulation	Wastewater Treatment
Hydraulic Engineer "C" (Hydrology and open channel hydraulics and engineering)	A minimum of 1 (one) registered **professional Civil Engineer (PrEng) or professional Civil Engineering Technologist (PrTechEng) or other proven equivalent registration**, with at least 8 (eight) years verifiable postgraduate experience in this specialised field and specifically rainfall-runoff-water quality modelling, river (and floodplain) and open channel flow modelling, stormwater network modelling, analysis of river and rainfall data for flood management and stormwater harvesting, hydraulic engineering structures, and Sustainable Urban Drainage Systems (SUDS).	*	✓	*	*	*
Geohydrologist	A minimum of 1 (one) Geohydrologist **(PrSciNat) or other proven equivalent registration**, with at least 10 (ten) years verifiable postgraduate experience in Groundwater management. The Geohydrologist must have at least a NQF level 8 (including an Honours degree) in geohydrology or similar earth/water science field of expertise and must have extensive knowledge in geohydrological investigations, wellfield development and operations, and monitoring (including water quality).	✓	*	*	*	*
Quantity Surveying	A minimum of 1 (one) registered **professional Quantity Surveyor (PrQS) or other proven equivalent registration**, with at least 8 (eight) years verifiable postgraduate experience in providing a quantity surveying service for all types of construction work similar to those listed in Typical Works Projects lists.	✓	*	✓	✓	✓
Architectural	A minimum of 1 (one) registered **professional Architect (PrArch) or professional Senior Architectural Technologist (Pr SArch T) or other proven equivalent registration**, with at least 8 (eight) years verifiable postgraduate experience in providing an architectural service for all types of construction work similar to those listed in Typical Works Projects lists.	✓	*	✓	✓	✓
Project Management	A minimum of 1 (one) registered **professional Construction Project Manager (PrCPM) or Project Management Professional (PMP) or other proven equivalent registration**, with at least 8 (eight) years verifiable postgraduate experience in the management of all works related to all types of construction works similar to those listed in Typical Works Projects lists.	✓	✓	✓	✓	✓

KEY PERSONNEL						
NOTE: Refer to Clauses 2.1, 2.2, 2.3, 2.4 and 2.5 in Part C3.1: Scope of Work for Typical Works Projects lists.						
Service	**Profession**	**Branch**				
		Bulk Water	**Catchment Stormwater and River Management**	**Engineering and Asset Management**	**Reticulation**	**Wastewater Treatment**
Occupational Health and Safety	A minimum of 1 (one) **professional Construction Health and Safety Agent (PrCHSA)** registered with the **South African Council for Project and Construction Management Professions (SACPCMP)** with the necessary competencies and resources to act as the Employer's Agent in terms of the Occupational Health and Safety Act.	✓	✓	✓	✓	✓
Environmental	A minimum of 1 (one) **Environmental Assessment Practitioner (EAP)** registered with the **Environmental Assessment Practitioner's Association of South Africa (EAPASA)** or who meets the criteria for registration (and has applied for registration) with the **Environmental Assessment Practitioner's Association of South Africa (EAPASA).** The EAP must have at least 8 (eight) years verifiable experience in the undertaking of all environmental works related to all types of construction work similar to those listed in the Typical Works Projects lists. The EAP must have acted in a lead role in at least (2) two Full Scoping/Environmental Impact Assessment (EIA) reports and at least (5) five Basic Assessments of a project or type proven to the Typical Works Projects list.	✓	✓	✓	✓	✓
Freshwater Ecologist	A minimum of 1 (one) **Freshwater Ecologist** registered with the **South African Council for Natural Scientific Professions (SACNASP) or other proven equivalent registration** with at least 8 (eight) years verifiable postgraduate experience in this specialised field and specifically providing aquatic ecological advisory services and undertaking all work necessary to acquire the authorisations (including General Authorisations or Water Use Licences) or permits required in terms of the National Water Act No. 36 of 1998.	✓	✓	*	✓	✓

Key personnel will be expected to operate out of the local office, as the exigencies of this project require.

Should it become necessary to replace any of the key personnel listed at the time of tender during the course of this contract, they may only be replaced by individuals with similar or better qualifications and experience, who satisfy the minimum requirements and then only with the written approval of the Employer. (Note that 'verifiable experience' is interpreted as experience in that particular service. This must be clearly demonstrated in the CVs provided. Postgraduate years of experience is defined as experience gained from the time of obtaining a baccalaureus qualification).

11. MANAGEMENT MEETINGS

11.1 Management Meetings

During the initial stages of projects (Planning, Studies, Investigations and Assessments; Inception; Concept and Viability and Design Development) the Service Provider will be expected to attend monthly management meetings with the Employer's project management team (PMT), convened for the purpose of managing these projects. The Project Leader will present the Service Provider's proposals at these meetings, and take direction from the PMT in this regard.

11.2 Community/Stakeholder Meetings

The Service Provider will also be expected to contribute to and attend community/stakeholder meetings, presenting proposals at these forums, and taking cognisance of input from the various interested and affected parties in the conceptual and detail design development, where possible. It is anticipated that it will be necessary to continue with community/stakeholder participation through the construction period, including to respond to any individual queries/concerns that may be raised.

11.3 Supply Chain Management (SCM) Committee Meetings

During the course of the Documentation and Procurement stage, the Service Provider shall attend and participate in the SCM Bid Specification and Bid Evaluation Committee meetings in order to present the contract document and tender evaluation report to the Employer.

The Service Provider shall plan to attend two BSC meetings and two BEC meetings. The number of meetings can vary depending on the complexity and extent of interest shown in the tender.

11.4 Site/Technical Meetings

During the Contract Administration and Inspection stage of these projects, the Service Provider shall convene and run monthly site meetings at which the Employer and contractor will be present, as well as any technical meetings with the contractor as may be required to ensure the successful implementation of these projects.

11.5 Ad-hoc Meetings

The Service Provider will be expected to attend ad-hoc meetings from time to time, with the Employer, stakeholder groups, or service or other authorities, in order to address specific issues as and when the need arises.

11.6 General

The Service Provider shall be represented at all meetings by at least one of the key personnel, preferably the Project Leader. The Service Provider shall provide secretarial services (for record keeping purposes) at all management, community/stakeholder, site/technical, and ad-hoc meetings.

All charges in respect of the provision of secretarial services shall be deemed to be included in the tendered Time-based fees.

12. CLAIMS FOR PAYMENT

The Service Provider may submit interim claims for payment (invoices) as the work in terms of this contract progresses, but not more frequently than at monthly intervals. All interim claims must be accompanied by an original tax invoice. Payment will be effected within 30 days of the date on the tax invoice.

13. EMPLOYER'S RIGHT TO RECOVER COSTS

The Employer reserves the right to recover, by way of a deduction from any amount due to the Service Provider, any additional cost which the Employer incurs arising out of non-performance/negligence of the Service Provider.

14. INTELLECTUAL PROPERTY RIGHTS AND CONFIDENTIALITY

Any intellectual property (including but not limited to source documents, designs, maps, drawings, reports, statistics, recordings, photography, computer software, electronic documents, etc.) that may result from the project will be the sole property of the City of Cape Town.

In alignment with the above, any information arising from or within a project will be treated as confidential and no information is to be divulged, provided to or mentioned to persons or parties not involved in the project except where permission is granted in writing for that specific purpose.

[redacted]

C3.2 Annexes

ANNEX 1: SCHEDULE OF DEVIATIONS

ANNEX 2: SCHEDULE 11: KEY PERSONNEL [Extracted from tender submission]

ANNEX 3: SCHEDULE 11(A): SPECIFIC EXPERIENCE OF KEY PERSONNEL [Extracted from tender submission]

ANNEX 4: SCHEDULE 12: SUPPORT RESOURCES [Extracted from tender submission]

ANNEX 5: SCHEDULE 18: ADDITIONAL PERSONNEL SCHEDULE [Extracted from tender submission]

ANNEX 6: SCHEDULE 19: ORGANISATIONAL STRUCTURE [Extracted from tender submission]

ANNEX 7: SCHEDULE 23: PREFERENCE SCHEDULE TO BE USED IN TERMS OF THE AMENDED CODES FOR MEASURING BROAD-BASED BLACK ECONOMIC EMPOWERMENT IN THE CONSTRUCTION SECTOR (2017) [Extracted from tender submission]

ANNEX 8: B-BBEE SUB-CONTRACT EXPENDITURE REPORT

ANNEX 1

SCHEDULE OF DEVIATIONS

[redacted]

Schedule of Deviations

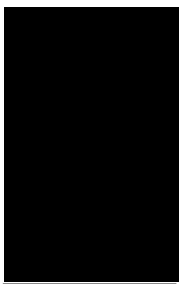
Notes:

1. The extent of deviations from the tender documents issued by the Employer before the tender closing date is limited to those permitted in terms of the conditions of tender.
2. A tenderer's covering letter shall not be included in the final contract document. 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.
3. 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.
4. 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.

NONE

By the duly authorised representatives signing the Contract Agreement, the Employer and the Service Provider agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents, as well as any confirmation, clarification or changes to the terms of the offer agreed to by the Employer and the Service Provider 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 Service Provider of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.



ANNEX 2

SCHEDULE 11: KEY PERSONNEL

SCHEDULE 11: KEY PERSONNEL

The tenderer is referred to Clause C.2.1.4.2 of the Tender Data and shall insert in the spaces provided below a list of the key personnel required to be in the employment of the tenderer or a specialist consultant/firm, in order for the tenderer to be eligible to submit a tender for this project. Copies of all applicable signed undertakings from specialist consultants/firms having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of sub-consultant agreements must be attached to this Schedule. The details of the proposed key personnel and a Curriculum Vitae for each individual shall be appended to Schedule 11A. Different individuals must be identified for each of the key personnel listed below.

The Service Provider may propose to use the same key personnel for different branches when tendering to provide multidisciplinary professional services for more than one branch.

SERVICE	NAME	EMPLOYER (COMPANY)
Civil Engineering Services (Minimum 2 professionals)	[redacted]	Bigen Africa Services (Pty) Ltd
		Bigen Africa Services (Pty) Ltd
		Bigen Africa Services (Pty) Ltd
Structural Engineering Services (Minimum 2 professionals)	[redacted]	Bigen Africa Services (Pty) Ltd
		Bigen Africa Services (Pty) Ltd
Mechanical Engineering Services (Minimum 2 professionals)		Bigen Africa Services (Pty) Ltd
	[redacted]	Bigen Africa Services (Pty) Ltd
Electrical Engineering Services (Minimum 2 professionals)	[redacted]	Bigen Africa Services (Pty) Ltd
		Bigen Africa Services (Pty) Ltd
Electronic Engineering Services (Minimum 1 professional)	[redacted]	DJJC Consulting Engineers CC [1]
Process Design Engineer "A" (Minimum 1 professional) **(Bulk Water Branch only)**	[redacted]	Bigen Africa Services (Pty) Ltd
Process Design Engineer "D" (Minimum 1 professional) **(Wastewater Treatment Branch only)**	[redacted]	Bigen Africa Services (Pty) Ltd [1]
Hydraulic Engineer "A" (Minimum 1 professional) **(Bulk Water Branch only)**	[redacted]	C2D Engineering (Pty) Ltd [1]

Hydraulic Engineer "B" (Minimum 1 professional) **(Reticulation and Wastewater Treatment Branches only)**	[redacted]	Bigen Africa Services (Pty) Ltd
Hydraulic Engineer "C" (Hydrology and open channel hydraulics and engineering) (Minimum 1 professional) **(Catchment Stormwater and River Management Branch only)**	[redacted]	Bigen Africa Services (Pty) Ltd
Geohydrologist (Minimum 1 professional) **(Bulk Water Branch only)**	[redacted]	GEOSS South Africa (Pty) Ltd [1]
Quantity Surveying Services (Minimum 1 professional)	[redacted]	Bigen Africa Services (Pty) Ltd
Architectural Services (Minimum 1 professional)	[redacted]	Osmond Lange Architects & Planners (Pty) Ltd [1]
Project Management Services (Minimum 1 professional)	[redacted]	Bigen Africa Services (Pty) Ltd
Occupational Health and Safety Services (Minimum 1 professional)	[redacted]	Safe Working Practice Cape Town (Pty) Ltd [1]
Environmental Assessment Practitioner (Minimum 1 professional)	[redacted]	Infinity Environmental (Pty) Ltd [1]
Freshwater Ecologist (Minimum 1 professional) **(Bulk Water, Catchment Stormwater and River Management, Reticulation and Wastewater Treatment Branches only)**	[redacted]	Freshwater Consulting cc [1]

[1] See Letters of Commitment attached

SIGNED ON BEHALF OF TENDERER: ..... [redacted]

[redacted]

ANNEX 3

SCHEDULE 11(A): SPECIFIC EXPERIENCE OF KEY PERSONNEL

TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN

SCHEDULE 11A: KEY PERSONNEL

The tenderer is referred to Clause C.2.1.4.2 of the Tender Data and shall insert in the spaces provided below details of the key personnel required to be in the permanent employment of the tenderer at the close of tender. Alternatively, signed undertakings from specialist consultants/firms having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of sub-consultant agreements, will be acceptable.

Different individuals must be identified for each of the services required below. The Service Provider may propose to use the same key personnel for different branches when tendering to provide multidisciplinary professional services for more than one branch. The Curriculum Vitae (CV) of each individual must be appended to this schedule.
Note: For the Process Design Engineer "A" and "D", the Hydraulic Engineer "A" and "B" and the Environmental Assessment Practitioner, particular information is required as part of Schedule 11A.

CIVIL ENGINEERING SERVICES (MINIMUM 2 PROFESSIONALS)

1. CIVIL ENGINEER/TECHNOLOGIST (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty)Ltd Principal	B.Eng (Civil) 1995	ECSA Pr Eng [redacted]	25

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] of Bigen Africa has obtained his B Eng degree in civil engineering in 1995 and is registered as a professional Civil Engineer (PrEng) with ECSA. He has 25 years verifiable post graduate experience in civil engineering, bulk water and sewer pipelines and reticulations, pump stations, and components. He has been involved in numerous related projects in varying capacities and capital values, and a number of these projects received a national award. This includes the design and implementation of bulk water supply and sanitation projects and hydraulic flow in closed conduits. His key experience includes the hydraulic analyses and design of bulk water supply and sewer pipelines for both gravity and pumping systems, pump station design, design of outfall sewers, design and rehabilitation of sewer mains using trenchless technology, detail hydraulic analysis of water supply networks and schemes, design and evaluation of open channel flow conduits, and implementation of small membrane water treatment works. Apart from his design experience, he also has extensive experience in compilation of contract documentation (with exposure to the SAICE, FIDIC and NEC3 general conditions of contract), tender procurement, contract administration (including direct involvement in assessment of contractual claims, and dispute resultion based on adjudication and arbitration), project management and client liaison. Apart from attending some international conferences as part of his continued professional development, he also presented some papers at national conferences/courses.

Specialisation:

- Hydraulic analysis and design of water and sewer pipelines
- Design of gravity and rising mains, including pump stations
- Hydraulic analyses of water supply systems and networks
- Design of rehabilitation of sewer mains using trenchless technology

Experience in civil engineering, pipelines, hydraulic systems, pump stations, and components:

Henk's project involvement as Civil Engineer is summarised below. More detail related to these projects are provided in his CV.

Bulk water supply related projects:

- Bulk Water Main from Kempton Park Reservoir (2019 – 2020)
  - Carry out a design review of the planned 1.2 km x 500 mm diameter HDPE pipeline from the Kempton Reservoir to the water distribution network. (Client: City of Ekurhuleni)
- Phase 2 of the Rising Main from Bredell Reservoir to Kempton Park Reservoir (2019 – 2020)
  - Design the second phase of the rising main comprising a 2.4 km x 800 mm diameter HDPE pipeline from Bredell Reservoir to Kempton Park Reservoir. Responsible for compilation of project specifications and tender documentation, tender process, compilation of construction drawings, and contract administration to follow. (Client: City of Ekurhuleni)
- Upgrading the Bulk Water Supply to Gansbaai - Phase 2 (2016 – 2017)
  - Design second phase of upgrading the bulk water supply to Gansbaai comprising a 1.85km x 355mm diameter PVC-O bulk water main, including compilation of project specifications and tender documentation, tender process, compilation of construction drawings, and contract administration. (Client: Overstrand

[redacted]

- Investigation and assessment of the Langa Interceptor Sewer and design of the rehabilitation of the 1350 mm high x 900 mm wide egg-shaped sewer, including an in-situ cast reinforced concrete sandtrap. (Client: City of Cape Town)

Pump Stations:

- Inspection and Assessment of Raw Sewage Pump Stations (2020 – ongoing)
  - Carry out inspections and assessment of 56 raw sewage pump stations for the City of Cape Town varying in size from small pump stations to large pump stations with a capacity of up to 6 660 m³/hr and an electrical driver installation of up to 1 MW. (Client: City of Cape Town)
- Upgrading the Potsdam – New Inlet Works Raw Sewage Pump Station WWTW (2020)
  - Design review engineer responsible for the design review of the raw sewage pump station at the new inlet works with a design capacity of 5 417 m³/hr comprising 4 no x 160 kW pump sets. (Client: City of Cape Town)
- Upgrading the Potsdam – MBR Treated Effluent Pump Station for 2024 Train (2020)
  - Design engineer responsible for the preliminary design of the new treated effluent pump station for the 2024 Train with a design capacity of 5 417 m³/hr comprising 6 no x 630 kW pump sets. (Client: City of Cape Town)
- Upgrading the Potsdam – UF Treated Effluent Pump Station for 2008 Train (2020)
  - Design engineer responsible for the preliminary design of the new treated effluent pump station for the 2008 Train with a design capacity of 2 708 m³/hr comprising 6 no x 300 kW pump sets. (Client: City of Cape Town)
- Assessment of decreased yield from the horizontal well system and input on a trial pipeline to the sea for upgrading the Bulk Seawater Abstraction Pump Station (2018). (Client: Velddrift Salt Company)
- Construction of the Belhar CBD Main Sewer Pump Station (2016 – 2018)
  - Upgrading of the Elsenburg water supply system and sewer network (2015 - 2018). (Client: Western Cape Design engineer responsible for the design of the new Belhar CBD Main Sewer Pump Station with a design capacity of 240 m³/hr as part of the Belhar CBD Development, including the design of a 2.3 km x 315 mm diameter rising main and associated isolating, air and scour valve chambers as well as the discharge chamber / drop structure. (Client: Calgro M3 Developments (Pty) Ltd, end user: City of Cape Town)
- Construction of the Belhar CBD Internal Sewer Pump Station (2016 – 2018). (Client: Calgro M3 Developments (Pty) Ltd)
- Construction of the Cape Flats 3 Bulk Sewer (2012 – 2015). (Client: City of Cape Town)
- Upgrading the Bulk Seawater Abstraction Pump Station (2015). (Client: Velddrift Salt Company)
- Pearly Beach Booster Jockey Pump (2011). (Client: Overstrand Municipality)
- Eersterivier Housing Development Sewage Pump Station and Rising Main (2011).(Client: Department of Human Settlement)
- Pearly Beach Booster Pump Station (2008 – 2009). (Client: PSP Properties)
- Upgrading of the Bulk Seawater Supply to Velddrift Salt Company (2006 – 2011). (Client: Velddrift Salt Company)
- Kersbosstrand Development (2006). (Client: Dolphin Whisper Trading 10 (Pty) Ltd)
- Thesen Island Sewage Pump Stations commissioning and Completion Inspection (2003 – 2004). (Client: Thesen Island Development Company (Pty) Ltd)
- Durbanville Business Park Sewage Pump Station and Rising Main (2004). (Client: Interactive Trading 377)
- Eastford Pump Station Vibration Analysis (2003)
- Novos Bairros Development in Luanda, Angola - Phase 2 (2002).(Client: Tilca Infrastructure Corporation (Pty) Ltd)
- Upgrading of Crown Gardens Pump Station - Phase 2 (2002). (Client: Johannesburg Water (Pty) Ltd)
- Design of sump pump for Rom Bin (2002). (Client: Ingwe Coal Corporation Ltd)
- Investigation on supplementing Parktown and Berea reservoirs utilising Hector Norris booster pump station and G15 bulk water main (2001). (Client: Johannesburg Water (Pty) Ltd)
- Upgrading of Crown Gardens Pump Station - Phase 1 (2001). (Client: Southern Metropolitan Local Council)
- Refurbishment of Orange Farm Pump Station (2001). (Client: Southern Metropolitan Local Council)

Water treatment related projects

- Villiersdorp Water Treatment Works Refurbishment, Western Cape (2019)
  - Project manager responsible for the planning and implementation of the refurbishment of the existing 3 Mℓ/day water treatment works at Villiersdorp. (Client: Theewaterskloof Municipality)
- Val de Vie Water Treatment Works (2017 – 2018)
  - Planning and design an emergency 1.5 Mℓ/day ultrafiltration water treatment works to supply potable water to both Val de Vie and Pearl Valley Estates, including liaison with authorities, coordinating drilling and testing of boreholes, construction of the pipelines from the boreholes to the water treatment works, implementation of the transfer pumps, facilitating quotation and tender process and associated evaluation, compilation of construction drawings, coordinating electrical supply and SCADA, and overall project management. (Client: Val de Vie Developments (Pty) Ltd)
- Upgrading the Pre-treatment Process for the Pearly Beach Water Treatment Works (2015): (Client: Overstrand Municipality)
- Upgrading Baardskeerdersbos Water Supply (2012 – 2014)
  - Design upgrading water supply to Baardskeerdersbos including equipping of two boreholes, construction of a pipeline from the boreholes to a 185 kℓ/day new water treatment works, construction of the new water treatment works, upgrading the telemetry system, and upgrading of some pipelines in the Baardskeerdersbos internal water reticulation. (Client: Overstrand Municipality)
- De Kelders Reverse Osmosis Water Treatment Works (2010 – 2012)
  - Design a new 1.6 Mℓ/day reverse osmosis water treatment works with ultrafiltration pre-treatment for De Kelders. (Client: Overstrand Municipality)
- Pearly Beach Water Ultrafiltration Treatment Works (2009 – 2010)
  - Design a new 2.3 Mℓ/day ultrafiltration water treatment works for Pearly Beach. (Client: Overstrand Municipality)

Water storage reservoirs:

2. CIVIL ENGINEER (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty) Ltd Principal Engineer	B.Eng (Civil) 2000	ECSA Pr Eng [redacted]	20 Years

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] is a qualified professional registered civil engineer with close to 20 years of experience on multi-disciplinary infrastructure projects implemented for public entities and private companies. He gained his knowledge through exposure to the consulting and construction industries, and his main expertise areas are infrastructure development, bulk water conveyance, project -, contract -, construction -, and risk management. He has worked on several large scale housing projects specifically in the Eastern Cape and Western Cape Provinces in South Africa.

