



MEMORANDUM OF AGREEMENT

FOR THE

PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO ENGINEERING AND BUILT ENVIRONMENT WORKS

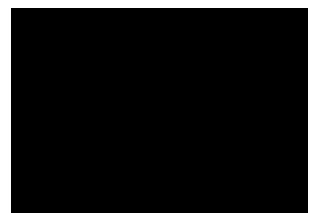
MADE AND ENTERED INTO BETWEEN

CITY OF CAPE TOWN METROPOLITAN MUNICIPALITY

AND

**PERAGAGE SOUTH AFRICA (PTY) LTD
(REGISTRATION NO. [REDACTED])**

Contract No. 092C/2024/25



PREAMBLE

WHEREAS a contract in terms of Tender 092C/2024/25 was awarded to **Peragage South Africa (Pty) Ltd** as the winner for **Award Package 3**, per the Appeal Authority decision dated **12 December 2025**, for provision of specialised multidisciplinary professional services related to engineering and built environment works, to commence on the date of commencement and terminate on 30 September 2030, subject to the conclusion of a section 33 of the Municipal Finance Management Act 56 of 2003 process and council adopting a resolution in which it approves the entire contract exactly as it is to be executed and in which it authorises the municipal manager to sign the contract on behalf of the municipality.

AND WHEREAS it is recorded that this Contract will be governed by the provisions of **New Engineering Contract, Version 4 (NEC4), Framework Contract (2017)** with the **New Engineering Contract, Version 4 (NEC4), Professional Service Contract (2017)** as published by NEC, Thomas Telford Ltd, 1 Heron Quay, London E14 4JD read with the Contract Specific Data ("**Special Conditions of Contract - SCC**") Part C1.2.

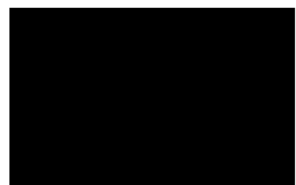
NOW THEREFORE THE PARTIES AGREE AS FOLLOWS:

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 [REDACTED] in his capacity as the **Executive Director: Future Planning and Resilience** duly authorised hereto;
- 1.2. **Peragage South Africa (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] [REDACTED] (the "**Contractor**"), herein represented by its duly authorised representative, [REDACTED] in his capacity as Director.

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



2. INTERPRETATION

2.1. In the event of any conflict between the provisions of this Contract, the **New Engineering Contract, Version 4 (NEC4), Framework Contract (2017)** with the **New Engineering Contract, Version 4 (NEC4), Professional Service Contract (2017)** as published by NEC, Thomas Telford Ltd, 1 Heron Quay, London E14 4JD 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 Form of Offer and Acceptance,

2.1.2. second, the Appendix to Tender within the Contract Data,

2.1.3. third, the Particular Conditions within the Contract Data,

2.1.4. fourth, these General Conditions,

2.1.5. fifth, the Employer's Requirements,

2.1.6. sixth, the Schedules, and

2.1.7. seventh, the drawings.

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.

3. APPOINTMENT AND DURATION

3.1. The Employer hereby appoints the Contractor to perform the Scope of Work for the Employer from the date of commencement.

3.2. Unless terminated earlier in accordance with the provisions as set out in the **New Engineering Contract, Version 4 (NEC4), Framework Contract (2017)** with the **New Engineering Contract, Version 4 (NEC4), Professional Service Contract (2017)** as published by NEC, Thomas Telford Ltd, 1 Heron Quay, London E14 4JD or any other provision in terms of this Contract, this Contract shall commence "on date of commencement and terminate on 30 September 2030, subject to the conclusion of a Section 33 of the MFMA process and council adopting a resolution in which it approves the entire contract exactly as

it is to be executed and in which it authorises the municipal manager to sign the contract on behalf of the municipality”.

4. MUTUAL GOOD FAITH / CO-OPERATION

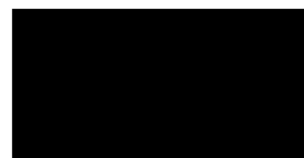
- 4.1. The Parties represent and undertake to do all such things, perform all such acts and take all steps to procure the doing of all such things and the performance of all such acts, as may be necessary or incidental to give effect to the execution of this Contract.
- 4.2. The Parties shall at all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

- 6.1. The Contractor 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 Contractor 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 Contractor will ensure that the Works will be of a satisfactory quality and fit for purpose.
- 6.4. The Contractor 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 Contractor 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 Contractor shall not be entitled to any other consideration for the rendering of the Works other than as provided for in this Contract.

SCHEDULE 1: COMPULSORY ENTERPRISE QUESTIONNAIRE

CITY OF CAPE TOWN

CORPORATE PROJECT, PROGRAMME AND PORTFOLIO MANAGEMENT DEPARTMENT

CONTRACT NO: 092C/2024/25

PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO ENGINEERING
AND BUILT ENVIRONMENT WORKS

SCHEDULE 1: COMPULSORY ENTERPRISE QUESTIONNAIRE

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.	
Section 1: Name of enterprise: <u>PeraCage South Africa (Pty) Ltd</u>	
Section 2: VAT registration number, if any: <u>[REDACTED]</u>	
Section 2a: National Treasury Central Supplier Database registration number: <u>[REDACTED]</u>	
Section 2b: SARS Tax Compliance Status PIN: <u>[REDACTED]</u>	
Section 3: cldb registration number, if any: <u>N/A</u>	
Section 4: Particulars of sole proprietors and partners in partnerships	
* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners	
Section 5: Particulars of companies and close corporations	
Company registration number: <u>[REDACTED]</u>	
Close corporation number: <u>[REDACTED]</u>	
Tax reference number: <u>[REDACTED]</u>	
Section 6: Foreign Bidding Suppliers	
N/A	
Is tenderer the accredited representative in South Africa for the Goods / Services / Works offered? ☐ Yes ☐ No If yes, enclose proof	
Is tenderer a foreign based supplier for the Goods / Services / Works offered? ☐ Yes ☒ No If yes, answer the Questionnaire to Bidding Foreign Suppliers (below)	
Questionnaire to Bidding Foreign Suppliers	
a) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐ Yes ☐ No
b) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐ Yes ☐ No
c) Does the tenderer have a permanent establishment in the Republic of South Africa?	☐ Yes ☐ No
d) Does the tenderer have any source of income in the Republic of South Africa?	☐ Yes ☐ No
e) Is the tenderer liable in the Republic of South Africa for any form of taxation?	☐ Yes ☐ No

Tender
Part T2: Returnable

Reference No. 092C/2024/25

T2.295
Documents
Returnable Schedules

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004 or Database of Restricted Suppliers;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- iv) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

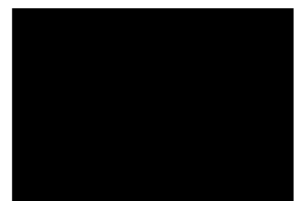
SIGNED ON BEHALF OF TENDERER:



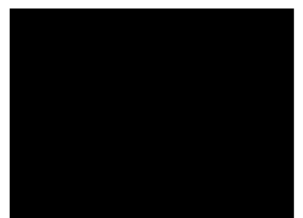
Tender
Part T2: Returnable

Reference No. 092C/2024/25

T2.296
Documents
Returnable Schedules



ONLY TO BE COMPLETED AT STAGE 1



C1.1 Form of Offer and Acceptance

AWARD PACKAGE 3 – GEOTECHNICAL AND SURVEYING SERVICES

Offer

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

**CONTRACT NO: 092C/2024/25: PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES
RELATED TO ENGINEERING AND BUILT ENVIRONMENT