He has experience with water resource engineering and bulk water conveyance, hydro-electric civil infrastructure refurbishment, dam inspections and road rehabilitation projects. Rens also received his NQF 7 competency certificate for the development and promotion of labour intensive construction strategies, and did several fellowship courses relating to contract law and arbitration.

He holds a bachelor of civil engineering degree from the University of Pretoria and has completed several career enhancing courses.

Specialisation:

- Infrastructure Development
- Bulk Water Conveyance
- Project Management
- Contract Management
- Construction Management
- Risk Management

Experience and Comparable Projects:

Water, Storm water and Sanitation Experience:

- Luano City Integrated Development, Luano Grande Properties, Lubumbashi, Haute Katanga, Democratic Republic of Congo, 2017 – 2021: Project Principal/Engineer - Design and implementation of civil infrastructure, including roads and associated storm water for the integrated development comprising commercial, residential and light industrial sites. Total development is 200ha. The project entailed the development of various precincts within the development. Project value for the JsW precinct was R156.75 million.
- The Acres Housing Development, Val de Vie, Paarl, South Africa, 2020 – 2021: Contract Engineer - Design of civil and electrical infrastructure for the 164 unit upmarket housing estate in Paarl. The development was done in three phases. The works included internal water and sewer reticulation as well as a sewer pump station. Total project value was R100million.
- Belhar CBD Phase 2 Integrated Housing Development for 3,100 units, 2013 – 2018, CalgroM3 Developments, Project Leader/ Engineer - Management and design of all civil engineering and electrical bulk, link and internal infrastructure required for the development. The project value was R370 million.
- Storm Water Infrastructure Management and Access Road Upgrade for Eskom's Mbashe Hydro Station Access Road.
- Detailed Study and Investigation for the desiltation of the Collywobbles Dam, Eskom Holdings SOC Ltd.
- Department of Public works - Mthatha High Court Follow-on RAMP.
- Department of Public works - Isilamela Hospital Emergency Repairs to Water and Sanitation Services.
- Department of Public works -Greenville Hospital Emergency Repairs to Water and Sanitation Services.
- CHDM Water Resource Master Plan -Position: Project Principal - Client: Chris Hani District Municipality (CHDM) Brief Description: Desktop study, project coordination and drafting of the CHDM WRMP including groundwater investigations for commercial investment including aquifer recharge potential. The investigation also addressed water resource optimization and management as well as water re-use potential and initiatives. - Duration: June 2012 – March 2013 - Project value: R 1.3 million.
- CHDM Dam Safety Inspections - Position: Project Manager and Engineer (Civil) - Client: Chris Hani District Municipality (CHDM) - Brief Description: Dam safety inspections on the following dams: Molteno Dam (CatIII). Anderson Dam (CatIII), Thompson Dam (CatII), Bongolo Dam (conditional assessment), Berry Reservoir (conditional assessment) -Duration: October 2012 – March 2014 - Project value: R 960,000.
- Eskom Hydro Stations 3 Year Bulk Services Contract: Collywobbles Weir Stabilization - Position: Project Manager/Project Engineer (Civil) - Client: Eskom Holdings SOC Ltd - Brief Description: Stabilization design and implementation on the Collywobbles Weir as well as the cost benefit analysis, design and installation of flash boards. - Duration: August 2012 – December 2015- Project value: R26 million.
- Eskom Hydro Stations 3 Year Bulk Services Contract: - Mbashe Hydro Refurbishment - Position: Project Manager/Project Engineer (Civil) - Client: Eskom Holdings SOC Ltd - Brief Description: Full refurbishment and maintenance on the 5mx6m main penstock intake gate, 3600mm dia. Expansion joint, 4 x 1500mm Main Intake Valves, tailrace and tailrace gates and associated infrastructure. - Assigned Tasks: Planning, Design and Project management - Duration: August 2012 – December 2015- Project value: R8 million.
- Ndlambe Bulk Water Supply – Feasibility Study - Position: Project Manager/Engineer - Client: Amatola Water - Brief Description: Feasibility investigation and route identification on the proposed Ndlambe Bulk Water Supply

1. CIVIL ENGINEER (NAME): [redacted]

EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty) Ltd Principal: Water and wastewater treatment Specialist	Pr Tech Eng ENG.Grad Germany 1969	ECSA Pr Tech Eng [redacted]	40

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] is a qualified and registered Professional Technologist in Engineering (PrTechEng) with ECSA and has over 40 years verifiable post graduate experience in the analyses and design of wastewater treatment works. [redacted] is currently a senior water and wastewater treatment engineer and a Principal at Bigen Africa Services (Pty) Ltd. He is part of the Water and Sanitation division and specifically the Treatment cluster that focusses primarily on potable water treatment, wastewater treatment and water re-use projects.

[redacted] professional focus area has been the civil and hydraulic design of water and wastewater treatment works-related projects and he has been involved in numerous such projects in varying capacities since joining Bigen Africa in 1987.

[redacted] in his 40 year long career has successfully been involved in handling a number of project involving wastewater treatment works especially in the civil and hydraulic evaluation, design and construction of these plants. He has also been intensively involved in the maintenance and upgrading of treatment works in the Natal Midlands and northern Natal during 1987 and 1995. He has typical been responsible for the site layouts, access to and within the site, water supply, sewage treatment unit design and stormwater management. He demonstrates a keen understanding of plant hydraulics which makes it possible to effectively and efficiently place the treatment units with relative accuracy to efficiently make sure of a site. He also have extensive knowledge of construction materials to ensure the durability, affordability and quality of the products specified for the construction and lifespan of the treatment works. His experience in and knowledge construction methods used in the construction of treatment works allows foe effective design that can be readily implemented by the contractor with ease and little complications.

Specialisation:

- Design and Construction of water- and sewage treatment works
- Design of Pump Stations
- Cost Estimates, quantities and documentation Experience & comparable projects:

WATER TREATMENT WORKS (WTW)

Design including ancillary work and architectural aspects from concept to commissioning which includes also cost estimates, quantities and documentation.

- Maselspoort WTW upgrade and expansion of 100 Mℓ/d to 132 Mℓ/d advanced WTW Client :Management Metro Municipality (ongoing)
- Mmabatho WTW upgrading of 20 Mℓ/d plant and expansion of the plant to 30 Mℓ/d as well as process upgrade (ongoing) Client: Sedibeng Water
- Sterkfontein WTW ,Expansion of the 10 Mℓ/d plant to 24 Mℓ/d. Client :Milotus Consulting (PTY) Ltd (ongoing)
- Bospoort WTW (Rustenburg)Expansion of plant from 12 Mℓ/d 26 Mℓ/d. Client: Rustenburg Water Services Trust-(2017)
- Taung WTW 12 Mℓ/d conventional plant-(2015)
- Inyaka WTW 5 Mℓ/d first phase extended to 20 Mℓ/d in late Nineties, with phase 3 & 4 the total of the project is 100 Mℓ/d-(2013). Client: Dept of Water Affairs and Forestry
- Kinira Drift WTW.2 Mℓ/d-(2012)
- Warden WTW 5 Mℓ/d conventional plant-(2012)
- Lindley WTW,5 Mℓ/d -2011
- Sterkspuit WTW upgrading and Expansion from 4 Mℓ/d to 12 Mℓ/d-(2010). Client: Amatola Water
- Metalong WTW (Lesotho) 90 Mℓ/d tender only design and quantities-(2010)
- Nelspruit WTW Project comprises the ext. of the works by 13 Mℓ/d with additional raw water collection sump.-(2010). Client: Mmombela Local Municipality
- Roodeplaat WTW (TSHWANE) 60 Mℓ/d with advanced treatment processes and raw water dam abstraction.-(2003). Client: City of Tshwane Metropolitan Municipality
- Esikhawini WTW, 10 Mℓ/d extension-(2007)
- Jozini WTW 5 Mℓ/d-(2005). Client: Umkhanyakude District Municipality.
- Wilge WTW (Harry Smith)-(2004). Refurbishment of existing plant(RGSEF and back wash system)
- Hectorspruit WTW –(2001). Upgrading of existing plant-In sequence filtration
- Tonga WTW –(2001). Upgrading of existing Plant
- Sibange WTW 0.5 Mℓ/d package plant with river abstraction-2000

WASTEWATER TREATMENT WORKS (WWTW) - Civil and hydraulics design as well as quantities

- Potsdam WWTW – upgrade and extension (2019-ongoing). Client: City of Cape Town

[redacted]

1. STRUCTURAL ENGINEER (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty)Ltd – Principal	B.Eng (Civil) 1998	ECSA Pr Eng. [redacted] ECN (Namibia) [redacted] ERB (Botswana) Pr. Eng. [redacted] NHBRC [redacted]	21.5

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] has been involved in several fields of civil engineering over the past 21 years. Most recently he has been involved with the design and management of several bridge, reservoir, water tower, commercial, refurbishment and hospital projects.

He spent about two years in Ireland seconded to an Irish consultancy on the design and construction of landmark high-rise apartment and office buildings.

In South Africa he contributed to projects as varied as hospitals and clinics, shopping centers, office buildings, industrial buildings, factory buildings (paper industry), structural steel repair work at a major mine, housing and low cost housing.

At the start of his career he worked on major projects providing sewer infrastructure for several villages in Botswana.

[redacted] is a very competent and capable individual with a high level of technical expertise. He is focused on producing engineering solutions of a high standard and works with determination to ensure projects are delivered on time and within budget in a tailor-made way to best serve the project brief and specification.

[redacted] is a strong individual worker, he maintains very good working relationships with colleagues and functions well in the spheres of the project and professional teams. He has an adaptable personality, able to make decisions to direct and redirect any project as may be required to meet and exceed the client's expectations. His technical and management skills continuously serves up projects of a high standard.

Specialisation:

Water retaining structures – reinforced concrete design:

- Water and waste water treatment works - inlet channels, settlement tanks, filters and clarifiers
- Reservoirs and Water Towers
- Pump Stations
- Valve chambers as well as bulk sewer and stormwater manholes
- Culverts and Bridges (pipe, road and rail)

Residential, commercial, retail and industrial structures:

- Reinforced concrete and post-tensioned concrete design
- Structural steel design
- Masonry and Timber design

Experience & comparable projects:

- **Adams Mission 5 and 6: 4 ML and 10 ML Rectangular Reservoirs, Durban:** Structures Operations Manager / Design Engineer (current)
- **30 ML Reservoir, Lufhereng Development, Soweto:** Structures Project Operations Manager /Design Engineer (current)
- **Bospoort 35 ML Reservoir, Rustenburg:** external reviewer of preliminary design and details (detail design to follow)
- **Mmabatho WTW upgrade:** Reviewer of roof and all other steel structures shop drawings
- **Sterkfontein WTW Phase 2, Free State – Sedimentation Tanks:** Structures Project Operations Manager/Co-design Engineer
- **Southern Paarl Bulk Sewer Manholes, Val de Vie (current) –** Design Engineer of manholes for 900ø HDPE sewer pipe up to 8.5m deep
- **Etwatwa Water Tower, Benoni –** Reviewer of 1.1 Ml Water Tower design in seismic zone
- **11 Ml Mountain View Reservoir, Postmasburg (current) –** Structures Project Operations Manager/Co-Design Engineer
- **500 kl Newtown Water Tower, Postmasburg (current) –** Structures Project Operations Manager/Co-Design Engineer
- **2.6 Ml Water tower, Thornhill, Port Alfred (current) –** Structures Project Operations Manager /Co-Design Engineer
- **10 Ml Reservoir, Tambo Springs, near Vosloorus, Gauteng (Preliminary Stage) –** Structures Project Operations Manager/Co-Design Engineer
- **20 Ml Reservoir and 2 Ml Water Tower with pump station, Clayville development, Olifantsfontein –** Structures Project Operations Manager/Co-Design Engineer
- **Leeuwpoort Reservoirs (6 Ml and 32 Ml), Boksburg (Preliminary Stage) –** Structures Project Operations Manager /Co-Design Engineer

2. STRUCTURAL ENGINEER (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty)Ltd – Structural Engineer (Registered)	B.Eng (Hons): Structural (2012) B.Eng (Civil) (2010)	ECSA Pr Eng [redacted] MSAICE Corporate [redacted]	9

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] is a professionally registered structural engineer with nine years' experience in planning, design and implementation of large-scale multi-disciplinary commercial, industrial, civil and educational developments. He has extensive experience in the design and analysis of reinforced and prestressed concrete, steel, timber and masonry structures; preparation of construction drawings and technical reports; multi-disciplinary coordination; construction supervision; design and project management.

[redacted] is a highly motivated, open-minded, resourceful individual with an analytical mind and a drive to see things through to completion. His greatest strengths include his practical approach to problem solving, his eagerness to learn new things and take on new challenges, as well as the ability work under pressure. [redacted] work is of a high standard and executed with meticulous attention to detail.

Specialisation:

Structural & Civil:

- Skilled in structural design and analysis (concrete, steel, timber, masonry) of commercial, industrial, civil and educational structures including buildings and bridges
- Skilled in seismic analysis, traditional structural analysis and finite element analysis methods
- Skilled in multi-disciplinary coordination, value engineering, technical report writing, design and project management as well as technical staff management
- Good working knowledge of building and design codes (Inc. SANS, BS, EC, ACI, ASCE, AISC)
- Skilled in preparation of construction drawings (Inc. detailing of reinforcement)
- Skilled in construction supervision, quality assurance and concrete technology
- Skilled in liaising with clients, contractors, architects and other consultants in the project team

Experience & comparable projects:

- **Bambisana Hospital, Eastern Cape (Project Value: R700m Divided Into 2 Phases)** – Structural Design Engineer. Redevelopment and refurbishment of a 134-bed hospital. Provision of new facilities including administration block, supporting services block, guard house, staff accommodation, ward blocks, clinical departments inc. Casualty, Out Patients, Radiology, Maternity and Obstetrics Unit and Pharmacy (13500m^2) (Structural Steel, Reinforced Concrete, Masonry).
- **Ga-Rankuwa City Mall, Gauteng (Project Value: R400m)** – Structural Design Engineer. Redevelopment and refurbishment of a large retail development (42000m^2) (Structural Steel and Reinforced Concrete).
- **Safety at Sports and Recreational Events Act (SASREA), Gauteng (Project Value: Not Disclosed)** – Lead Engineering Consultant. Advising the appointed City Engineer on the application by various stadium and venue owners, for safety and grading certificates contemplated in the SASREA Act.
- **NSC 1.1 & 2.1 Pump Stations, Botswana (Project Value: R325m)** – Structural Engineer / Structural Project Leader. Provision of new pump station buildings inc. delivery and suction buildings with crane provision, transformer buildings, a warehouse, refurbishment and extension of existing pump house buildings. (Structural Steel, Reinforced Concrete).
- **Riversands Commercial Park: Showrooms and Warehouse, Gauteng (Project Value: R25m)** – Structural Engineer / Structural Project Leader. Provision of an office building and warehouse to serve as showpiece for a commercial development (4000m^2) (Structural Steel, Reinforced Concrete, Structural Timber)
- **Menlyn Main Precinct: Orion Building, Gauteng (Project Value: R120m)** – Structural Engineer / Structural Project Leader. Multi-Storey office building (green star rated: 4 star) which forms part of 315 000m^2 mega development known as Menlyn Maine (12000m^2) (Reinforced Concrete, Structural Steel)
- **University of Pretoria: Boukunde Building, Gauteng (Project Value: R40m)** – Structural Engineer / Structural Project Leader. Refurbishment of multi-storey building. (7000m^2) (Reinforced Concrete)
- **University of Pretoria: Future Africa Research Institute Campus, Gauteng (Project Value: R225m)** – Structural Engineer / Structural Project Leader. Flagship campus including housing blocks (300 units), several building blocks designated as research commons, administration building, conference facilities and dining facilities. (24000m^2) (Structural Steel, Reinforced Concrete, Structural Timber)
- **Kusile Power Station, Package 16 Construction Supervision, Mpumalanga (Project Value: R120b)** – Structural Engineer / Field Engineer. Responsible for construction supervision and quality assurance for 1[redacted] buildings which formed part of Package 16 of the project.

1. MECHANICAL ENGINEER/TECHNOLOGIST (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty) Ltd – Managing Director Water & Sanitation; Principal (Mechanical Engineer)	D Eng (Civil Eng) 2002 M Eng (Mech Eng) 1995 B Eng (Mech Eng) 1988	ECSA Pr Eng [redacted] Engineering Registration Board of Botswana, Reg No [redacted] Engineering Registration Board of Zambia, Reg No [redacted]	28

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] of Bigen Africa has gained a wide range of experience during his 28 year career. His responsibilities as included design of many multi-disciplinary projects on water, waste water works, pumping stations and HVAC installations. His experience was obtained in all aspects of project cycle from project inception, strategic planning, funding, design, construction, operation, maintenance, monitoring, refurbishment and decommissioning. He has developed a sound understanding of integrated civil, mechanical, electrical, instrumentation and control requirements. His main technical interest and professional focus area has been the planning and design of bulk water, water treatment, wastewater and re-use schemes for numerous public and private clients. As specialist in the field of computational fluid dynamics (CFD) analysis and he has conducted numerous CFD studies to design or improve water treatment plant performance. He is a regular reviewer of national and international papers and post graduate projects. He has presented numerous papers at national and international conferences on subjects such as CFD, analysis, asset management, distribution system management and plant control.

Specialisation:

- Water treatment
- Potable and grey water reuse
- Pumping station design
- Bulk transfer systems
- CFD analysis
- Operation and maintenance
- Research
- IT systems and process control
- HVAC systems

Experience and Comparable projects:

Experience as Mechanical Engineer in the analyses and design of wastewater treatment works:

In terms of water and wastewater treatment plant-related projects, [redacted] has been actively involved in the compilation of specifications for mechanical and process control equipment, design of HVAC systems, equipment selection, HAZOP studies, energy optimization investigations, troubleshooting, plant commissioning and operations. With reference to his CV (attached) and Bigen Africa's track record provided in Schedule 12, he has been involved in the following wastewater treatment projects as Mechanical Engineer:

Design:

- **Upgrading and expansion of the Baviaanspoort BNR WWTW.**
  - Construction cost estimate – R 500 million; 2016 to current (Client: City of Tshwane Municipality)
- **Upgrading and expansion of the 24Ml/d Boitekong BNR WWTW**
  - Construction cost estimate – R 120 million, construction almost complete
  - Process end mechanical review, preliminary and detail design and procurement
  - Review of transfer pumping station sizing and technology (Client: Rustenburg Municipality)
- **Upgrading and expansion of the Zeekoegat WWTW – Phase 1 New 40 Ml/d BNR AS**
  - Completed in 2012 for R 189 million
  - Preliminary and detail process and mechanical design of upgrade, expansion and debottlenecking.
  - Investigated energy generation and different types of blowers for diffused aeration vs surface aeration (Client: City of Tshwane Municipality)
- **Upgrading and expansion of the Zeekoegat WWTW – Phase 2 Sludge Management**
  - Completed in 2015 for R 189 million (Client: City of Tshwane Municipality)
- **Rustenburg expansion of 42 Ml/d BNR WWTW (Phase 1 & 2) (2003, 2014-2017)**
  - Process and mechanical review, feasibility study for process upgrade
  - Investigation into various pumping and aeration systems. Low lift, recycle and high lift effluent pumping stations. (Client: Rustenburg Municipality)
- **Darvill 100 Mℓ/d WWTW and Water Reuse Treatment Works process upgrade (2010-2011)**
  - Water quality assessment, process design and mechanical engineering for feasibility study. (Client: Umgeni

- **Mokolo Crocodile Water Augmentation Project (2019 – 2023)**
  - Phase 2 for TCTA/DWS, a scheme with a capacity of 75 million m3/year, including a weir in the Crocodile River, two large pumping stations, a balancing reservoir, a break pressure reservoir and 900 mm, 1000 mm, 1100 mm, 1400 mm, 1500 mm and 1600 mm diameter pipelines over a distance of 134 km, with a contract value of R6 billion;
- **Inyaka WTW (2008-2014)**
  - Preliminary and detail design of expansion of 100 Mℓ/d Inyaka raw water pump station and raw water pipeline. (Client: Department of Water and Sanitation)
- **Sterkfontein WTW (2007-2009)**
  - Detail design, procurement and construction supervision of 10 Mℓ/d potable water high lift pump station at Sterkfontein dam. (Client: Miletus Consulting)
- **Komati Water Supply Augmentation Project (KWSAP) raw water pump station (2009-2012)**
  - Preliminary design of Rietfontein Weir pumping station supplying ESCOM Matla and Duvha power stations. (Client: TCTA)
- **Midvaal Water pump station refurbishment (2009-2014)**
  - Assessments and preliminary design of various high lift and booster pumping stations. (Client: Midvaal Water Company)
- **Magalies Water Vaalkop pump station upgrades (1995-2007)**
  - Assessments, preliminary design and construction supervision of PS 1 upgrade, PS2 refurbishment, new PS3 construction and PS2D construction. Pumpset sizes up to 2 MW. (Client: Magalies Water)
- **NSC-1 transfer improvement project (2008-2010) (Botswana)**
  - Assessment and preliminary design of upgrade requirements to existing pump stations (PS1.1, PS2.1, PS3.1 and future PS4.1) to improve operability, reliability and efficiency using variable speed drives and improved pump control. Pump stations up to 8 MW capacity. (Client: Ministry of Land Management, Water and Sanitation Services (MLWS))
- **NSC-1 pump station 4.1 (2014-2019) (Botswana)**
  - Preliminary design and plant design and build procurement and construction supervision of 120 Ml/d PS4.1 booster pumping station. (Client: Ministry of Land Management, Water and Sanitation Services (MLWS))
- **NSC-2.1 transfer scheme and pump station 2.2 (2007-2017) (Botswana)**
  - Preliminary design, EPC procurement and construction supervision of phase 1 of 360 km DN 1200 transfer pipeline and 150 Ml/d PS2.2 booster pumping station. (Client: Ministry of Land Management, Water and Sanitation Services (MLWS))
- **Mangaung Gariep Water Augmentation Programme (MGWAP) (2015-2017)**
  - Preliminary design of transfer scheme incorporating a 120 Ml/d water works, a high lift pumping station (120 Ml/d), Booster pumping station (120 Ml/d). (Client: Mangaung Metropolitan Municipality)
- **Chobe-Zambesi pumping systems (2014-2017) (Botswana)**
  - Design review and preliminary design of Zambesi raw water abstraction pumping station (56 000 l/s, 190 MVA) and several booster pumping stations ranging in size similar to the NSC-2. . (Client: Ministry of Land Management, Water and Sanitation Services (MLWS))
- **Lesotho-Botswana pumping systems (2014-2015) (Botswana)**
  - Preliminary design of transfer pumping stations from Lesotho Lowlands across Free State and North West province to Gaborone ranging in size from 5 000 to 5 800 l/s . (Client: Ministry of Land Management, Water and Sanitation Services (MLWS))

Experience as Mechanical Engineer in the asset management, operation and maintenance of water and wastewater treatment works and pump stations:

- Development of an integrated asset management and maintenance management plan system for the Magalies Water infrastructure:
  - 210Ml/d Vaalkop water works and distribution system
  - 42Ml/d Rustenburg WWTW
  - 8Ml/d Boitekong WWTW
  - 12Ml/d Bospoort WTW
- Refurbishment, operation, staff transfer and management of a 200 km neglected pipeline system in the former Bophuthatswana areas
- Operation and maintenance Vaalkop 210Ml/d water treatment plant incorporating raw water abstraction, chemical dosing, dissolved air flotation, sedimentation and rapid gravity filtration, 5 of high lift pumping stations and a bulk distribution network of 500km.
- Operation and maintenance of 12Ml/d Bospoort indirect potable reuse plant treating treated effluent for Bospoort dam incorporating DAF, upflow clarification, GAC filtration and chlorination (2005-2007).
- Operation and maintenance of 60Ml/d Roodeplaat indirect potable reuse plant incorporating DAF, up flow clarification, rapid gravity sand filtration, UV disinfection and chlorination.
- Operation and maintenance of 42Ml/d Rustenburg WWTW incorporating bio filtration 12Ml/d and 30Ml/d full BNR activated sludge processes, anaerobic digesters, sludge handling and dewatering (2005-2007).
- Operation and maintenance of 8Ml/d Rustenburg WWTW incorporating full BNR activated sludge processes with pre-fermentation (2005-2007).
- Implementation of an ISO 14000 system for the Magalies Water operations
- Development, implementation and operation of a regional water and waste water laboratory for Magalies Water incorporating AA, ICP, HPLC, TOC, wet chemistry and microbiological analytical equipment.

Development and implementation of a regional SCADA and telemetry system for the Magalies Water distribution system incorporating bulk flow water, reservoirs, pump station and treatment works spanning an area of 30 000km²

[redacted]

- The condition assessment of 2100 DPW assets in the Bojanala District Municipal area for the provincial department of DPW I Rustenburg. (2009 to 2010)

Contract Management and Administration:

- Act as lead consultant and project manager for the design of Proto-type clinics for the Gauteng Department of Infrastructure Development. (2014 to date)
- The compilation of eleven (11) maintenance contracts for the University of Pretoria maintenance to assist in the asset management function of maintaining the universities facilities and contract management of various external resources. (2008 to 2014)
- To compile and set out specifications, evaluating tenders, writing recommendations and supervising the implementation of tenders in respect of the following (July 1985 to July 1989):
  - Rebuilding the air conditioning machinery at Munitoria.
  - Installing a new switch-gear for the boilers.
  - Installing water treatment plants at the Produce Market and Munitoria.
  - Modernising the lifts at Munitoria.
  - Safeguarding the cooling towers at Munitoria.
  - Re-piping the ammonia cooling system at the Pretoria Fresh Produce Market.

General Advisory Services:

- Conduct site maintenance audit of the water and sanitation plants in the Rustenburg area for the Rustenburg Water Services Trust and make recommendations on system improvements and compliances to contract conditions. (2014)
- To establish an annual operating budget for the Mechanical Maintenance Division C de Wet
- To implement, control and maintain various statutory requirements in respect of the applicable acts, regulations, ordinances and guidelines for the department.
- To represent the City Council on the following committees (1994 to Sept 1997):
  - SABS technical committees as nominated from time to time.
  - Ad hoc committees constituted in the Council from time to time.
  - NOSA occupational safety committee.
  - Bus Operators' Association of South Africa (BOVSA).

General Technical Assistance:

The design and refit of HVAC systems at the University of Pretoria in the following facilities and areas (2008 to date):

- Replacement of chilled water system with decentralised fan coil units in various office in the South East wing of the Main Administrative block C/O Lynnwood and University Road
- Replacement of chilled water unit with decentralised rooftop units for the Council Chamber and Senate Hall in the Main Administrative block C/O Lynnwood and University Road
- The replacement of the 4 air handling rooms with modern technology heat recovery standalone air handling units inclusive of control mechanism and the sanitation of all supply air ducts at the Building Science Building on the main Campus, Hatfield
- New design and installation of the new IT LAB on the Medical campus
- New Design and installation of the HVAC system at the African Languages Lab on the Main Campus in Hatfield.
- Refurbishment of AE Du Toit precinct buildings and new build to Annex – HVAC, gasses and Wet Services

Moretele Local Municipality Capital Projects Project Management, Mogale City Asset Management Plan and Bojanala Schools Asset Management (Mar 2005 to 2007):

- To develop and implement contract administration processes.
- To manage the capital budget for the Moretele LM in respect of municipal infrastructure.
- To assist on all technical matters relating to the maintenance and operation of the municipal infrastructure

Maintenance Management and Systems:

- Provide maintenance management and technical advisory services to all 380 facilities of the Northern Cape Department of Health facilities including Provincial Hospitals, Community Health Centres, Clinics, Specialised hospitals, Office blocks and Nursing homes and related infrastructure. The disciplines included HVAC, Building Wet Services, Medical Gas Systems, Vertical transportation Systems, Boiler Systems, Mortuary Refrigeration, Kitchen System and Laundry Systems.
- Provide maintenance support to Umhlatuze Water on all water and sanitation plants and reticulation – 2014/15
- Provide maintenance support to the Department of Science and Technology in Pretoria – (2016 to date)
- Act as Mentor and serve as member on the Technical Advisory committee for the National Skills Fund project where you mechanical students are assisted to obtain the qualification by completing their P1 and P2 practical work. (2013 to date)
- Involved in technical advisory services and condition audit on SABS facilities on the SABS Maintenance contract – All facilities country wide. (2013 to date)
- DWAF BoTT Project (Nov 1999 to Oct 2003):
  - To establish an Operations and Maintenance system to support the maintenance and operations functions of the Department of Water Affairs and Forestry, in the Mpumalanga province.
  - To establish a structured database to support the system.

To manage the input/output objectives of the Mechanical Maintenance Services Division at the C de Wet workshops by (1994 to Sept 1997):

[redacted]

- Current project, to be completed

- **Clayville Pump Station** – Electrical design of booster pump station, inclusive of standby requirements.
  - Current project, to be completed
- **Southhills pump station upgrade** – The electrical and electronic design to accommodate pump upgrades in order to increase the flow into the pressure tower situated in Johannesburg.
  - Final commissioning of pump station in progress
- **Nsezi pump station project** – Electrical design in order to upgrade of Nsezi pump station in Empangeni by increasing the motor installed capacity from 1000kW to 1400kW with the use of auto-transformer motor starters.
  - Project completed in 2016, R 10 million
- **Department of Water and Sanitation (DWS) projects (2010-2014)** – Project management was done in order for the DWS pump stations to be upgraded to the latest PLC control and SCADA systems. In the process, energy interventions were implemented to take Eskom Time of Use (ToU) into account. Intensive liaising was required with DWS, Eskom, contractors and subcontractors. Projects were done on the following Government Water Schemes (GWS);
- **Usutu GWA:** Three (3) pump stations with a combined installed capacity of 42.22 MW (Project Cost: +-R6.5 Million);
  - Jericho pump station (21.12 MW)
  - Kliphoek pump station (9.6 MW)
  - Camden pump station (11.5 MW)
- **Usutu-Vaal GWS:** Three (3) pump stations with a combined installed capacity of 36.5 MW (Project Cost: +- R5.1 Million);
  - Grootfontein pump station (13.5 MW)
  - Grootdraai pump station (10.8 MW)
  - Rietfontein pump station (12.2 MW)

Experience in bulk electrical supply projects – Electrical/Project Engineer:

- **UMK Overhead Line (OHL) relocation** – Project management for the relocation of the Hotazel-Middelplaats 66kV OHL. Project complete in 2018 – R10 Million
- **Rustenburg Work: Alternative bulk electrical supply upgrade** – The electrical design included an alternative electrical Overhead Line (OHL) from a secondary Substation. Project was not approved due to political reasons

Experience in Building / Hospital related projects – Electrical Engineer:

- **Kururamed Private Hospital** – Electrical design for a new private hospital. Project in design phase
- **Kuruman Fire Station** – Electrical design Engineer. Project ongoing
- **Bambisana Hospital Upgrades**
  Electrical design of new infrastructure for the existing Bambisana hospital. The electrical design included MV/LV reticulation, standby power requirements, LV distribution zones and infrastructure, lighting, power and special power requirements, etc.
  Project budget – R350 million, project ongoing
- **Siloam District Hospital**
  Electrical design of new infrastructure for the existing Siloam hospital. The electrical design included MV/LV reticulation, standby power requirements, LV distribution zones and infrastructure, lighting, power and special power requirements, etc.
  -Project budget – R850 million, project ongoing
- **Accelerated Schools Infrastructure Development Initiative (ASIDI)**
  Electrical design of modular- as well as conventional schools for the Eastern Cape region.
- **Canadian High Commission**
  - Electrical condition assessment of the High Commission of Canada, Pretoria.

[redacted]

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MECHANICAL ENGINEERING SERVICES **(MINIMUM 2 PROFESSIONALS)**

2. MECHANICAL ENGINEER/TECHNOGOLIST (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty)Ltd – Principal (Mechanical Engineer)	B.Eng (Mechanical) 1983	ECSA Pr Eng [redacted] Mechanical Engineer's Certificate of Competency [redacted]	34

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile

A Mechanical Engineer with 34 years of experience, [redacted] specializes in the maintenance and operational systems. He is also involved in project management and asset management on various projects. His key experience includes:

- **Management and operation of vehicle, machinery and plant workshops** – planning, scheduling, control and co-ordination of resources,
- **Maintenance and refurbishment of air conditioning and cooling systems** - planning, scheduling, control and co-ordination of resources,
- **Facilities Management** – Budgeting, Maintenance and Management
- **Supply chain management** – Planning of facilities, Operational management and planning, scheduling, control and co-ordination of resources
- **Project management** of capital programmes for water infrastructure development projects.

Specialisation:

- **Management and operation of vehicle, machinery and plant workshops** – planning, scheduling, control and co-ordination of resources,
- **Maintenance and refurbishment of air conditioning and cooling systems** - planning, scheduling, control and co-ordination of resources,
- **Facilities Management** – Budgeting, Maintenance and Management
- **Supply chain management** – Planning of facilities, Operational management and planning, scheduling, control and co-ordination of resources
- **Project management** of capital programs for water infrastructure development projects.
- **Design of Mechanical building systems** including HVAC, Refrigeration, Vertical Transportation, Medical gas, Kitchen, Laundry and Mortuary systems.

Experience & Comparable projects

Building Services Designs:

The above entails the design in various building types, the collection of services consisting of HVAC, Wet Services, Vertical Transportation items, Medical gasses, Compressed air systems, vacuum systems and others for various clients and includes the following projects:

- Small and medium clinic proto type designs – GDID – 2013 to date
- Upgrading of Mandisa & Refentse clinics – GDID – 2015 to date
- Siloam Hospital (2016 to date)
- Thlabane Multi-Purpose Development (2016 to date)
- Otjiwarango Hospital Wet Services Designs
- Wedge shopping centre (2016 to date)
- Bambisana Hospital (2018 to Date)
- Debswana Compressor House HVAC Design (2017 - 2018)
- Kuruman and Tswaragano Hospital Medical Air supply (2019 to date)
- Upington Hospital Compressor house optimization and heat control
- Upington Hospital HVAC system emergency repairs
- St Barnabas COVID readiness facility conversion on ventilation in line with WHO and NDOH standards.
- Cordonia Nurses Home COVID readiness facility conversion on ventilation in line with WHO and NDOH standards.
- University of Pretoria – AE du Toit Precinct HVAC upgrade on the Vetman, Stoneman, Bateman, AE Du Toit Annex and AE Du Toit auditorium facilities (2016 to 2020)

Asset Management Planning:

- Compile User Asset Management Plans (UAMPs) and Custodian Asset Management Plans (CAMP's) for the Gauteng Department of Infrastructure Development. (2012 to date)
- The establishment and maintenance over 3 years of Integrated Infrastructure Asset Management systems and Asset Registers at Mogale City and Westonaria LM. (2008 to 2014)

Asset registers, accounting and information management:

- Involved in the condition assessment and compilation of a business case for the Department of Health on their [redacted] Hospital Revitalisation program project. (June 2010 to date)

Condition Assessment:

- Compile and structure Mechanical assessment data and develop equipment hierarchies for mechanical sys[redacted] health facilities. (2013 to date)

- The condition assessment of 2100 DPW assets in the Bojanala District Municipal area for the provincial department of DPW I Rustenburg. (2009 to 2010)

Contract Management and Administration:

- Act as lead consultant and project manager for the design of Proto-type clinics for the Gauteng Department of Infrastructure Development. (2014 to date)
- The compilation of eleven (11) maintenance contracts for the University of Pretoria maintenance to assist in the asset management function of maintaining the universities facilities and contract management of various external resources. (2008 to 2014)
- To compile and set out specifications, evaluating tenders, writing recommendations and supervising the implementation of tenders in respect of the following (July 1985 to July 1989):
  - Rebuilding the air conditioning machinery at Munitoria.
  - Installing a new switch-gear for the boilers.
  - Installing water treatment plants at the Produce Market and Munitoria.
  - Modernising the lifts at Munitoria.
  - Safeguarding the cooling towers at Munitoria.
  - Re-piping the ammonia cooling system at the Pretoria Fresh Produce Market.

General Advisory Services:

- Conduct site maintenance audit of the water and sanitation plants in the Rustenburg area for the Rustenburg Water Services Trust and make recommendations on system improvements and compliances to contract conditions. (2014)
- To establish an annual operating budget for the Mechanical Maintenance Division C de Wet
- To implement, control and maintain various statutory requirements in respect of the applicable acts, regulations, ordinances and guidelines for the department.
- To represent the City Council on the following committees (1994 to Sept 1997):
  - SABS technical committees as nominated from time to time.
  - Ad hoc committees constituted in the Council from time to time.
  - NOSA occupational safety committee.
  - Bus Operators' Association of South Africa (BOVSA).

General Technical Assistance:

The design and refit of HVAC systems at the University of Pretoria in the following facilities and areas (2008 to date):

- Replacement of chilled water system with decentralised fan coil units in various office in the South East wing of the Main Administrative block C/O Lynnwood and University Road
- Replacement of chilled water unit with decentralised rooftop units for the Council Chamber and Senate Hall in the Main Administrative block C/O Lynnwood and University Road
- The replacement of the 4 air handling rooms with modern technology heat recovery standalone air handling units inclusive of control mechanism and the sanitation of all supply air ducts at the Building Science Building on the main Campus, Hatfield
- New design and installation of the new IT LAB on the Medical campus
- New Design and installation of the HVAC system at the African Languages Lab on the Main Campus in Hatfield.
- Refurbishment of AE Du Toit precinct buildings and new build to Annex – HVAC, gasses and Wet Services

Moretele Local Municipality Capital Projects Project Management, Mogale City Asset Management Plan and Bojanala Schools Asset Management (Mar 2005 to 2007):

- To develop and implement contract administration processes.
- To manage the capital budget for the Moretele LM in respect of municipal infrastructure.
- To assist on all technical matters relating to the maintenance and operation of the municipal infrastructure

Maintenance Management and Systems:

- Provide maintenance management and technical advisory services to all 380 facilities of the Northern Cape Department of Health facilities including Provincial Hospitals, Community Health Centres, Clinics, Specialised hospitals, Office blocks and Nursing homes and related infrastructure. The disciplines included HVAC, Building Wet Services, Medical Gas Systems, Vertical transportation Systems, Boiler Systems, Mortuary Refrigeration, Kitchen System and Laundry Systems.
- Provide maintenance support to Umhlatuze Water on all water and sanitation plants and reticulation – 2014/15
- Provide maintenance support to the Department of Science and Technology in Pretoria – (2016 to date)
- Act as Mentor and serve as member on the Technical Advisory committee for the National Skills Fund project where you mechanical students are assisted to obtain the qualification by completing their P1 and P2 practical work. (2013 to date)
- Involved in technical advisory services and condition audit on SABS facilities on the SABS Maintenance contract – All facilities country wide. (2013 to date)
- DWAF BoTT Project (Nov 1999 to Oct 2003):
  - To establish an Operations and Maintenance system to support the maintenance and operations functions of the Department of Water Affairs and Forestry, in the Mpumalanga province.
  - To establish a structured database to support the system.

To manage the input/output objectives of the Mechanical Maintenance Services Division at the C de Wet workshops by (1994 to Sept 1997):

[redacted]

- Current project, to be completed
- **Clayville Pump Station –** Electrical design of booster pump station, inclusive of standby requirements.
  - Current project, to be completed
- **Southhills pump station upgrade –** The electrical and electronic design to accommodate pump upgrades in order to increase the flow into the pressure tower situated in Johannesburg.
  - Final commissioning of pump station in progress
- **Nsezi pump station project** – Electrical design in order to upgrade of Nsezi pump station in Empangeni by increasing the motor installed capacity from 1000kW to 1400kW with the use of auto-transformer motor starters.
  - Project completed in 2016, R 10 million
- **Department of Water and Sanitation (DWS) projects (2010-2014) –** Project management was done in order for the DWS pump stations to be upgraded to the latest PLC control and SCADA systems. In the process, energy interventions were implemented to take Eskom Time of Use (ToU) into account. Intensive liaising was required with DWS, Eskom, contractors and subcontractors. Projects were done on the following Government Water Schemes (GWS);
- **Usutu GWA:** Three (3) pump stations with a combined installed capacity of 42.22 MW (Project Cost: +-R6.5 Million);
  - Jericho pump station (21.12 MW)
  - Kliphoek pump station (9.6 MW)
  - Camden pump station (11.5 MW)
- **Usutu-Vaal GWS:** Three (3) pump stations with a combined installed capacity of 36.5 MW (Project Cost: +- R5.1 Million);
  - Grootfontein pump station (13.5 MW)
  - Grootdraai pump station (10.8 MW)
  - Rietfontein pump station (12.2 MW)

Experience in bulk electrical supply projects – Electrical/Project Engineer:

- **UMK Overhead Line (OHL) relocation –** Project management for the relocation of the Hotazel-Middelplaats 66kV OHL. Project complete in 2018 – R10 Million
- **Rustenburg Work: Alternative bulk electrical supply upgrade** – The electrical design included an alternative electrical Overhead Line (OHL) from a secondary Substation. Project was not approved due to political reasons

Experience in Building / Hospital related projects – Electrical Engineer:

- **Kururamed Private Hospital –** Electrical design for a new private hospital. Project in design phase
- **Kuruman Fire Station –** Electrical design Engineer. Project ongoing
- **Bambisana Hospital Upgrades**
  Electrical design of new infrastructure for the existing Bambisana hospital. The electrical design included MV/LV reticulation, standby power requirements, LV distribution zones and infrastructure, lighting, power and special power requirements, etc.
  Project budget – R350 million, project ongoing
- **Siloam District Hospital**
  Electrical design of new infrastructure for the existing Siloam hospital. The electrical design included MV/LV reticulation, standby power requirements, LV distribution zones and infrastructure, lighting, power and special power requirements, etc.
  -Project budget – R850 million, project ongoing
- **Accelerated Schools Infrastructure Development Initiative (ASIDI)**
  Electrical design of modular- as well as conventional schools for the Eastern Cape region.
- **Canadian High Commission**
  - Electrical condition assessment of the High Commission of Canada, Pretoria.

ELECTRICAL ENGINEERING SERVICES **(MINIMUM 2 PROFESSIONALS)**

1. ELECTRICAL ENGINEER (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty) Ltd – Professional Electrical Engineer	M.Eng (Electrical) - 2011 B.Eng (Electrical) - 2006	ECSA Pr Eng [redacted] Botswana Engineers Registration Board (ERB) registration (Reg. No. [redacted])	10

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] is a registered Professional Engineer in Bigen Group's Heath Directorate with a total of 10 years' engineering and project experience, of which 5 years employed at Bigen Group. The years of experience is 3 years on various hospital and school projects; 10 years on water related projects (pump stations, water reticulation, water schemes, water treatment plants, etc.); and 10 years' project management experience, inclusive of energy management projects (5 years).

Specialisation:

The fields of experience and specialisation can be sub-divided as follows;

- MV/LV reticulation and distribution system.
- MCC/DB specifications, inclusive of fault level calculations,
- Pump station designs, inclusive of electrical systems, control and instrumentation systems, control philosophies, and associated systems,
- Building electrical services – Small power and Lighting systems.
- Hospital designs, inclusive of electrical supply systems and specialised hospital electrical equipment.
- Lightning and bonding system.
- Standby power systems.
- Project management.
- Quality Assurance / Quality Control (QA/QC).
- Electrical system auditing.
- Occupational Health & Safety Act

Experience and Comparable projects:

[redacted] project involvement as Electrical Engineer in related engineering project is summarized below. More detail related to some of these projects in his CV.

Experience in wastewater treatment related projects – Electrical Engineer:

- **Mogalakwena Dissolved Air Flotation (DAF) plants**
  - Electrical designs of two DAF plants inclusive of load calculations, load lists, cable schedules, IO schedules, control system design, MCC specification, project specifications, particular specifications, BoQ, etc.
  - Construction cost estimate – R100 Million, project planned for 2021-2022
- **Upgrading and expansion of the Boitekong WWTW**
  - Construction cost estimate – R 120 million; due for completion November 2017.
- **Construction of new tertiary treatment (DAF) at the Rustenburg WWTW**
  - Construction cost estimate – R 50 million, due for completion June 2017.
- **Upgrading and expansion of the Umzinto WWTW**
  - Construction cost estimate – R 30 million, phase 1 (refurbishment) completed, phase 2 in design development.

Experience in waste treatment & asset management related projects – Electrical Engineer:

- **Upgrading and expansion of the Maselspoort WTW (140Ml/day),** inclusive of Chemical building upgrades, RGS Filter upgrades, DAF upgrades, Ozone and GAC upgrade, bulk electrical connection upgrades, etc.
  - Design completed in 2017
- **Mechanical and Electrical quality assurance / quality control (QA/QC) at Metolong WTW in Lesotho.** Metolong treatment works consisted of a 93.4Ml/day output capacity water treatment works, including associated civil engineering work, electrical switchgear / transformers, MCCs, control panels, standby power generation equipment, etc.
  - Completed in 2018
- **Upgrade of Bospoort WTW from 12Ml/day to 24 Ml/day** – Electrical design of reticulation for additional equipment of Works. The Electrical and Control, Instrumentation scope of work for upgrading the process Infrastructure included the following; Chemical dosing, new flocculation channel and DAF tank, rapid gravity sand (RGS) filter, ozone contact tank, dewater building, filtrate sump, Hydrogen peroxide building and GAC filter.
  - Design done in 2017

Experience in pump station / bulk water related projects – Electrical/Project Engineer:

- **Thornhill Pump Station** – Electrical design of pump station, water tower and associated services.

- Current project, to be completed

- **Clayville Pump Station** – Electrical design of booster pump station, inclusive of standby requirements.
  - Current project, to be completed
- **Southhills pump station upgrade** – The electrical and electronic design to accommodate pump upgrades in order to increase the flow into the pressure tower situated in Johannesburg.
  - Final commissioning of pump station in progress
- **Nsezi pump station project** – Electrical design in order to upgrade of Nsezi pump station in Empangeni by increasing the motor installed capacity from 1000kW to 1400kW with the use of auto-transformer motor starters.
  - Project completed in 2016, R 10 million
- **Department of Water and Sanitation (DWS) projects (2010-2014)** – Project management was done in order for the DWS pump stations to be upgraded to the latest PLC control and SCADA systems. In the process, energy interventions were implemented to take Eskom Time of Use (ToU) into account. Intensive liaising was required with DWS, Eskom, contractors and subcontractors. Projects were done on the following Government Water Schemes (GWS);
- **Usutu GWA:** Three (3) pump stations with a combined installed capacity of 42.22 MW (Project Cost: +-R6.5 Million);
  - Jericho pump station (21.12 MW)
  - Kliphoek pump station (9.6 MW)
  - Camden pump station (11.5 MW)
- **Usutu-Vaal GWS:** Three (3) pump stations with a combined installed capacity of 36.5 MW (Project Cost: +- R5.1 Million);
  - Grootfontein pump station (13.5 MW)
  - Grootdraai pump station (10.8 MW)
  - Rietfontein pump station (12.2 MW)

Experience in bulk electrical supply projects – Electrical/Project Engineer:

- **UMK Overhead Line (OHL) relocation** – Project management for the relocation of the Hotazel-Middelplaats 66kV OHL. Project complete in 2018 – R10 Million
- **Rustenburg Work: Alternative bulk electrical supply upgrade** – The electrical design included an alternative electrical Overhead Line (OHL) from a secondary Substation. Project was not approved due to political reasons

Experience in Building / Hospital related projects – Electrical Engineer:

- **Kururamed Private Hospital** – Electrical design for a new private hospital. Project in design phase
- **Kuruman Fire Station** – Electrical design Engineer. Project ongoing
- **Bambisana Hospital Upgrades**
  Electrical design of new infrastructure for the existing Bambisana hospital. The electrical design included MV/LV reticulation, standby power requirements, LV distribution zones and infrastructure, lighting, power and special power requirements, etc.
  Project budget – R350 million, project ongoing
- **Siloam District Hospital**
  Electrical design of new infrastructure for the existing Siloam hospital. The electrical design included MV/LV reticulation, standby power requirements, LV distribution zones and infrastructure, lighting, power and special power requirements, etc.
  -Project budget – R850 million, project ongoing
- **Accelerated Schools Infrastructure Development Initiative (ASIDI)**
  Electrical design of modular- as well as conventional schools for the Eastern Cape region.
- **Canadian High Commission**
  - Electrical condition assessment of the High Commission of Canada, Pretoria.

2. ELECTRICAL ENGINEER (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty)Ltd Principal: Energy	BTech: Electrical Engineering - 2010 BTech: Project Management - 2012	ECSA Pr Tech Eng [redacted]	13

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] is a Professional Engineering Electrical Technologist with 13 years' experience. He has been involved in projects from a managing, designing and a construction viewpoint. He has gained valuable experience on Municipal Water and Waste Water Treatment facilities, High Voltage Substations, High Voltage Overhead Powerlines, High Voltage Underground Cable, Medium Voltage Substations and Medium Voltage Powerlines for Eskom and Municipalities over the years. His expertise comprises of Substation Primary Plant (Power and Civil), Substation Secondary Plant (Control, Substation Automation, SCADA, Powerline Design, Reticulation and Electrification. He is proficient in ReticMaster, PowerMaster, MicroStation, PLS-CADD, DIgSILENT PowerFactory (Static and Dynamic Studies), SolarGIS, PVSyst, Homer Pro and Autogrid Pro. He is currently on the Eskom database as an approved Eskom High Voltage Substation Engineering consultant for Bigen.

Specialisation:

- Protection Schemes
- Automation & Control
- HV & MV Substations (3.3kV – 220kV)
- HV & MV Overhead Powerlines (11kV – 132kV)
- HV & MV Grid Integration
- HV Underground Cable
- Renewable Energy & Grid Compliance Studies
- Power System Analysis
- Reticulation & Electrification
- Contract Management
- Project Management

Experience in wastewater and water treatment related engineering:

[redacted] project involvement as Electrical Engineer in terms of wastewater and water treatment related engineering is summarized below. More detail related to some of these projects are provided in Schedule 12 (Track Record) and his CV.

Electrical Engineer:

- Upgrading and expansion of the Misverstand Dam Pumpstation
  - Construction cost – R 5.5 million Electrical Works; Completion 2010
- Upgrading and expansion of the Swartland Pumpstation
  - Construction cost – R 4 million Electrical Works; Completion 2010
- Construction of new Lamberts Bay Desalination Plant
  - Construction cost – R 6 million Electrical Works, Completion 2009

Experience and comparable projects:

- Misverstand Dam Substation 66/11kV 1 x 10MVA Refurbishment – Resident Engineer responsible for Quality Assurance and Quality Control in respect to the Power Plant and Control Plant Installation, Client Liaison, Contract Management. Construction Value R1.8m.
- Steenbras Dam Power Station 12/132kV 4 x 60MVA - Electrical Engineer responsible for Power Plant Design, Control Plant Design, Client Liaison, Project Management & Contract Management. Construction Value R51m.
- Palmiet Substation 66/11kV Upgrade - Electrical Engineer responsible for Power Plant Design, Control Plant Design, Project Management, Contract Management and Client Liaison. Construction Value R3.8m.
- Gansbaai/Stanford 66kV Tie-in Overhead Powerline - Electrical Engineer responsible for 3.5km of 66kV Overhead Powerline design, Project Management, Contract Management and Client Liaison. Construction Value R6.3m.
- Vredendal Solar Park 10MW – Project Engineer responsible for the 11kV Grid integration to Eskom, Power Plant, Control Plant, Underground Cable Installation, Grid Code Compliance Studies, Project Management, Contract Management and Client Liaison. Construction Value R20m.
- Thembokwezi Khayelitsha (Low Cost Housing) – Design Engineer responsible for Underground reticulation of 550 erven, Project Management and Client Liaison – Project Value R12m.Vredendal Solar Park 10MW – Project Engineer responsible for the 11kV Grid integration to Eskom, Power Plant, Control Plant, Underground Cable Installation, Grid Code Compliance Studies, Project Management, Contract Management and Client Liaison. Construction Value R20m.
- Thembokwezi Khayelitsha (Low Cost Housing) – Design Engineer responsible for Underground reticulation of 550 erven, Project Management and Client Liaison – Project Value R12m.

[redacted]

1. ELECTRONIC ENGINEER (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
DJJC Consulting Engineers CC – Member Electrical Engineer	B Eng. (E & E Engineering) 1993 Certified Energy Manager (CEM) 2016	ECSA Pr Eng [redacted]	27

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] of DJJC Consulting Engineers is a qualified and registered Professional Engineer (Pr Eng) with ECSA and has 27 year experience as an Electrical & Electronic design engineer in the water and wastewater industry, with more than 22 years verifiable experience in electrical and electronic engineering, computer science, computer networks and their configuration, communication systems technology, data management and security, infrastructure security, firewalls and intrusion detection systems, and specifically the design and implementation of SCADA systems for municipal water and wastewater treatment facilities, including remote monitoring system and telemetry.

His main interest and professional focus area has been the design and construction management of water and wastewater treatment plant-related projects and he has been involved in numerous such projects in varying capacities since 1997. He has been involved in multiple large multi-disciplinary projects covering a wide range of electrical and electronic works in water and wastewater treatment works, pump stations, process control, SACDA, DCS systems, networks control as well as IT, telemetry, sub-stations, transition lines, small hydro plants, alternative generating plants with and without grid synchronization, lighting, buildings, renewable energy and protection systems.

Experience as electrical/electronic and process control engineer:

As Electrical/Electronic and Process Control Engineer, and with reference to his CV, [redacted] was involved in the following recent wastewater treatment projects, all of which includes the provision of SCADA control systems, data capturing and security, remote monitoring and control, setting up of computer networks and servers and telemetry systems:

- Upgrading and expansion of the Baviaanspoort WWTW
  - Construction cost estimate – R 500 million; 2016 to current
- Upgrading and expansion of the Zeekoegat WWTW – Phase 2 Sludge Management
  - Completed in 2015 for R 189 million
- Upgrading and expansion of the Zeekoegat WWTW – Phase 1: New 40 Ml/d BNR AS module
  - Completed in 2012 for R 200 million
- Design of new 150 Ml/d Lanseria WWTW (only 50 Ml/d to be constructed under phase 1)
  - Construction cost estimate – R 500 million; 2016 to current
- Upgrading and expansion of the Rustenburg WWTW
  - Completed in 2004 for R 120 million

In addition, he has experience in large pump sets and is currently involved in the design and control of the following large pump stations:

- Extension and refurbishment of Nottingham Pump Station for Oranje Vaal Water Users Association, 10 x 650kW river extraction pump station for irrigation of the Douglas Farmers.
- Condition assessment and recommendation report for Sulumanzi on Kayamazan WTW and pumping stations.
- Expansion Vaalkop Water Treatment Plant 3&4 Raw water pump station complete with 6 x 75kW, 3 x 62kW,
- 3 x 132kW and 2 x 280kW pumps and switchgear;
  - Construction cost estimate – R 39 million; 2013 to current
- Botswana North South Carrier project with 4 inline pump stations of each having a pumping capacity of 1.4 MW/3.3 kV
  - Construction cost estimate – R 45 million; 2007 to 2018
- Sondela Booster Pump Station 3x630 kW/3.3 kV pumps at Vaalkop WTW
  - Construction cost estimate – R 35 million; 2016 to current
- PS 4 consisting of 4 x 2.7 MW/6.6 kV pumps,
  - Construction cost estimate – R 35 million; 2016 to 2019
- Maselspoort Pump Station consisting of 3x 4.7 MW/6.6 kV pumps
  - Construction cost estimate – R 45 million; 2007 to 2018
- Phalaborwa Open Pit dewatering 2 x 900 kW/11 kV pumps
  - Construction cost estimate – R 45 million; 1998 to 2000

Other related projects:

- Tshwane Municipality
  - Water and Sanitation Telemetry Masterplan and Implementation
  - Design and implementation of telemetry and SCADA for various pump stations and reservoirs
  - Installation Value = R 72 m
- Nelspruit, Mpumalanga South Africa
  - Water and Sanitation Telemetry Masterplan and Implementation
  - Design and implementation of telemetry and SCADA for various pump stations and reservoirs
  - Installation Value = R 8 m

PROCESS DESIGN ENGINEER "D" (MINIMUM 1 PROFESSIONAL)
(WASTEWATER TREATMENT BRANCH ONLY)

1. **PROCESS DESIGN ENGINEER "D" (NAME):** [redacted]

EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty) Ltd - Specialist Water Engineer on Contract Basis. (see letter attached to Schedule 11)	M.Eng (Water Utilization) University of Washington USA - 1976 B.Eng (Civil) - 1972	ECSA PrEng [redacted]	35

RELEVANT FIELDS OF SPECIALIZATION

Profile:

[redacted] is a qualified and registered Professional Civil Engineer (Pr Eng) with ECSA and has more than 35 years' verifiable post-graduate experience in the analyses and design specializing in water and wastewater treatment, including Activated Sludge and Biological Nutrient Removal (BNR) wastewater treatment works. He is currently employed by Bigen Africa on a contract basis as specialist sub-consultant involved with process design of water and wastewater works as well as construction related activities as the Engineer. During his career, [redacted] was responsible for the planning and design of numerous multi-disciplinary, large-scale and state as well as privately-funded water projects throughout Africa (South Africa, Nigeria, Ghana, Namibia, Botswana and Pacific Rim countries). A 35-year career as a registered professional engineer culminated in significant expertise in water and wastewater treatment and bulk water systems. His experience includes considerable exposure to the mediation and resolution of contractual claims and disputes, which contributed to a sound understanding of contracts such as SAICE (1982 and 1990) and the International Federation of Consulting Engineers (FIDIC) specifications. As a technical person, his current key result areas include direct responsibility for major water projects using cutting-edge technology and project management skills. He is responsible for process design and technology selection as well as specialist reviews of designs by others.

Specialisation:

- Process design of municipal wastewater treatment facilities
- Process design of municipal water treatment facilities
- Plant and energy optimisation
- Hydraulic design of treatment plants, pump stations and conveyance systems
- Mechanical specifications for water and wastewater treatment plants construction contracts
- Management of construction works contracts

PARTICULAR EXPERIENCE: PROCESS DESIGN ENGINEER "D"

PROJECT / TASK DESCRIPTION	1. **Upgrading and expansion of the Boitekong WWTW (22 Ml/d)** Conventional BNR plant with fine bubble diffused aeration system, load balancing tank, sludge thickening and aerobic stabilization, mechanical sludge dewatering and chemical precipitation system for the removal of residual phosphate. Project Status: Commissioned. Construction cost R 180 million.		Start month/year July 2015	End month/year	Duration (months)
		DURATION OF ROJECT/TASK	July 2015	September 2020	63 months. The Mechanical Contractor defaulted on the contract and we had to call on the guarantees and appoint a completion contractor

CAPACITY OF PLANT	22	Ml/day	DURATION OF PERSONAL INVOLVEMENT IN DESIGN WORK/TASK/PROJECT	Mr Marx was involved from conceptual stage to commissioning		
IF AN UPGRADE /EXPANSION, STATE ADDITIONAL CAPACITY OF PROJECT/TASK	14	Ml/day	CLIENT REFERENCE & CONTACT DETAILS	Rustenburg Water Services Trust for Rustenburg Local Municipality	[redacted]	[redacted]
DETAILS OF INVOLVEMENT & RESPONSIBILITY (eg preliminary design, detailed design, process design, design review, design of a particular portion of the works, etc)	Mr Marx was the FIDIC engineer and project manager for the plant responsible for all aspects of the project including process as well as contractual					

PROJECT / TASK DESCRIPTION	**2. Zeekoegat WWTW for City of Tshwane** This is a 30Ml/d full BNR plant with sludge management and tertiary filtration. It was completed in 1990 and Mr Marx was the Project Director responsible for all aspects of the project. The then cost was approximately R60m. This plant was upgraded to 85Ml/d in 2010 at a cost of R530m. It was done as a JV between Bigen Africa and KweziV3 and Mr Marx was the Bigen Director for the total Project.		Start month/year	End month/year	
		DURATION OF PROJECT/TASK	Stage 1 1987 Stage 2 March 2008	1990 Stage 2 Feb 2015	Duration (months) 36 Months 84Months The Stage 2 Contract was carried out in a number of contracts to suit available budgets. First contract was 40Ml/d diffused aeration activated sludge. Second contract was for 85 Ml/d sludge management including anaerobic digestion, sludge dewatering and solar drying. Total value R530m

CAPACITY OF PLANT The first Phase was a new 30Ml/d plant completed in 1991	Ml/day 30Ml/d and	DURATION OF PERSONAL INVOLVEMENT IN	[redacted] was the Project Director responsible for all aspects of both Phase 1 and Phase 2	

[redacted]

and the second stage was to upgrade and extend it to 85Ml/d		55Ml/d (85Ml/d total)	DESIGN WORK/TASK/PROJECT			
IF AN UPGRADE /EXPANSION, STATE ADDITIONAL CAPACITY OF PROJECT/TASK	Stage 1 30 Ml/d Stage 2 55Ml/d	Ml/day	CLIENT REFERENCE & CONTACT DETAILS	City of Tshwane MM	[redacted]	[redacted]
DETAILS OF INVOLVEMENT & RESPONSIBILITY (eg preliminary design, detailed design, process design, design review, design of a particular portion of the works, etc)	Mr Marx was the project Director for Phase 1 on behalf of Van Wyk and Louw and later became the Project Director for the R530m Phase 2 on behalf of Bigen. He was responsible for all aspects of the project including process design and contractual aspects. He was thus intimately involved with the plant from about 1986 to 2016. The final tertiary treatment and debottlenecking contracts must still be executed and are on hold due to funding constraints. He retired during Stage 2 but remained involved to date					
PROJECT / TASK DESCRIPTION	3. **Rustenburg WWTW** This 42Ml/d plant was built for the Rustenburg Water Services Trust on behalf of Rustenburg Local Municipality. It consists of a 12Ml/d biological filter plant and two 15Ml/d BNR activated sludge modules. The cost at completion was R150m in 2005.			Start month/year	End month/year	Duration (months)
			DURATION OF ROJECT/TASK	July 2003	July 2005	24 Months
CAPACITY OF PLANT	42	Ml/day	DURATION OF PERSONAL INVOLVEMENT IN DESIGN WORK/TASK/PROJECT	Mr Marx was the Project Director for Van Wyk and Louw for the first 10Ml/d extension in late 1980's. He later became the project Director for the upgrade to a total of 42 Ml/d		
IF AN UPGRADE /EXPANSION, STATE ADDITIONAL CAPACITY OF PROJECT/TASK	From 22Ml/d to 42 Ml/d	Ml/day 20Ml/d	CLIENT REFERENCE & CONTACT DETAILS	Rustenburg Water Services Trust for Rustenburg Local Municipality	[redacted]	[redacted]
DETAILS OF INVOLVEMENT & RESPONSIBILITY (eg preliminary design, detailed design, process design, design review, design of a particular portion of the works, etc)	[redacted] was the Project Director for Van Wyk and Louw for the first 10Ml/d extension in late 1980's. He later became the project Director for the upgrade to a total of 42 Ml/d. He is currently involved with the planning stages to bring the plant's capacity to 60Ml/d. He has thus been intimately involved with this plant for more than 30 years.					

[redacted]

			WORK/TASK/PROJECT			
IF AN UPGRADE /EXPANSION, STATE ADDITIONAL CAPACITY OF PROJECT/TASK	60Ml/d MBR diffused aeration	Ml/day	CLIENT REFERENCE & CONTACT DETAILS	City of Cape Town	Ms Veska Medjidieva-Spassov Sameeh Johanndien	[redacted]
DETAILS OF INVOLVEMENT & RESPONSIBILITY (eg preliminary design, detailed design, process design, design review, design of a particular portion of the works, etc)	[redacted] was the designated Process Engineer as well as general reviewer for the project on behalf of Bigen.					

PROJECT/TASK DESCRIPTION	6. **Northern Works Unit 4** City of Johannesburg. This plant was constructed in the mid 1970's based on the then understanding of the BNR process. Africon was appointed during early 2000's to reconfigure the process in line with newer research		Start month/year	End month/year	Duration (months)
		DURATION OF ROJECT/TASK	1995	1998	Approximately 30 months

CAPACITY OF PLANT	150	Ml/day	DURATION OF PERSONAL INVOLVEMENT IN DESIGN WORK/TASK/PROJECT	[redacted] was involved for the full duration of the project		
IF AN UPGRADE /EXPANSION, STATE ADDITIONAL CAPACITY OF PROJECT/TASK	Upgrade and reconfiguration of a 150Ml/d plant	Ml/day	CLIENT REFERENCE & CONTACT DETAILS	Municipality of Johannesburg (Later Johannesburg Water)	[redacted]	[redacted]
DETAILS OF INVOLVEMENT & RESPONSIBILITY (eg preliminary design, detailed design, process design, design review, design of a particular portion of the works, etc)	Mr Marx was the project director ultimately responsible for all aspects of the project, including the process design. It was a challenging project because new process design theory had to fit into existing structures, albeit it modified.					

PROJECT/TASK DESCRIPTION	7. **Flip Human WWTW** for Mogale City. This was a 30Ml/d extension designed for full BNR and also anaerobic digestion		Start month/year	End month/year	Duration (months)
		DURATION OF ROJECT/TASK	1993	1996	28

[redacted]

HYDRAULIC ENGINEER "B" (MINIMUM 1 PROFESSIONAL)
(RETICULATION AND WASTEWATER TREATMENT BRANCHES ONLY)

2. HYDRAULIC ENGINEER "B" (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty) Ltd – Principal	B Eng (Civil) - 2003	ECSA, PrEng [redacted]	15

RELEVANT FIELDS OF SPECIALIZATION: HYDRAULIC ENGINEER "B"

Profile:
Coenie van Eck, of Bigen Africa, obtained his B Eng degree in civil engineering in 2004 and is registered as a professional Civil Engineer (PrEng) with ECSA. Over the past 15 years, and through his involvement in numerous civil engineering projects, he has gained experience in bulk water gravity and pumping supply systems, reservoirs, pump stations and other water related infrastructure & hydraulic components. Coenie's key experience is centred on the detail hydraulic design (including surge analyses) of bulk supply systems, in particular large diameter pipelines. He has further experience in pump station design and hydraulic analysis of supply networks.
Apart from design, he is also experienced in feasibility studies / master planning as well as the compilation of contract documentation, tender procurement and contract administration. He is further involved in project management and client liaison.

Specialisation:

- Hydraulic analysis and design of large diameter water pipelines (diameters exceeding 500mm)
- Design of gravity and rising mains, pump stations and reservoirs
- Hydraulic analyses of water supply systems and networks
- Design of urban and rural water supply schemes
- Contract documentation, tender procurement, contract administration, client liaison and project management

PARTICULAR EXPERIENCE: HYDRAULIC ENGINEER "B"
COENIE VAN ECK

PROJECT / TASK DESCRIPTION	DURATION OF INVOLVEMENT IN PIPELINE DESIGN PROJECT (Start Month/Year) (End Month/Year)	DURATION (Months)	PIPE DIAMETER, TYPE & LENGTH	DETAILS OF INVOLVEMENT & RESPONSIBILITY	DETAILS OF SURGE ANALYSIS CARRIED OUT	CLIENT REFERENCE & CONTACT DETAILS
Kempton Park supply pipeline – supply line from Rand Water connection down Van Riebeeck road	Start: Aug 2018 End: Jul 2020	24	3.6 km x DN 800 HDPE gravity line	Project management, hydraulic design, and surge analysis	Analysing the closing of the isolating valves in 120 seconds at the Rand Water connection point and at the connection point to the Kempton Park reservoir	City of Ekurhuleni Dikeledi Malatji Dikeledi.Malatji@ekurhuleni.gov.za [redacted]
Kempton Park supply pipeline – distribution [redacted] from Kempton Park	Start: Aug 2018 End: Jul 2020	24	1.2 km x DN 500 HDPE gravity line	Project management, hydraulic design, and surge analysis	Analysing the closing of the isolating valve in 90 seconds at the start and	City of Ekurhuleni Dikeledi Malatji Dikeledi.Malatji@ekurhuleni.gov.za

PROJECT / TASK DESCRIPTION	DURATION OF INVOLVEMENT IN PIPELINE DESIGN PROJECT (Start Month/Year) (End Month/Year)	DURATION (Months)	PIPE DIAMETER, TYPE & LENGTH	DETAILS OF INVOLVEMENT & RESPONSIBILITY	DETAILS OF SURGE ANALYSIS CARRIED OUT	CLIENT REFERENCE & CONTACT DETAILS
reservoir along Dann road					end of the pipeline	[redacted]
Bospoort pipeline – rising main from Bospoort pump station to Bospoort North reservoir	Start: Oct 2014 End: Oct 2020	72	1.3 km x DN 500 mild steel rising main	Project management, hydraulic design, surge analysis, documentation and procurement	Analysing pump trips with and without a NRV on the line	Rustenburg Water Services Trust [redacted]
Bospoort pipeline – gravity main from Bospoort North reservoir to Boitekong	Start: Oct 2014 End: Oct 2020	72	8.3 km x DN 800 mild steel gravity main	Project management, hydraulic design, surge analysis, documentation and procurement	Analysing the closing of various inline isolating valves in 240 seconds along the pipeline	Rustenburg Water Services Trust [redacted]
Fleurhof bulk water pipeline	Start: Jun 2015 End: Oct 2017	27	1.6 km x DN 800; 2.1 km x DN 700, 1.8 km x DN 600 mild steel, 0.3 km x DN 500 HDPE gravity main	Project management, hydraulic design, surge analysis, documentation and procurement	Analysing the closing of the isolating valve within 180 seconds at the end of the pipeline	Calgro M3 Developments [redacted]
Ledig pipeline – pumping to the existing reservoir	Start: Nov 2017 End: Sep 2019	22	6.0 km x DN 300 uPVC pipeline rising main	Surge analysis and hydraulic review	Analysing a pump trips when pumping to the existing reservoir	Bakubung Minerals / Wesizwe [redacted]
Ledig pipeline – pumping to the new reservoir	Start: Nov 2017 End: Sep 2019	22	8.0 km x DN 300 uPVC pipeline rising main	Surge analysis and hydraulic review	Analysing a pump trips when pumping to the new reservoir	Bakubung Minerals / Wesizwe [redacted]
Clayville gravity pipelines	Start: Jul 2018 End: Aug 2019	13	Line 1: 0.3 km x DN 700, 1.4 km x DN 450 Line 2: 0.3 km x DN 700, 1.1 km x DN 600, 1.1 km x DN 500 Line 3: 0.3 km x DN 700, 1.1 km x DN 600, 0.5 km x DN 250	Surge analysis and hydraulic review	Analysing the closing of isolating valves within 60 seconds at the end of the various pipelines	Valuemax [redacted]

[redacted] List of at least five pipeline projects (including surge analysis) required

1. QUANTITY SURVEYOR (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty) Ltd Quantity Surveyor	BSc (QS) 1975 EPWP NQF 5 (2006)	SACQS PrQS [redacted] Association of South African Quantity Surveyors - Registration no. [redacted]	45

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] is a specialist in preparing Tender Documentation, Tendering Processes, Estimation, Pricing and Certification of Contracts in the Civil construction field. He has managed large scale projects such as Buildings, Roads, Sewerage Purification, Township Developments, Water Purification, Canals, Mass earthworks and Labour Intensive Construction contracts.

Specialisation:

- Estimation, Pricing and Certification
- Preparation of cost estimates
- Tender documentation
- Tender evaluation and recommendation of Contractors
- Monthly payment certificates on large projects

Experience & Comparable projects:

Tendering documentation, estimations, Project Management and Financial Management for the following disciplines:

Pipelines:

July 2003 to date:

- North South Carrier pipeline (Botswana), Project Value: R 6 000 million
- Levhuvu pipeline, Project Value: R200 million
- Steyn City pipeline, Project Value: R100 million
- Rand Water pipeline, Project Value: R200 million

Water Supply:

July 2003 to date:

- Temba Water Purification Works, Project Value: R 120 million
- Roodeplaat Water Purification Works, Project Value: R 250 million
- Rustenburg Sewage and Bospoort Water Purification Works, Project Value: R190 million
- Bospoort Water Purification Works, Project Value: R 35 million
- Albany Coast Bulk Water; Project Value: R 620 million
- Inyaka Water Purification Works Phase 2, Project Value: R 350 million
- Zeekoegat Sewage Purification Works, Project Value: R 500 million
- C6 Bulk Water Main for Rand Water, Project Value: R 350 million

Jan 1999 to June 2003:

- Bon Accord Irrigation channels – Pretoria, Project Value: R20 million

Jan 1988 to Dec 1996:

- Water Purification Works – Vereeniging, Project Value: R80 million
- Olifantsvlei Sewerage Purification – Johannesburg, Project Value: R80 million

Housing:

July 2003 to date:

- Lufereng Housing Development, Project Value: R 400 million
- Olievenhoutbosch Township Development, Project Value: R 500 million

Jan 1999 to June 2003:

- Woodhill Country Estate and Golf Course – Pretoria, Project Value: R40 million

Roads:

July 2003 to date:

- BRT Rustenburg, Project Value: R900 million
- Eskom/SANRAL roads construction, Project Value R950 million
- Various internal Road Projects, Project Value: R20 000 million

Jan 1999 to June 2003:

- Road between Pretoria and Bapsfontein, Project Value: R50 million
- BP Ultra City (Beyers Naude) Off ramp – Johannesburg, Project Value: R40 million

Commercial Development:

Jan 1997 to Dec 1998:

- Waterglen Shopping Mall – Pretoria, Project Value: R30 million
- Trade Centre – Pietersburg, Project Value: R25 million

1. ARCHITECT/SENIOR ARCHITECTURAL TECHNOLOGIST (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Osmond Lange Architects & Planners (Pty) Ltd – Senior Architect	MSc Arch 2014	SACAP Pr Arch [redacted] SAIA [redacted] GBCSA	30

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] of Osmond Lange Architects (OLA) is a qualified Professional Architect registered with SACAP with 30 years of experience in architecture, started practicing as an architect in 1989 working for one of the highly respected architectural firms in SA with multiple SAIA award winning Michael Munnik at the helm. In this period he gained experience as assistant architect to projects such as the award winning University of Western Cape's Library and new Entrance Promenade and Botanical department. Other public building projects included an auditorium extension to South African College Schools and new music department. This extension was done as a sensitive design to the historical style of the original building from the 19th century. In this period [redacted] also gained valuable experience and insight on the design of Cape Town landmarks such as Dolphin Beach apartments and the Terraces Tower Block in the CBD.

In 1992 [redacted] joined a large architectural and town planning practice, MLH Architects and Planners, with the following responsibilities (inter alia): Programme and Technical design, Contractual management of building contracts as Principal Agent, Marketing and Client liaison, Project Architect, Principal Consultant, Design Management Production planning and process planning for the office and consultant team for each project. This involved team allocation, assignment of responsibilities, work breakdown structures, monitoring, quality management and goal setting in design and liaison with the client to align wishes to production. During the period 1992 – 2006 [redacted] acted as principal architect on various public building type projects of significant scale, e.g. the Khayelitsha Magistrate's Court, Newlands Rugby Stadium Redevelopment for World Cup 1995 (50 000 seats), Athlone Soccer Stadium (new 25 000 seats), Peninsula Technicon Computer Centre (4000 computers) and the Foundry conversion and addition to large complex of historic buildings for re-use as themed commercial business centre.

In 2006 an invitation resulted in [redacted] starting an own practice with the remaining partner of a practice of 20 years at the time called Albertyn Viljoen Architects. Following the retirement of his partner to pursue personal goals and Francois' M.Sc Arch. studies in sustainability, the company moved to Cape Town and became AVNA Architects and Green Building Consultants (Pty) Ltd. In 2015 OLA & AVNA joined forces and [redacted] became a Director of OLA in 2016, supported by a team of experienced architects and architectural technologists. Francois also manages the activities and output of various engineering, environmental, safety and cost consultants to ensure satisfactory design outcome.

Specialisation:

- Sports stadia
- Office blocks/commercial
- Education facilities
- Clinics
- Industrial
- Residential

Experience with architectural input into similar industrial related projects:

[redacted] has been involved in various projects of related nature including a winery, brewery, hospital, laboratory as well as a waste transfer and recycling facility:

- Hout Bay Sewerage Pump Station
- University of Western Cape - new entrance, masterplan, gatehouse and nursery construction and final phases of library
- La Motte winery - tasting room and cellar extension
- Upgrade of Table Mountain aerial cableway
- Breweries masterplan and enclosure of silos
- CPUT Computer Centre building for 4000 workstations
- University Cape Town IIDM Laboratory building and Animal house.
- Red Cross Children's hospital
- Boehringer Ingelheim Laboratory upgrade
- Wasteman Industrial Waste Handling Facility
- Mayaro Fire Station (Trinidad & Tobago)
- Formscaff Industrial Facility
- Beaconvale Waste Transfer Station
- Cape Gateway mixed use development, 2013
- Masiphumulele & Makhaza Transport Interchange, 2013

Other related experience & comparable projects:

1. PROJECT MANAGER (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Bigen Africa Services (Pty)Ltd Principal	N Dip Civil Eng - 1993 N H Dip Civil Eng - 1995 B-Tech Eng: Civil-Water - 1997 PPM (Project Management) - 2001	Pr.Tech Eng, ECSA [redacted] Pr.CPM SACPCMP, Reg.no. [redacted] IMESA – member No. [redacted] (Professional) SAICE - member No. [redacted] (Member)	27

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] **is a registered Professional Construction Project Manager (Pr.CPM) and Professional Engineering Technologist (Pr.Tech Eng)** specializing in **Project/Programme Management** (Public and Private), **Principal Agent**, Institutional Management and Business Re-engineering. In this regard he has valuable experience in projects such as National Treasury, Department of Water and Sanitation, Department of Basic Education - Schools, Provincial Government and Municipal Capital Infrastructure Programmes, Reconstruction and Emergency Programs, Water Services Development and Institutional Integration of the Mining Sector (Water) within South Africa. He disposes of the skills, training and experience to successfully manage and implement projects and management programmes of any size, nature and scope. In addition, [redacted] has been responsible for the project management, planning, design, construction and commissioning of various bulk and internal water and sewage treatment projects, including pump stations, pipelines, roads and appurtenant structures.

Specialisation:

- Programme and Project Management (public & private)
- Principal Agent
- Infrastructure Development (multi-disciplinary)
- Institutional Management
- Business Re-engineering

Experience & comparable projects:

- Principal Agent and Project Manager (multi-disciplinary teams) for the implementation of ASIDI 61 DBE Schools programme in the Eastern Cape – R 500 million.
- Project Manager and Project Leader for Institutional Integration of the Mining Sector re the Joint Development Forum (JWF – 24 mining Companies) together with DWS and stakeholders on the Olifants River Water Resource Development Project (ORWRDP) to achieve water resource sustainability and secure future access for all water users. Activities include Strategic Direction, Planning, Policies, V&V, Stakeholder Engagement, Tariffs and CMA engagements – estimated Capital value R12 billion.
- Provision of Professional Services in Infrastructure Planning and Project Implementation Support to DBSA-Client and KZN Municipalities through a Provincial PMU under KZN CoGTA – Water and Sanitation Master Planning, Roads and electricity – R800 million.
- Programme Manager on KZN CoGTA Municipal Infrastructure Capex Implementation support –Water and Sanitation, Roads, Electricity – R12 million.
- Programme Manager on National Treasury NDPG Programme – Infrastructure and multi- disciplinary Projects – R610 million.
- Project Manager for National Department of Agriculture Flood Disaster Relief Scheme, Land Bank NDA – R23 million.
- Project Management Assistance to DWS in respect of Flood Damage Repairs to Water Works owned by Irrigation/ Water Boards: National – R25 million.
- Assistance to the DWS Command Centre for the Emergency Reconstruction of the summer 2000 Floods – R1.15 billion.
- Project Manager for Temba Portion 9: Bulk and Link Services – Construction of Main Taxi Routes and Associated Storm water Drainage – R7.6 million.
- Temba Sewage Treatment Plant Phases II & III – R40 million.
- Dumezulu: Pipeline to Spago Dam, Nelspruit – R8 million.

1. OCCUPATIONAL HEALTH AND SAFETY (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Safe Working Practice Cape Town (Pty) Ltd – Safety Consultant	NEBOSCH Nat Cert (Health and Safety) 1998 B.Tech (Environmental Health) 1996 N Dipl (Env Health) 1994 N Dipl (Public Health) 1991	SACPCMP Construction Health and Safety Agent: PrCHSA/[redacted]	25

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] of Safe Working Practice is a registered Professional Construction Health and Safety Agent (PRCHSA) with SACPCMP and has 25 years of experience in the health and safety field. [redacted] also has experience in developing health and safety documentation and safety management systems, conducting site safety evaluations, presenting safety training courses, preparation of baseline risk assessments and site specific safety specifications, strategies and advising clients on construction health and safety issues. [redacted] is well known in the health and safety industry, and was chairperson of the Western Cape branch of the Institute of Safety Management in 2010 and was awarded the "Safety Professional of the Year" in 2011. Safe Working Practice is a member of, and professionally registered with, various health and safety organisations including ACHASM, SAIOSH and IOSM.

Specialisation:

Application and monitoring of Occupational Health and Safety Act in the construction environment

Experience as an OHS Agent:

With reference to his CV, [redacted] has been involved in various projects as OHS Agent. His specific project related experience includes:

- Athlone Stadium - Upgrade of Fire Water Installation
- Upgrading of Roads and Stormwater in Saron
- Replacement of Water Main and Fire Main Pipelines - Tygerberg Hospital
- Construction of Sewer and Water Connections for Waldorf School – Kommetjie
- Construction of Bulk Water - Stellenbosch Arterial
- Construction of F4A water pipeline between Moorreesburg and Riebeek Kasteel
- Project 2 - Bishop Lavis, Area D2, Water meters
- Upgrading of the Inlet Works at the Mitchell's Plain WWTW
- Borcherds Quarry WWTW Inlet Works
- Odour Control at Cape Flats WWTW
- Upgrade and Extension of the Wellington WWTW
- Upgrade of Membrane Bio-reactor at Zandvliet WWTW
- Cape Flats WWTW Digestors
- Stellenbosch University - LGS Precinct in Stellenbosch - Decanting Building & Gatehouse & Sewerage Re-route / Bulk Water Line
- 133Q/2017/18 - Zandvliet Wastewater Reuse - Bulk Pipeline to Faure
- Capensis - Additions & Alterations to existing warehousing structures - Water Connections, Including the construction of the Chambers
- Monwabisi Park - Khayelitsha, laying of bulk water and internal sewers and sidewalks along Mew Way

His responsibilities on all of the above projects were:

- Acting as construction health and safety agent for the project
- Compilation of baseline risk assessments and site specific health and safety specification
- Evaluation of health and safety plans
- Monitoring and supervision of health and safety standards on site
- Meeting attendance as required

[redacted]

ENVIRONMENTAL SERVICES **(MINIMUM 1 ENVIRONMENTAL ASSESSMENT PRACTITIONER)**

1. ENVIRONMENTAL ASSESSMENT PRACTITIONER (NAME): [redacted]			
NAME	**TARRYN SOLOMON**	NO. OF YEARS POSTGRADUATE EXPERIENCE	11 years
EMPLOYER AND CURRENT JOB TITLE	Infinity Environmental (Pty) Ltd Director / Principal Environmental Assessment Practitioner	**Qualifications**	**Date obtained**
		B.Sc Environmental and Water Sciences	March 2011
Registered with EAPASA	No, but application submitted on 9 December 2020 EAPASA Application Reference Code.: [redacted]	Note: The Minister of Environmental Affairs in February 2018 gazetted regulations that make the Environmental Assessment Practitioners Association of South Africa (EAPASA) the sole registration authority for Environmental Assessment Practitioners. Subsequent regulations extended the date on which registration will become a legal requirement for practicing environmental assessment to 8 February 2022. Criteria for registration include practicing for three or more years and completing three or more impact assessments.	

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Profile:

[redacted] of Infinity Environmental (Pty) Ltd has more than twelve years' experience in environmental consulting, having worked in the field since 2007. [redacted] has diverse experience in all aspects of integrated environmental management and has steered several large-scale projects for public- and private-sector clients in the infrastructure and housing sectors. Her in-depth knowledge of environmental legislation, policy, institutional structures, and practice, nationally and in the Western Cape, underpin excellent technical skills in the implementation of environmental assessment and management.

Specialisation:

- Advising public and private-sector clients on environmental feasibility, legislation, and risks
- Managing Environmental Impact Assessment (EIA) and Basic Assessment (BA) processes for environmental authorisation
- Development of environmental policy and analyses for strategic and spatial planning instruments
- Planning for construction- and operation-phase environmental management, including preparation of site-specific environmental management programmes (EMPr)
- Management of permitting and licensing processes for air emissions, water uses, waste management, and mining
- Monitoring and auditing of environmental compliance as an Environmental Control Officer (ECO) or independent auditor
- Lifespan environmental compliance, including the management of decommissioning and contaminated land processes
- Public participation and stakeholder engagement, including planning and facilitation of consultation
- Facilitates Environmental Awareness Training.
- Provides independent external review of environmental assessments
- Operational environmental management auditing

Experience with Environmental Impact Assessment for infrastructure projects:

- Environmental Impact Assessment for a proposed high-density social housing and mixed-use development in Salt River, Cape Town (Basic Assessment)
- Environmental Impact Assessments for two in-fill housing developments in Bonteheuwel (Basic Assessments)
- Environmental Impact Assessment for the development of 500 hectare Swartklip site, and associated infrastructure on Erf 52676, Khayelitsha (full Scoping and EIA)
- Environmental Impact Assessment for the Distell Facility, Mixed-Development and associated infrastructure on Farm 736/RE, Klapmuts, Paarl (full Scoping and EIA)
- Environmental Impact Assessment for the proposed new Tygerberg Medical Depot at Tygerberg Hospital (Basic Assessment)
- Environmental Management Programme for the replacement of the water distribution system at Klawer Valley, Simonstown Cape Town

[redacted]

FRESHWATER ECOLOGIST (MINIMUM 1 PROFESSIONAL)

(BULK WATER, CATCHMENT STORMWATER AND RIVER MANAGEMENT, RETICULATION AND WASTEWATER TREATMENT BRANCHES ONLY)

1. FRESHWATER ECOLOGIST (NAME): [redacted]			
EMPLOYER AND CURRENT JOB TITLE	QUALIFICATIONS AND DATES	ASSOCIATION AND PROFESSIONAL REGISTRATION NO.	NO. OF YEARS POSTGRADUATE EXPERIENCE
Freshwater Consulting cc Partner and Senior Consultant	PhD (Freshwater Ecology) 2012 MSc (Marine Biology) 1998 BSc Hons (Marine Biology) 1994 BSc (Environmental and Geographical Science & Zoology) 1993	Registered Professional Natural Scientist by SACNASP (Reg No [redacted]	21

RELEVANT FIELDS OF SPECIALIZATION, EXPERIENCE AND COMPARABLE PROJECTS

Specialisation:

- Specialist ecological and water quality assessments for wetlands and rivers
- Freshwater ecological and water quality monitoring, including the development of monitoring design and protocols.
- Water Resource Management and Ecological Reserve Determinations
- River and wetland rehabilitation
- Research and development
- Project management and co-ordination of specialist teams

Experience & comparable projects (key projects only):

Ecological Monitoring:

- Table Mountain Group Aquifer (TMGA): hydro (geo) logical and Ecological Monitoring (2018-2021)(Client: City of Cape Town: Bulk Water).
- Ecological and Water quality monitoring of the Groot River, Meirings Poort, following a diesel spill (2017-2020) (Client: Envirosure).
- Baseline assessment and ecological monitoring of the Ecological Condition of the Blinde River, Mosselbay (2013-2014) (Client: PetroSA).
- TMGA Ecological and Hydrogeological Monitoring (2010-2013) (Client: City of Cape Town: Bulk Water).
- Berg River Baseline Monitoring Programme (2003-2006) (Client: Department of Water Affairs).

Wetland and river assessments:

- The New Water Project (2018-2020) (Client: City of Cape Town: Bulk Water).
- Assessment and evaluation of potential impacts to freshwater ecosystems associated with effluent discharge, Klip River, Swellendam. (2020) (Client: Southern Oil (Pty) Ltd).
- Potential development of Franschhoek Pass Estate, Western Cape. Basic Assessment: Freshwater Ecosystems (2020) (Client: Fivefold Investments).
- Proposed development of Erf 660-RE, Hout Bay, City of Cape Town. Constraints Analysis: Freshwater Ecosystems (2018) (Client: Variflex Trading 64 (Pty) Ltd).
- Potential impacts to freshwater ecosystems associated with the Zoar and Amalienstein agricultural development feasibility study (2017-2018) (Client: Casidra).
- NEMA section 24G Rectification Application for a Weir and Pipeline on Farm 781, Botrivier (2017) (Client: Erin de Vigne (Pty) Ltd).
- Pinotage (Firgrove), Substation, Somerset West. Estimation of wetland extent to offset wetland loss (2017) (Client: Eskom Holdings SOC Limited).
- National Strategic Environmental Assessment (SEA) for strategic electricity grid infrastructure corridors throughout SA (2015) (Client: Department of Environmental Affairs).
- National Strategic Environmental Assessment (SEA) for the efficient and effective rollout of wind and solar photovoltaic (PV) energy (2014) (Client: Department of Environmental Affairs).
- Development of a comprehensive GIS Wetland layer for the City of Cape Town (2008) (Client: City of Cape Town).
- Lake Victoria Environmental Management Project: Pilot study on sedimentation and sediment characteristics on Nyando and Nzoia river mouths and Winam Gulf of Lake Victoria (2004-2005) (Kenyan Agricultural Research Institute).

Water Resource Management and Ecological Reserve Determinations:

- Integrated flow assessment for the Luangwa Basin, Zambia, Phase 1 (2016), Phase 2 (2017-2018) (Client: WWF).
- Development of procedures to operationalise Resource Directed Measures (RDM) (2016-2017) (Client: Department of Water & Sanitation: RDM directorate).
- Shale Gas Development in the Central Karoo: A Scientific Assessment: Surface Water Resources (2016) (Client: CSIR).
- Batoka Hydropower Plant on the Zambezi River (2014) (Client: Zambezi Water Authority).
- Flow assessment for the Neelum-Jhelum Hydropower Project, Pakistan (2012-2013) (Client: Hagler-Bailly Pakistan).

- Implementation of Instream Flow Requirements Biophysical Monitoring Procedures Downstream of Phase 1 Dams (2005) (Client: Lesotho Highlands Development Authority (LHDA).

Research:

- Developing a refined suite of tools for assessing the Present Ecological State of wetland ecosystems (2017-2019) (Client: Water Research Commission (WRC).
- The Development and Application of Periphyton as indicators of Flow and Nutrient alterations for the management of Water Resources in South Africa (2014-2017) (Client: Water Research Commission).
- Consolidation and optimization of wetland health assessment methods through development of a decision support tree (DST) (2013-2014) (Client: Water Research Commission).
- Development of a National Wetlands Classification System for South Africa (2005-2006) (Client: SANBI and WRC).

Rehabilitation:

- Road Repairs due to flooding near Montague. Freshwater Ecological Assessment (2014) (Client: Department of Transport and Public Works).
- Rehabilitation of wetland areas following construction activities for the laying of the Driftsands Sewer Bypass Pipeline (2012) (Client: City of Cape Town).
- Rehabilitation and management of Rhamtha Lagoon, Al Wasit Nature Reserve, Sharjah Emirate (2005) (Client: Dr Sheikh Sultan bin Mohammed Al Qasimi, UAE Supreme Council member).

Review:

- Determination of Water Resources Classes and associated Resource Quality Objects in the Berg CMA: Wetland Report (2018) (Commissioned by Aurecon South Africa (Pty) Ltd) (Client: Department of Water and Sanitation)
- Determination of Water Resources Classes and associated Resource Quality Objects in the Breede-Gouritz CMA: Wetland Report (2017) (Commissioned by Aurecon South Africa (Pty) Ltd (Client: Department of Water and Sanitation)
- Reserve Determination Studies for the selected surface water, groundwater, estuaries and wetlands in the Gouritz Water Management Area. Wetland Report (2015) (Commissioned by AECOM SA (Pty) Ltd (Client: (Client: Department of Water and Sanitation)

SIGNED ON BEHALF OF TENDERER..... [redacted] .....

ANNEX 4

SCHEDULE 12: SUPPORT RESOURCES

SCHEDULE 12: SUPPORT RESOURCES

The tenderer is referred to clause C.2.1.4.3 of the Tender Data and shall state below what software packages are available for use on this project and whether or not they are currently owned/licensed by the tenderer, or are available through other means.

SOFTWARE PACKAGE/S AVAILABLE FOR USE		
NAME OF PACKAGE	DESCRIPTION	CURRENTLY OWNED/ LICENCED OR OTHER
Hydraulic design analysis		
SOFTFLO, STARCCM	Software to model hydrodynamic and process behavior	Leased
EXCEL	In-house developed hydraulic calculations	Freely available
KYPIPE PIPE 2010 / 2014	Water hammer analysis	Bigen licensed
CIVIL DESIGNER	Civil infrastructure design	Part of Bigen "Civil Designer" license
Water network analysis		
WADISO	Hydraulic analysis for water pipeline networks	Bigen licensed
EPANET	Similar to WADISO	Freely available
WATERMATE	Hydraulic analysis for water pipeline networks	Part of Bigen "TechnoCad Civil 3D" license
Sewer analysis		
SEWSAN	Hydraulic analysis for sewer networks	Bigen Africa licensed
PIPENET	Hydraulic analysis for sewer networks	Part of Bigen "TechnoCad Civil 3D" license
Stormwater analysis		
PCSWMM 2D	Stormwater network analysis	Bigen licensed
HECRAS (1D & 2D)	Open channel flow	Freely available
Structural design		
PROKON	Structural analysis and design	Bigen licensed
TEDDS	Structural analysis and design	Bigen licensed
STRAP	Post-tension structural analysis design	Bigen licensed
EXCEL	Spreadsheets for the analysis design of post-tensioned reservoir wall design, determination of reinforcement for thermal effects and design of concrete sections for combined axial tension and flexure	General

ANNEX 5

SCHEDULE 18: ADDITIONAL PERSONNEL SCHEDULE

[redacted]

CITY OF CAPE TOWN
WATER AND SANITATION
CONTRACT NO. 194C/2020/21
TERM TENDER FOR THE PROVISION OF MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE WATER AND SANITATION DEPARTMENT OF THE CITY OF CAPE TOWN

SCHEDULE 18: ADDITIONAL PERSONNEL SCHEDULE

The Tenderer is referred to clause C.2.1.4.6 of the Tender Data and shall inserted in the spaces provided below details of the additional personnel required to be in its permanent employment at the close of tender. Alternatively, signed undertakings from specialist consultants/firms having the required additional personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of sub-consultant agreements, will be acceptable. Such undertakings must be attached to this schedule.

Different individuals must be identified for each of the additional personnel listed below. The Service Provider may propose to use the same additional personnel for different branches when tendering to provide multidisciplinary professional services for more than one branch.

A brief *curriculum vitae* **(maximum of 3 pages is preferred)** of all additional personnel (including sub-consultants), must also be submitted with the tender submission, appended to Schedule 18.

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
Civil Engineering Services	[redacted]	B Eng (Hons) (Urban Eng) - 2003 B Eng (Civil) - 2002 ECSA Pr Eng [redacted]	17 years' experience in: • Project Management • Design • Contract tendering and management • Construction supervision • Financial Management • Township development services (Roads, Storm water, Sewer and Water), as well as bulk water distribution scheme	17	Bigen Africa Services (Pty) Ltd
	[redacted]	BSc (Eng) - 2009 ECSA Pr Eng [redacted]	11 years' experience in: • Municipal infrastructure master planning and detail design: Roads, stormwater, telecommunication reticulation, water and sewage reticulation and pump stations. • Project Documentation: Tender documentation and drawings. • Bulk Earthworks modelling and design. • Project Management: Site supervision, administration, management.	11	Bigen Africa Services (Pty) Ltd
	[redacted]	BTech Eng (Civil) - 2012 NDE Civil – 2007 PR Tech [redacted]	13 years' experience in: • Municipal infrastructure masterplanning and detail design: Roads, water and sewage reticulation and pumpstations. • Project Documentation: Tender documentation and drawings.	13	Bigen Africa Services (Pty) Ltd

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
			• Bulk Earthworks modelling and design. • Project Management: Site supervision, administration, management		
Structural Engineering Services	[redacted]	B Eng (Civil) - 2012 Pr Eng [redacted]	8 years' experience in: • Reinforced concrete design • Structural steel design • Composite structure design • Masonry design • Project management and administration • Institutional, commercial, industrial and retail projects • Conceptual design • Civil Structures • Finite Element Analysis and Design	8	Bigen Africa Services (Pty) Ltd
	[redacted]	BSc Eng (Civil) - 2017	3 years' experience in reinforced concrete design and detailing: • Small water works – valve chambers, water channel • Clearwater tanks • Pump house/stations • Pipe crossings • Culverts, wingwalls • Outlet valve structures • Reservoir structures	3	Bigen Africa Services (Pty) Ltd
Mechanical Engineering Services	[redacted]	B Eng (Electro-Mech) - 2012 ECSA Pr Eng [redacted]	8 years' experience in: • Mechanical engineering • Maintenance engineering • Project management • Water and waste water treatment	8	Bigen Africa Services (Pty) Ltd
	[redacted]	BSc B Eng (Mech) – 1970 ECSA Pr Eng [redacted] PMP - 2009	49 years' of experience in: • HVAC and Mechanical Building Services (30 years) • Project Management of mechanical installations(15 years)	49	MJ Botha Consulting Engineers

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
Electrical Engineering Services	[redacted]	Pr Eng Tech [redacted] B Tech (Elect) - 2017 N Dipl (Elect) - 2000	12 years' experience in: • Medium and Low Voltage Distribution Design (municipal waste and water treatment plants) • Load calculations (municipal waste and water treatment plants) • Motor Control Centers Designs, • Process Control, • Control and instrumentation, • Road, Lighting and Site Lighting Designs • Lightning Designs • Fault Current Designs • Motor starting analysis, characteristics and designs • Energy optimization studies and designs • Industrial Communication Distribution designs • Network Designs • Fire Detection designs • Access Control designs • Security Designs	12	Bigen Africa Services (Pty) Ltd
	[redacted]	ECSA Pr Techni Eng [redacted] SAIEE No [redacted] IESSA (lighting design engineers) N. Dipl (Electrical) -1987 Dipl Proj Man - 1990	33 years' experience in: • Design and implementation of Electrical Building Installations. • Design and implementation of Electrical Industrial Installations. • Design and implementation of Electrical installation Water/Sewer works. • Design and implementation of Medium/Low Voltage Reticulation Projects. • Electrical Energy Saving Projects. • Standby Generation and Uninterrupted Power Systems. • Telemetry and Scada Control Systems. • Project Management of Electrical Projects	33	Bigen Africa Services (Pty) Ltd
	[redacted]	ECSA Pr Tech Eng [redacted] NHDT, T4 (Heavy current) - 1985	36 years' experience in: • Township reticulation design • Transmission and Distribution • Building Services design • Infrastructure Planning • Contract management and administration	36	Bigen Africa Services (Pty) Ltd

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
			• Quality Control • Site monitoring		
Quantity Surveying Services	[redacted]	SACOS Reg IT [redacted] BSc (QS) (Hons) - 2010	10 years' experience in: • Site monitoring • Valuations for interim certificates • Preparing main and subcontract tenders Adjudicating suitable tenderers • Preparing and using cost data • Cost estimates • Evaluating and negotiating contractual and extra contractual issues • Preparing bills of measurement for final accounts	10	Bigen Africa Services (Pty) Ltd
	[redacted]	BTech (QS) - 2019	3 years' experience • Cost estimation • Valuation for Monthly payment certificates • Final accounts/Closeout Reports - Measuring • Condition Assessment and reports on buildings and facilities	3	Bigen Africa Services (Pty) Ltd
Architectural Services	[redacted]	MSc.Arch – 2007 Pr.Arch - 2010	• Residential – 9 years • Offices/commercial – 5 years • Mixed use developments – 5 years • Industrial – 4 years • Clinics – 3 years	10	Osmond Lange Architects & Planners (Pty) Ltd - Architect
	[redacted]	B.Arch - 2003	• Health Care – 9 years • Offices/commercial – 12 years • Mixed use developments & master planning – 10 years • Industrial – 12 years	17	Osmond Lange Architects & Planners (Pty) Ltd
Geohydrologist Category B	[redacted]	(SACNASP) Mem. No. [redacted] Groundwater Division of the Geological Society of South Africa – Member No. [redacted] M.Sc. (Geohydrology) - 2010	• Groundwater component of Catchment Management Strategies and other Groundwater Resource Directed Measures. • Groundwater exploration - (aerial photo interpretation, resistivity, magnetic and EM34 geophysical surveys for borehole siting purposes) • Groundwater development - borehole drilling and test pumping supervision and analysis. • Groundwater monitoring –development and analysis of groundwater level and quality data. • Groundwater management – sustainable aquifer development and management.	12	GEOSS South Africa (Pty) Ltd

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
			• Numerical modelling of groundwater flow and mass transport. • Groundwater contamination assessments. • GIS / WISH and GW Vistas and typical software skills.		
Geohydrologist Category C	[redacted]	(SACNASP) Mem. No. [redacted] Groundwater Division of the Geological Society of South Africa – Member No. [redacted] BSc Hons (Environmental Geochemistry) - 2015	Business Unit Leader - Yield and Quality Testing • Groundwater exploration and groundwater geophysical surveys, borehole drilling and yield testing supervision, borehole camera logging, • yield test data analysis for aquifer parameters and sustainable yields, wellfield testing, monitoring and management, prefeasibility and • Feasibility assessments in Managed Aquifer Recharge.	5	GEOSS South Africa (Pty) Ltd
Geohydrologist Category C	[redacted]	(SACNASP) Mem. No. [redacted] Groundwater Division of the Geological Society of South Africa – Member No. [redacted] BSc Hon (Geology: Environmental Geochemistry) (2011)	• Groundwater exploration (aerial photo interpretation, geological mapping, geohydrological conceptualization, geophysical surveys; resistivity, magnetic and electromagnetic methods) • Groundwater development (borehole drilling and test pumping supervision/management, test pumping data analysis to determine aquifer parameters and sustainable borehole yield) • Groundwater quality assessments (including groundwater contamination and remediation assessments) • Groundwater monitoring & resource management (development and analysis of groundwater level and quality data, sustainable aquifer development and management) • Groundwater legal use authorisation (experience in Water Use Licence Applications (WULAs)) • GIS/WISH/FC Method/PHREEQC and typical software skills.	6	GEOSS South Africa (Pty) Ltd
CAD Operator/ Draughting personnel	[redacted]	N6 (Mech) - 1994	23 years' experience in: • Design and draughting of bulk water supply schemes • Design and draughting of outfall sewer pipelines • Draughting of water and waste water treatment plants • Design of water reticulaions • Draughting of townshipo services • GIS Operator	23	Bigen Africa Services (Pty) Ltd

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
	[redacted]	N Dip N5 – 2015	5 years' experience in: • Revit Modeller and efficient in Basic AutoCAD, Advance Revit and Multi-Disciplinary Draughting and responsible for: • On-site services drawings • Preparing detail drawing of water treatment plant buildings • Producing good quality of drawing according to standard with check list • Working with reasonable speed to meet Client's norms • Maintain and update electronic drawings and document	5	Bigen Africa Services (Pty) Ltd
	[redacted]	Mechanical Drawing N4 – 1985 Technical Drawing N3 - 1984	30 years' experience in Structure and reinforcement details, • pump stations • reservoirs • bridges • concrete of dams and canals	30	Bigen Africa Services (Pty) Ltd
	[redacted]	National Certificate Multi-Disciplinary Drawing Office Practice - 2016	4 years' experience: • Designing of MV/LV infrastructure • Simulation of MV/LV networks on ReticMaster • Designing of streetlighting networks both private and council specification • Simulation of streetlighting on Relux and Ulysse • Advanced knowledge of AutoCAD	4	Bigen Africa Services (Pty) Ltd
GIS Technician	[redacted]	BSc (Hons) - 2017	• Groundwater GIS / databases; data processing; data analysis and data presentation. Highly competent in the use of data bases and geodatabases (MS Access and ESRI ArcGIS geodatabases). • Spatial data creation and analysis using ArcGIS 10. Image interpretation and classification: using Image Analysis -ArcGIS 10. Database-orientated programming using HTML, and Javascript. Database creation and maintenance utilising SQL Server, mySQL, MS Access and ESRI Geodatabases. GIS training (specifically in ESRI products). • Highly competent in the production of the necessary maps to support geohydrological reports. • Spatial data creation and analysis using ArcGIS (ESRI products) • Image interpretation and classification: using Spatial Analyst-ArcGIS 10 • Database-orientated programming using HTML and Javascript • Database creation and maintenance utilising SQL Server, mySQL, and MS Access	2.5	GEOSS South Africa (Pty) Ltd

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable]	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
	[redacted]	Plato (GTT 1605) Dipl GI Science - 2014	• Management of geodata bases • Set up of GIS standards • Spatial analyses • Set-up of rezoning control of data and geodata bases • Managing and reviewing of spatial data • Mapping of layouts per project specifications	11	Bigen Africa Services (Pty) Ltd

SIGNED ON BEHALF OF TENDERER:.....[redacted].....

[redacted]

Other Additional Personnel (Specialist Services): NOT REQUIRED AS PER ADDENDUM 2 but included to demonstrate team capability

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
Conveyancer	[redacted]	LL.B – 2013 B.Tech (Town & Regional Planning) - 2001	9 years' experience in: • Township and Property Development • Land Use Planning, Environmental and Heritage Law • Town planning related matters, ie rezoning and subdivision applications • Property Commercial Law o Drafting of property related agreements o Due diligence investigations • Lease agreements • Commercial property transactions • Sale and purchase agreements • General property matters and related transactions which include rendering legislative and regulatory advice	9	Werksmans Attorneys
	[redacted]	BA LLB - 1994 BA Hons Psych - 1999 Admitted Attorney - 2001 Admitted Conveyancer - 2002	Conveyancer and litigation attorney	19	Kemp Nabal Inc.
Public Participation Practitioner (Lead)	[redacted]	HND Mech. Eng. (CPTU) -1975 BA Dipl. GSB University of Cape Town -1980 MDP GSB Stellenbosch University- 1988 Dipl. Proj. Management (UCT)	26 years' experience in: • Project Management • Research • Stakeholder Engagement • Communications • Conflict Resolution	26	Sakaza Communications (PtyP Ltd.
Environmental Control Officer	[redacted]	B.Sc. Hons Environmental and Geographical Science - 2013 EAPASA Registered EAP	7 years' experience in: • Construction environmental management for large-scale infrastructure projects • Preparation of environmental management plans • Monitoring and auditing of public-sector construction projects	7	Infinity Environmental (Pty) Ltd
Environmental Assessment Practitioner Assistant	[redacted]	M.Sc - 2006	• Environmental impact assessment • Environmental public participation	3	Infinity Environmental (Pty) Ltd

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
Environmental Auditor	[redacted]	M.Sc - 2006 SAATCA	14 years' experience in Environmental Management Systems (EMS), including ISO 14001 and in environmental compliance auditing and site monitoring	14	Infinity Environmental (Pty) Ltd
Heritage assessment practitioner	[redacted]	M Phil (Conservation Built Environment) B Tech (Town & Regional Planning) - 2001	Over 20 years' experience in: • Heritage resources management, including: • Nomination • Heritage impact assessment in terms of the National Heritage Resources Act, and • Nomination and declaration of heritage sites	21	Vidamemoria
Botanist	[redacted]	BSc (Hons) Botany -1990 Pri Sci Nat [redacted]	22 years' experience in botanical consulting, including over 1600 botanical assessments of proposed development sites in the Western and Northern Cape provinces	22	Nick Helme Botanical Surveys
Horticulturist	[redacted]	National Diploma in Horticulture - 1983 M.Sc. in Botany – 2011 Cert.Nat.Sci	34 years' of experience in: Rehabilitation and landscape design	34	Vula Environmental Services
Marine biologist	[redacted]	PhD Marine Biology -1997 Pri Sci Nat	28 years' experience in: • Marine biological research and consulting on coastal zone and marine issues, including: • Monitoring and assessment of human impacts on estuarine, shoreline and marine environments • Coastal and littoral zone processes • Aquaculture and fisheries	28	Anchor Environmental
Landscape Architect	[redacted]	Pr L Arch, Pr Arch SACLAP, SACAP ILASA, SAIA, CIA Bachelor of Architecture (BArch) UCT - 1982 Masters in Landscape Architecture (MLA) - 2013	+30 years' experience in: Landscape Architecture Management • Landscape Architecture Design • Master Planning • Landscape Detail • Architecture Design	30	OvP Associates cc

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
	[redacted]	Pr L Arch, Pr Arch, SACLAP, SACAP ILASA, SAIA, CIA Bachelor of Architecture (BArch) Wits - 1989 Masters in Landscape Architecture (MLA) - 2020	+20 years' experience Landscape Architecture Management • Landscape Architecture Design • Landscape Detail • Architecture Design and Management	20	OvP Associates cc
Groundwater Quality Specialist (Geochemist)	[redacted]	SACNASP Reg. no [redacted] PhD (Geology) - 2006 MSc (Environmental Geochemistry) - 2001	• Detailed interpretations of large groundwater and surface water chemistry datasets for contaminated sites as well as for regional water quality assessments in order to develop conceptual site models, provide insights into groundwater flow patterns, age of groundwater, surface water-groundwater interaction, impacts to surface and groundwater etc. • Conducting qualitative and quantitative human health risk assessments to determine whether groundwater is safe for human use. • Contaminated site assessments across South Africa at sites impacted with organic and inorganic contaminants, including planning and implementing field work, data interpretation, reporting, fate and transport modelling, human health risk assessment modelling and development of remediation plans. • Reviews of water quality monitoring programs to improve data quality, to improve data management, to ensure robust and defensible sampling techniques and to optimize the frequency and distribution of monitoring. • Acid rock drainage and metal leaching investigations, as well as geochemical modelling, for waste rock and discard materials associated with several commodities, including base metals, coal, uranium, iron ore and gold. • Waste classification assessments in terms of GN635 and GN636 for wastes from mining and other industries. • Development of geochemical models using Phreeqci geochemical modelling code (saturation indices, speciation, mixing, evaporation, reactive transport).	17	Mills Water Independent consultant specialising in environmental geochemistry
Geophysicist	[redacted]	(SACNASP) Mem. No. [redacted] BSc (Hons) Exploration Geophysics – 1987 BSc - 1986	Germany, (Bad Saulgau), ABU, 2004-2009, Geophysicist, Resistivity investigations on glacial gravel deposits Stella municipality, DWAF, 1989, Geophysicist, Municipal water supply Kruger National Park, DWAF, 1989, Geophysical team leader, Drought relief Clayville, DWAF, 1989, Geophysicist, Gravity investigation for waste disposal site. Walvisbay, DWAF, 1990, Geophysical team leader, Aquifer investigation for municipal water supply. Greefswald, DWAF, 1990, Geophysicist, Primary aquifer investigation and evaluation of the ground-penetrating radar technique.	32	Cape Geophysics

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
			Lambert Bay, DWAF, 1991, Geophysical team leader, Gravity investigation on the Graafwater primary aquifer Pomfret, DWAF, 1990. Geophysicist. Municipal water supply Humansdorp, Botrivier, Albertinia, Jeffrey's Bay, Hermanus, DWAF, 1991, Geophysicist, Evaluation of geophysical techniques for groundwater exploration in Sandstone formations. Kalahari, DWAF, 1991, Geophysical team leader, Extensive gravity survey on the Kalahari aquifer. Eastern Cape, DWAF, 1990, Geophysicist, Magnetic modelling of post Karoo diatremas Witsand (NW Cape), DWAF, 1992, Geophysical team leader, Gravity and radar surveys on primary aquifer. Bophuthatswana, VSA Geo-consultants, 1993, Geophysicist, Rural water supply, geophysical borehole siting. Richtersveld, DWAF, 1988, Geophysicist/team leader, Geophysical borehole siting Kwa-Zulu Natal, VSA, 1994, Geophysicist, Rural water supply Stanford, Umvoto Africa, 1997&2009, Geophysicist, Gravity & Magneto-Telluric investigation. Lutzville, Namakwa sands, 2004, Geophysicist, Resistivity surveys for groundwater exploration Kalbaskraal, Cape Town Municipality, 2004, Geophysicist, Resistivety investigation on proposed waste disposal site. Western Cape, Melis & du Plessis. 2004, Geophysicist, Shallow resistivity investigations for geotechnical support. Western Cape, L.C Consultants, Dakar(Senegal), 2004, Geophysicist, Shallow resistivity imaging investigation for foundation investigation. WC, Private, 1995 – present, Geophysicist, Geophysical investigation for private groundwater exploration. Secunda, University of the Western Cape, 2006-2010, Geophysicist, Resistivity investigations on coal-ash dump sites. Velddrift Salt, 2007-1009, Geophysicist Brine aquifer investigation Witsand, Breedezight development, 2009, Geophysicist, Water supply Port Elizabeth, Groundwater Afica, 2010- 2011, Geophysicist, Multi Geophysics (Gravity, Resistivity, Electromagnetics, Mt) for groundwater exploration. Port Elizabeth, Maitland beach, WSP Africa Coastal Engineers, 2011, Geophysicist, Resistivity investigations beach area. Plettenberg Bay, Groundwater, Africa, 2010, Geophysicist, Groundwater Exploration		

[redacted]

SERVICE	NAME	QUALIFICATION AND DATE	AREA(S) OF EXPERTISE (with years of experience, where applicable)	YEARS OF EXPERIENCE	EMPLOYER/ COMPANY
			Northern Cape, Transnet, 2010, Geophysicist, Groundwater exploration for Sishen railway Limpopo, VSA Leboa (PTY) Ltd, 2004-Present, Developer, Development and implementation of a filtration system for contaminated borehole water at schools and clinics.		
Groundwater modeller	[redacted]	SACNASP Professional Natural Scientist - Registration Number [redacted] Groundwater Division of the Geological Society of South Africa – Member MSc Hydrogeology (Distinction), University of Birmingham (UK) - 2006	• Experience in the wide-ranging aspects of groundwater resources management. • She specialises in numerical groundwater modelling and has applied modelling for water resource quantification and scenario planning, for the determination of wellfield operating rules, for quantification of surface water – groundwater interactions, and in the groundwater aspects for mining EIAs.	14	Delta-h Water Systems Modelling (Pty) Ltd
Geologist Category B	[redacted]	Groundwater Division of the Geological Society of South Africa – Member No. [redacted] Ph.D Economic Geology Research Unit -1993	Professor, Structural Geology, Univ. Stellenbosch Industry collaboration (> one-year contracts, last 10 years): • AngloGold Ashanti Ltd - Siguiri (2010-2012) – deposit-scale geology, structural evolution and controls of gold-quartz veins in Paleoproterozoic ("Birimian") basement gneisses of the West African Shield • Lusahunga and Mkurumu (2012-2015) (eastern and western Tanzania) – greenfields exploration, regional mapping and delineation of prospective areas • Navachab Gold Mine – deposit-scale geology, controls of gold-quartz vein sets in amphibolite-facies metasediments (annually, 2001-2012) • Bannerman Resources (2010) Structural mapping and interpretation of granite- and pegmatite-hosted U-mineralisation, Swakopmund, Namibia • Swakop Uranium (2013-2016) Husab Mine and Holland's dome - regional and structural mapping around the Husab Mine (2nd- largest U-mine in the world), controls of uraniferous leucogranites, regional structural evolution • Craton Mining (2014-2016) Omitiomire - regional and structural mapping, core-logging, 3D modelling and structural interpretation of the amphibolite-hosted Omitiomire Cu deposit, Damara belt • Council for Geoscience, South Africa (2014-2015) Advisory consultant on the geotectonic evolution and setting of the Namaqualand Metamorphic Complex	28	Univ. of Stellenbosch HoD Department of Earth Sciences

[redacted]

			• Vedanta, Black Mountain (2017) Structural interpretation of exploration bore holes, core logging and mapping, polyphase deformed VMS Cu-Pb-Zn mineralization. • Pan-African Resources (2017-2021) Barberton Gold Mines – Underground mapping and core logging, regional structural interpretation and structural analysis of mineralization controls. • Osino Resources (2020-) Structural mapping, logging and target generation, orogenic gold, Karibib District, Namibia. • > 60 unpublished company reports		
Geologist Category C	[redacted]	SACNASP Mem. No. [redacted] Groundwater Division of the Geological Society of South Africa – Member No. [redacted] MSc (Geohydrology) - 2018	• Groundwater exploration, including geophysical surveys. • Borehole logging • Pumping tests • Groundwater sampling, • Field hydrocensus work and • Groundwater contamination studies.	6	GEOSS South Africa (Pty) Ltd
Geohydrologist Category D	[redacted]	SACNASP Reg. no 120347 Groundwater Division of the Geological Society of South Africa – Member No. [redacted] BSc (Hons) Hydrology - 2016	• Groundwater exploration, groundwater geophysics and hydrocensus studies • Groundwater sampling, soil sampling, field measurements, borehole logging, data logging for groundwater monitoring, borehole depth and water level measurements, augering for piezometer installation • Dam wall subsurface assessment involving field mapping and geophysics	4	GEOSS South Africa (Pty) Ltd
Seismologist / Seismotectonics Expert / Structural Geologist	[redacted]	SACNASP Mem. No. [redacted] PhD, University of Cambridge, Earth Sciences - 2013	Lecturer at University of Cape Town: Seismology, continental tectonics, structural geology, lithosphere rheology, geomorphology. Field Research Experience: • Hebron, Namibia 2018/2019. Paleoseismology. Cosmogenic exposure dating. U-Series dating of Calcrete. Ground control point surveying. • Malawi 2018/2019. Geophone deployment. • Lesotho 2017. Structural mapping. • Hebron, Namibia 2016. Active tectonics. Geomorphology. Seismometer deployment. • Uzbekistan 2014. Active tectonics. Geomorphology. Photogrammetry. • N Iran 2014. Paleoclimatology, Quaternary dating. • Maharashtra, India 2013. Active tectonics. Geomorphology. • Hangai, Mongolia 2013. Active tectonics. Geomorphology. Photogrammetry. • NE Iran 2011. Paleoclimatology. Relationship between landscape evolution and civilisation. • NE Iran 2010. Active tectonics. Geomorphology. Quaternary dating. • SE Iran 2008. Active tectonics. Geomorphology. Quaternary dating. • Isle of Rum, Scotland 2007. Igneous Geology. (M.Sci. research project) • French Pyrenees 2006. Geological mapping. (3rd year mapping project)	8	University of Cape Town Structural Geology and Tectonics

[redacted]

Asset Management Specialist	[redacted]	ECSA Pr Eng 970697 Leadership Development Programme (LDP) M Eng (Eng Man) - 2005 Cert. Infrastructure Asset Management Cert. Maintenance Management Cert. Proj Man B Eng (Civil) - 1994	29 years' experience in: • Project and Program Management • Operation and Maintenance Management • Infrastructure Asset Management • Institutional, Financial & Technical integration towards sustainable services delivery within the Municipal environment	29	Bigen Africa Services (Pty) Ltd
Cathodic Protection Specialist	[redacted]	Chartered Metallurgical Engineer ([redacted] Chartered Scientist (IOM[redacted] Registered NACE Corrosion Specialist [redacted] Registered NACE Cathodic Protection Specialist [redacted] NACE Cathodic Protection Technologist [redacted] NACE Certified Coating Inspector (Including Marine) [redacted] BSc Eng (Metallurgical) - 1975	42 years' of experience in: • All aspects of cathodic protection, coating specification and integrity management, as well as training of in-house staff in all technical and practical aspects of CP and coatings. • Specialised development of integrated coating and CP system designs and customised approaches to intricate corrosion problems. • Provides services in specialised heavy duty coatings, materials selection and metallurgical failure investigation. • Technical training with particular reference to commercial training courses in the Middle East, and an accredited instructor for NACE International coating inspector and cathodic protection programmes. • Presentations to and and instructor for the Corrosion Institute of Southern Africa's conferences and courses	42	Isinyithi Group of Companies (Previously Corrolec)
Dam Safety Specialist	[redacted]	MEng Civil - 2013 BSc Civil Engineering (Urban Eng) - 1995 ECSA Pr Eng [redacted]	24 years' experience in: • Dam engineering (Planning, Design, Tender procurement and Construction supervision) • Dam safety evaluations • Dam geotechnical investigations • Capacity development • Water resources planning	24	DJ Hagen & Associates (Pty) Ltd
Energy Optimisation Specialist	[redacted]	B Eng Hons - 2003 B Eng (Electrical & Electronic) - 1994	24 years' experience in: • Electrical distribution and reticulation system design, maintenance and construction management • Energy management • Electrical tariff analysis and implementation • Project Management • Information systems integration, especially in the metering (credit and prepayment) and billing arena • Energy balancing and losses management (technical and non-technical)	24	Bigen Africa Services (Pty) Ltd

[redacted]

			• Electricity generation technologies, including carbon and renewable energies. • Energy Efficiency and Demand Side Management • Energy Management • Electricity & Energy Metering, Data Acquisition and Billing Systems • Tariff Analysis • Prepayment Metering • Project Management of Large Electricity & Utility Projects		
Fire Services Specialist	[redacted]	ECSA Pr Eng [redacted] B Eng (Mech) - 2004	11 years' experience in: • Determine, define and document project requirements as well as specialist advice with relation to technical queries and the interpretation of the National Building Regulations (NBR) • Detail design of the various fire safety systems and –installations for both new and existing buildings to large and small office-, commercial-, industrial-, public-, educational-, hotel- and storage buildings. • Detail design of the air conditioning and ventilation systems and – installations for both new and existing buildings to large and small office-, commercial-, industrial-public-, educational-, hotel- and storage buildings. • Detail design and project management of the installation of mechanical systems including refrigeration plants, domestic and fire protection water reticulation and other services. • Research and compilation of documentation of specifications related to the above. • Specialist technical assistance related to the procurement of equipment and mechanical plant including life cycle cost analysis.	11	Triocon Consulting Engineers (Pty) Ltd
	[redacted]	B Eng (Mech) 1985 Post Grad Dip (Air-conditioning & Refrigeration) – 1987 ECSA Pr Eng [redacted]	31 years' experience in: Building Services Industry in Fire Protection & Rational Fire Services, HVAC Services (Heating, Ventilation & Air-conditioning, Wet Services (Plumbing & Drainage), Lifts & Escalators, LPG & Medical Gas services • Design • Cost Management • Project specification compilation • Technical co-ordination • Construction progress management & control with project consulting teams • Site inspections • System commissioning • Project handover & performance checking • Maintenance Management	31	JdP Building Services Consultants (Pty) Ltd
Geotechnical Specialist	[redacted]	BSc Eng (Civil) -1994	Civil Geotechnics	27	SRK Consulting
Geologist	[redacted]	MSc. (Cum Laude) Structural Geology, 2003 BSc. (Hons) Geology, 1998 BSc. Geology - 1997	Structural geology; coal geology; groundwater exploration, management and supply; stratigraphy	23	SRK Consulting

[redacted]

Water Quality Specialist	[redacted]	BSc (Hons), Water Utilisation, 1993 BSc, Biochemistry & Chemistry - 1982	Project management and coordination of environmental impact assessments, environmental management programme, water use licence applications and specialist inputs for mining and industrial projects. Water quality management, water allocation, water use efficiency; waste management, policy development; policy implementation, water resource management	38	SRK Consulting
	[redacted]	MSc, Environmental Engineering - 2011 BSc (Hons), Environmental Engineering – 2002	Water with a particular focus on Remediation, Mine Closure, Treatment, Stormwater and Flood Studies	18	SRK Consulting
Hazardous Substances Management Specialist	[redacted]	N.Dipl (Civil Eng) - 1986	26 years' experience in: • Construction of Fuel installations • Design of Fuel and Gas Installations • Plan submission to City Council for approval of installations • Negotiating with Local Fire Safety Officers • Conducting Environmental Impact Assessments under the previous ECA act and also under the NEMA act for flammable installations • Conducting water and soils contamination investigations and providing remedial recommendations • Conducting Risk Assessments	26	Major Hazard Risk Consultants cc
	[redacted]	B.Sc (Env Man) – 2020	20 years' experience in: • Construction of fuel installations • Design of fuel and gas Installations • Plan submission to City of Cape Town for approval of installations • Negotiating with Local Fire Safety Officers • Conducting Environmental Impact Assessments under the previous ECA act and also under the NEMA act for flammable installations • Conducting water and soils contamination investigations and providing remedial recommendations • Conducting Risk Assessments and compiling assessment reports	20	Major Hazard Risk Consultants cc
	[redacted]	Pr Eng BSc Eng (Civil) - 1968	27 years' experience in: • Fire risk assessment and management • Hazard risk assessment and management	40	Major Hazard Risk Consultants cc
Hydrologist	[redacted]	BSc Hons (Hydrology) - 2003 PrSciNat - 2008	17 years' experience in: • Water Resources Modelling • Rainfall-Runoff Modelling (Pitman/WRSM2000 Model) • Dam/System Yield Assessments (Yield and Planning Modelling) • Climate Change Assessments (modelling, literature reviews & mitigation measures) • Determination of Environmental Flow Requirements (SPATSIM Desktop Reserve Model) • Project Management / Key Account Manager	17	Independent Consultant

[redacted]

Hydrologist "A" & Hydrological / Hydraulic/ Water Quality Modeller	[redacted]	MPhil - 2017 B Eng (Civil) - 2010	10 years' experience in: • Flood runoff calculations • Stormwater masterplanning • Design of stormwater infrastructure • Design of stormwater attenuation facilities • Design of stormwater channels • Floodline assessments	10	Bigen Africa Services (Pty) LTd
Hydrologist "B" & Hydrological / Hydraulic/ Water Quality Modeller	[redacted]	B Tech Eng (Civil) - 2012 NDE Civil - 2007	13 years' experience in: • Flood runoff calculations • Stormwater masterplanning • Design of stormwater infrastructure • Design of stormwater attenuation facilities • Design of stormwater channels • Floodline assessments	13	Bigen Africa Services (Pty) Ltd
Hydrology/ hydraulic/wat er quality modelling specialist	[redacted]	B Sc Zoology & Computer Science B.Sc (Hons) Marine Biology M.Sc (Zoology by Dissertation PhD Water Resource Science by Dissertation	10 years' experience in: • Water quality and flow modelling • Conducting scientific research in regards to water resource management • Experience at conducting acute and chronic eco-toxicity testing • Experience in water quality testing procedures and protocols Strong IT skills and experience including programming (java) using relational databases (SQL, Sybase, MySQL) and good general hardware and software problem solving	10	Institute for Water Research, Rhodes University
Pump and pipeline Specialist	[redacted]	ECSA Pr Eng 920029 B-Compt - 2003 B Eng (Hons): Water Utilization Engineering - 1995 B Eng (Civil) - 1985	30 years' experience in: • Planning, optimization, design and implementation of large pump stations • Planning, optimization, design and implementation of large diameter thin wall pipelines • Planning, optimization, design and implementation of water treatment projects.	30	Bigen Africa Services (Pty) Ltd
Industrial Engineer	[redacted]	B Eng (Hons) (Mech) - 1996 MBA - 2001	20 years' experience in: • Management Operating Systems (MOS & SOPs) • Industrial process analysis & design • Supply chain & distribution optimisation • Material flow & de-bottlenecking • Maintenance strategies • Cost analysis & budget management • Operational management & supervisory coaching • High Performance Business Culture development • Stock level dashboard design & management • Quality control system design • Operational turnarounds & gain share project management • Renewable energy feasibility studies	20	Epic Hold (Pty) Ltd
Process Design Engineer "B"	[redacted]	See information provided under Schedule 11 A			

[redacted]

Process Design Engineer "C"	[redacted]	B Eng (Hons) – 2015 B Eng (Civil) – 2011 Pr Eng [redacted]	10 years' experience in: • Planning & design of bulk water and wastewater infrastructure • Hydraulic design of free surface and pipe flow system • Design of hydraulic structures • Contractual admin and documentation	10	Bigen Africa Services (Pty) Ltd
	[redacted]	Pr Tech [redacted] Engineer (Grad) Germany	40 years' experience in: • Design of water & sewage treatment works • Upgrading of water & sewage treatment works	40	Bigen Africa Services (Pty) Ltd
Process Design Engineer "E"	[redacted]	See information provided under Schedule 11 A			
Traffic Impact Specialist	[redacted]	ECSA Pr Eng [redacted] (1999) B.Sc. Eng. (Civil) - 1993 M Eng. (Transportation) -2004	28 years' experience in: • Transportation and Traffic engineering • Site Development layout and Access Design • Principles of universal access design and the implications on overall transport projects • Participating in spatial and precinct planning projects where the integration between land use and transport is required • Working knowledge of the NLTA and its implications with respect to public transport service delivery • Public transport planning, operations and infrastructure design • Non-motorised planning, policy development and infrastructure design • Integrated transport planning • Universal Access Design	28	ITS (Innovative Transport Solutions) (Pty) Ltd
Water quality specialist	[redacted]	PhD Eng -1981 MSc Eng - 1976 BSc Eng - 1972 Pr Eng - 2016	Water quality specialist. Water quality assessment, catchment modelling, model development, economic analysis including costing the impact of salinity on users supplied from diverse water sources.	47	Umfula Wempilo Consulting cc
	[redacted]	(SACNASP) Mem. No. 116393 Groundwater Division of the Geological Society of South Africa – Member No. [redacted] BSc Hon (Environmental Geochemistry) - 2015	• Yield and quality testing • Groundwater exploration and groundwater geophysical surveys, borehole drilling and yield testing supervision, borehole camera logging, yield test data analysis for aquifer parameters and sustainable yields, wellfield testing, monitoring and management, prefeasibility and feasibility assessments in Managed Aquifer Recharge.	5	Geoss South Africa (Pty) Ltd
Water Resources Modelling Specialist	[redacted]	M.Sc (Eng) - 1991 B.Sc (Eng) - 1983	34 years' experience in: • Water resources planning and modelling • Development of operating rules for dams • Validation and verification of water use • Development of Reconciliation Strategies • Development of a real-time decision support systems • Development of Integrated Water Resource Management plans.	34	IWR Water Resources (Pty) Ltd

[redacted]

			• Development of an ecological flow management plans		
Water Resources Planning Engineer	[redacted]	Pr Eng [redacted] B Eng - 1995	• Hydrological Modelling: 24 years • Land Use and Water Use Assessments: 24 years • Water Resources System Analysis: 20 years • Climate Change Adaptation Planning: 10 years • Hydropower Planning: 6 years • Water Balance Modelling (Mining & Industrial): 6 years • Training and Capacity Building: 20 years	24	Gerald de Jager (Pty) Ltd
	[redacted]	Pr Eng [redacted] (Ex-Reg 950599) PhD (Civil) - 1995 M Eng (Civil)- 1985 B Eng (Civil) - 1983	30 years' experience in: • Water resources and associated regional scheme planning • Water supply master planning of urban and rural water supply schemes and implementation • Validation and verification of water use • Development of reconciliation strategies • Environmental water requirements • Water and sanitation situation assessments • Hydrological investigations, flood runoff and management of various rivers • Hydraulic analyses and design of various flood management structures • Sedimentation analyses for various river basins and dams	30	Bigen Africa Services (Pty) Ltd
Water Use Authorisation Specialist	[redacted]	(SACNASP) (Cand.Sci.Nat) Mem. No. [redacted] BSc (Hons) - 2016	• Numerous groundwater licensing - this includes aerial photo interpretation, hydrogeological investigations and hydrocensus for boreholes, data analysis and interpretation and hydrogeological conceptualization, development, monitoring and management projects. • WULA auditing including internal and external audits in KwaZulu-Natal and Mpumalanga in conservation and mining setting. • Groundwater monitoring projects involving appropriate sampling, measurements, data analysis and reporting.	3.5	GEOSS South Africa (Pty) Ltd
	[redacted]	Pr Eng 920424 PhD M Eng – 1991 BSc Eng – 1987	Engineer: Bulk water supply – Irrigation Boards Senior Engineer: Stormwater and Hydrological data management Director Water Supply: All aspects of the management of water supply, Long term water planning, Water Resources development investigations, Water Service Development Plans, EIA's, water use licence applications, groundwater management, institutional support to Local Authorities. Project implementation for rural water supply projects. Lecturing water resources / flood hydrology and Environmental Engineering and doing research on water resources and flood hydrology. At the same time, also running own consultation firm – PUDJA. Services rendered: Water Use licence applications / Water Service Development Plans for LA's / Water Resource Planning for LA's / Institutional support to LA's / Project implementation for LA's (RBIG and CMIP – funding projects). Act as specialist in various water related court cases/litigation.	5 5 7 18	Dept of Agricultural City of Cape Town – Drainage Branch West Coast District Municipality University of Stellenbosch Director: PUDJA
Professional Land Surveyor	[redacted]	BSc Geomatics / Land Survey [redacted] 2000	• Cadastral Surveys (Professional Land Surveyor) -Housing Developments -Subdivision and Consolidation	17	Frank Truter Land Surveyors as Sub-consultant to Joubert & Brink Surveys cc

[redacted]

Professional Land Surveyor	[redacted]	PLATO registry No. PLS [redacted] BSc Survey - 1992 BSc Agric - 1989	-General Plans and Diagrams -Sectional Titles -Land Surveyor's Certificate -Beacon Relocations -Cadastral Plans • Engineering /Topographical Surveys (Professional Land Surveyor and Professional Surveyor) -Detail Engineering Surveys -Flood Line Surveys -Contour Surveys -Volumetric Surveys, Control Surveys • Construction Surveys (Professional Land Surveyor) -Survey Control -Volume Control -Plato Control -Cut and Fill Surveys -Setting Out work • CAD / GIS Drawings and DTM (Surveyor and Draughtsman -Civil 3D, Caddie, Model Maker	26	Nick Loubser Land Surveyors as Sub-consultant to Joubert & Brink Surveys cc
Professional Surveyor	[redacted]	N H Dipl (Survey) - 1989 SAGC (Survey) [redacted] 2007		41	Joubert & Brink Surveys cc
Project Leader	[redacted]	N Diploma (Survey) - 1992		25	Joubert & Brink Surveys cc
Town Planner	[redacted]	M (TRP) -1990 BA - 1987	30 years' experience in: Land use management applications such as Rezonings, consent and departures • Town & Regional planning • Spatial planning • Integrated zoning schemes and planning law	30	AT Planning Town and Regional Services cc
	[redacted]	B Town & Regional Planning - 2008	13 years' experience in: Land use management applications such as Rezonings, consent and departures • Town & Regional planning • Spatial planning • Integrated zoning schemes and planning law	13	AT Planning Town and Regional Services cc
Documentation Specialist	[redacted]	B.Eng (Hons) (Civil) - 1977 B.Eng (Civil) - 1974 ECSA Pr Eng [redacted] SACPM [redacted] PMP [redacted]	46 years' experience in: • Extensive experience in township development, roadwork, water treatment works, bulk water supply, water reticulation, sewage treatment works, outfall sewers, sewer reticulation, roads and stormwater drainage • Planning, design and construction supervision of many large and small scale projects in all these fields • Project management of a number of large multi-disciplinary housing projects • Structural design of water retaining structures • Mentor to technical personnel • Tender documentation and procurement	46	Bigen Africa Services (Pty) Ltd

[redacted] **BEHALF OF TENDERER:** ..... [redacted]

ANNEX 6

SCHEDULE 19: ORGANISATIONAL STRUCTURE

Contract No 194C/2020/2021
Term Tender for the Provision of Multidisciplinary Professional Services for the Water and Sanitation Department of the City of Cape Town
Schedule 19: Organisational Structure



[redacted]

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ANNEX 7

SCHEDULE 23: PREFERENCE SCHEDULE TO BE USED IN TERMS OF THE AMENDED CODES FOR MEASURING BROAD-BASED BLACK ECONOMIC EMPOWERMENT IN THE CONSTRUCTION SECTOR (2017)

SCHEDULE 23: PREFERENCE SCHEDULE TO BE USED IN TERMS OF THE AMENDED CODES FOR MEASURING BROAD-BASED BLACK ECONOMIC EMPOWERMENT IN THE CONSTRUCTION SECTOR (2017)

Preference Schedule where preferences are granted in respect of B-BBEE contribution

1 Definitions

The following definitions shall apply to this schedule:

All applicable taxes: Includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

Applicable Code: Shall be either the Amended Codes of Good Practise (published on 11 October 2013) or Sector Specific Codes as indicated in the tender conditions

B-BBEE: Broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act.

B-BBEE status level of contributor: The B-BBEE status of an entity in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

Bid (Tender): A written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals.

Black Designated Groups: The meaning assigned to it in the codes of good practice issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act, 2003, (Act 53 of 2003).

Black People: The meaning assigned to it in section 1 of the Broad-Based Black Economic Empowerment Act.

Broad-Based Black Economic Empowerment Act: The Broad-Based Black Economic Empowerment Act, Act 53 of 2003.

Consortium or Joint Venture: An association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

Contract The agreement that results from the acceptance of a bid by an organ of state.

Co-operative: A co-operative registered in terms of section 7 of the Co-operatives Act, 2005 (Act no. 14 of 2005).

Designated Group: Black designated groups, black people, women, people with disabilities or small enterprises as defined in section 1 of the National Small Enterprises Act, 1996 (act no. 102 of 1996)

Designated Sector: A sector, sub-sector or industry or product that has been designated in terms of any relevant regulation of the Preferential Procurement Regulations, 2017.

Exempted Micro Enterprise (EME): An exempted micro enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

Firm Price: The price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract.

Functionality: The ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.

Military Veteran: The meaning assigned to it in section 1 of the Military Veterans Act, 2011 (Act No. 18 of 2011).

National Treasury: The meaning assigned to it in section 1 of the Public Finance Management Act, 1999 (Act No. 18 of 1999.

Non-firm prices: All prices other than "firm" prices.

Person: Includes a juristic person.

People with disabilities: The meaning assigned to it in section 1 of the Employment Equity Act, 1998 (Act No. 55 of 1998).

Price: Includes all applicable taxes less unconditional discounts.

Proof of B-BBEE status level of contributor: The B-BBEE status level certificate issued by an authorised body or person, a sworn affidavit as prescribed by the B-BBEE Codes of good Practice or any other requirement prescribed in terms of the Broad-Based Black Economic Empowerment Act.

[redacted]

Qualifying Small Enterprise (QSE): A qualifying small enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

Rand Value: means the total estimated value of a contract in Rand, calculated at the time of bid invitations.

Rural Area: A sparsely populated area in which people farm or depend on natural resources, including villages and small towns that are dispersed through the area or an area including a large settlement which depends on migratory labour and remittances and government social grants for survival, and may have a traditional land tenure system.

Stipulated Minimum Threshold: The minimum threshold stipulated in terms of any relevant regulation of the Preferential Procurement Regulations, 2017.

Sub-contract: The primary contractor's assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract.

The Act: The Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000).

Total Revenue: Bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007.

Township: An urban living area that at any time from the late 19th century until 27 April 1994, was reserved for black people, including areas developed for historically disadvantaged individuals post 27 April 1994.

Treasury: The meaning assigned to it in section 1 of the Public Finance Management Act, 1999 (Act No. 18 of 1999).

Trust: The arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person.

Trustee: Any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

Youth: The meaning assigned to it in section 1 of the National Youth Development Agency Act, 2008 (Act No. 54 of 2008).

2 Conditions associated with the granting of preferences

A supplier that is granted a preference undertakes to:

1) accept that the number of preference points allocated will be based on the B-BBEE status level of contributor of the supplier as at the closing date for submission of quotation offers;
2) not sub-contract more than 25% of the value of the contract to sub-contractors that do not have an equal or higher B-BBEE status level of contributor than the supplier, unless the intended sub-contractors are exempted micro enterprises that have the capability and ability to execute the sub-contract works or unless otherwise declared in terms of Section 5 below;
3) accept that a contract may not be awarded if the price offered is not market related;
4) accept the sanctions set out in Section 3 below should Condition 2(2) be breached, or should the tenderer have submitted any false information regarding its B-BBEE status level of contributor, local production and content, or any other matter required in terms of this bid that will affect, or has affected the bid evaluation;
5) accept that, in order to qualify for preference points, it is the responsibility of the supplier to submit documentary proof of its BBBEE level of contribution in accordance with the Codes of Good Practise, 2013, to the CCT at the Supplier Management Unit located within the Tender Distribution Office, 2nd Floor (Concourse Level), Civic Centre, 12 Hertzog Boulevard, Cape Town (Tel 021 400 9242/3/4/5);
6) accept that, further to 5) above, Consortiums/Joint Ventures will qualify for preference points, provided that the entity submits the relevant certificate/scorecard in terms of the Preferential Procurement Regulations, 2017. Note that, in the case of unincorporated entities, a verified scorecard in the name of the consortium/Joint Venture must be submitted with the quotation (attached to this schedule);
7) accept that if it is found that, in the performance of the contract, the participation of the various partners in a Consortium/ Joint Venture differs substantially from that upon which the consolidated scorecard submitted in terms of 5) above was based, and the impact of which is that the Joint Venture would not have been awarded the contract in terms of the actual B-BBEE level of contribution achieved by the Joint Venture, then a financial penalty shall be applied (in addition to any other remedies that the CCT may have) in accordance with Section 3 below;
8) accept that the CCT will verify the B-BBEE level of contributor of the supplier as at the closing date for submission of tender offers, to determine the number of preference points to be awarded to the supplier. In the case of Consortiums/Joint Ventures which tender as unincorporated entities, a verified scorecard submitted with the tender and valid as at the closing date will be used to determine the number of preference points to be awarded to the supplier;

9) accept that, notwithstanding 8) above, a supplier will not be awarded points for B-BBEE status level of contributor if he indicates in his tender that he intends sub-contracting more than 25% of the value of the contract to sub-contractors that do not qualify for at least the points that the supplier qualifies for unless the intended sub-contractors are exempted micro enterprises that have the capability and ability to execute the sub-contract works;

10) accept that any subcontracting arrangements after the award of the tender may only be entered into upon the prior approval of the City of Cape Town; and

11) immediately inform the City of Cape Town of any change that may affect the tenderer's B-BBEE level of contribution upon which preference points will be or have been allocated.

3 Sanctions relating to breaches of preference conditions

The sanctions for breaching the conditions associated with the granting of preferences are:

1) disqualify the supplier from the quotation process;
2) recover costs, losses or damages the CCT has incurred or suffered as a result of the supplier's or contractor's conduct;
3) cancel the contract in whole or in part and claim any damages which the CCT has suffered as a result of having to make less favourable arrangements due to such cancellation;
4) restrict the supplier, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from the CCT for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied and inform the National Treasury accordingly;
5) forward the matter for criminal prosecution; and/or
6) financial penalties payable to the CCT, as set out below.

Financial penalty for breach of Condition 2 in Section 2 above:

The penalty to be applied for sub-contracting more than 25% of the value of the contract to sub-contractors that do not qualify for at least the preference points that the supplier qualified for (unless so declared or proven to be beyond the control of the supplier, or the sub-contractors are EMEs that have the capability and ability to execute the sub-contract works) shall be as provided for in the following formula:

Penalty = 0.5 x E(%) x P*

where:

E = The value of work (excluding VAT) executed by sub-contractors that do not qualify for at least the preference points that the supplier qualified for, expressed as a percentage of P*, less 25%

P* = Value of the contract

Financial penalty for breach in terms of condition 6 in Section 2 above:

The penalty to be applied where, in the performance of the contract, the participation of the various partners in a Consortium/ Joint Venture differs substantially from that upon which the consolidated scorecard submitted in terms of 5) in Section 2 above was based, and the impact of which is that the Joint Venture would not have been awarded that contract in terms of the actual B-BBEE level of contribution achieved by the Joint Venture, shall be as provided for in the following formula:

Penalty = 5/100 x ($B\text{-}BBEE^{a} - B\text{-}BBEE^{t}$) x P*

where:

$B\text{-}BBEE^{a}$ = The B-BBEE level of contribution that is achieved, determined in accordance with the actual participation of the Joint Venture partners in the performance of the contract

$B\text{-}BBEE^{t}$ = The B-BBEE level of contribution that was used to determine the number of preference points granted to the Joint Venture at the time of quotation evaluation

P* = Value of the contract

Financial penalty for breach in terms of condition 10 in Section 2 above:

The penalty to be applied where the supplier fails to disclose subcontracting arrangement after the award of the tender is up to a maximum of 10% of the value of the contract.

4 Level of Contribution in respect of enterprise status or structure of the tendering entity (the supplier)

In the interest of transparency, suppliers are required to complete Table 1: Level of Contribution below applicable to the Code they wish to be evaluated against.

Table 1: Level of Contribution: **Amended Codes for Measuring Broad-Based Black Economic Empowerment in the Construction Sector.**

Type of B-BBEE Contributor	Status (tick box(es) below as applicable)
Exempted Micro Enterprise (EME), 100% black-owned	☐
Exempted Micro Enterprise (EME), at least 51% but less than 100% black-owned	☐
Exempted Micro Enterprise (EME), at least 30% but less than 51% black-owned	☐
Exempted Micro Enterprise (EME), less than 30% black-owned	☐
Exempted Micro Enterprise B-BBEE Status Level of Contributor[1] ☐	☐
Qualifying Small Enterprise B-BBEE Status Level of Contributor[1] ☐	☐
Qualifying Small Enterprise (QSE), 100% black-owned	☐
Qualifying Small Enterprise (QSE), at least 51% but less than 100% black-owned	☐
Qualifying Small Enterprise (QSE), less than 51% black-owned	☐
Verified B-BBEE contributor B-BBEE Status Level of Contributor[1] 1	✓
Non-compliant contributor	☐

[1] If it is indicated that the company/firm/entity is a verified B-BBEE contributor, then the verified status level of contributor must be inserted in the box provided (insert a number from 1 to 8 as applicable)

5 Declarations

1) With reference to Condition 8 in Section 2 above, the supplier declares that:

I/we hereby forfeit my preference points because I /we DO intend sub-contracting more than 25% of the value of the contract to sub-contractors that do not qualify for at least the points that I/we as supplier qualify for or are not exempted micro enterprises that have the capability and ability to execute the sub-contract works ☐ N/A

Note:

Tenderers who do not tick this box will be allocated preference points but the sanctions relating to breaches of preference conditions in Section 3 will be applicable if the tenderer contravenes the conditions in Section 2.

2) The undersigned, who warrants that he/she is duly authorized to do so on behalf of the supplier, hereby certifies that the preference claimed based on the B-BBEE status level of contribution indicated in Table 1, qualifies the supplier, subject to condition 8 in Section 2 above, for such preference claimed, and acknowledges that:

(i) the information furnished is true and correct;

(ii) the preference claimed is in accordance with the conditions of this schedule;

(iii) the supplier may be required to furnish documentary proof to the satisfaction of the CCT that the BBBEE level of contributor as at the closing date is correct; and

iv) he/she understands the conditions under which preferences are granted, and confirms that the supplier will satisfy the conditions pertaining to the granting of preferences.

[redacted]

Signature

8 December 2020

Date

[redacted]

Name (PRINT)

(For and on behalf of the Supplier (duly authorised))

For official use.
SIGNATURE OF CITY OFFICIALS AT TENDER OPENING
1 [redacted]

[redacted]

ANNEX 8

CITY OF CAPE TOWN

CONTRACT NO. AND NAME: .....

CONTRACTOR (SERVICE PROVIDER): .....

B-BBEE SUB-CONTRACT EXPENDITURE REPORT BASED ON PAYMENT NO. .....

Value of the contract (as defined in the Preference Schedule (P*)	R	B-BBEE Status Level of Service Provider	

Name of Sub-consultant (list all Sub-consultants)	B-BBEE Status Level of Sub-consultant [1]	Total Value of Sub-consultant's contract (excl VAT)[1]	Value of Sub-consultant's work to date (excl VAT)[1]	Value of Sub-consultant's work to Sub-consultants with a lower B-BBEE Status Level than Service Provider
Sub-consultant A		R	R	R
Sub-consultant B		R	R	R
Sub- consultant C		R	R	R

[1]Documentory evidence to be provided

Total:	R
Expressed as a percentage of P*	%

Signatures

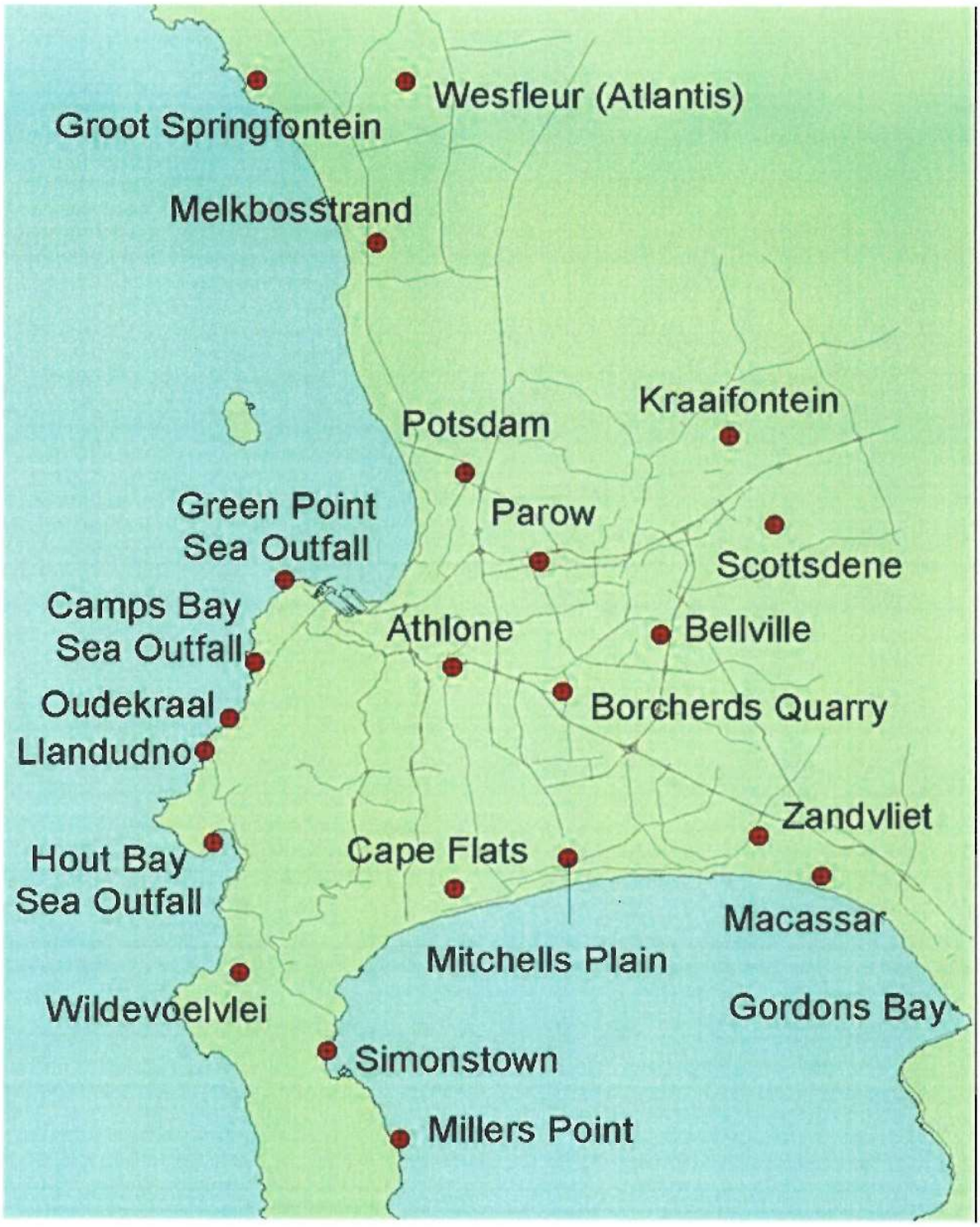
Declared by Contractor (Service Provider) to be true and correct: _____ **Date:** _____

Verified by Framework Contract Manager / Employer's Project Manager: _____ **Date:** _____

Part C4: Site Information

Pages

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POSSIBLE LOCATIONS OF WORKS PROJECTS
WASTEWATER TREATMENT BRANCH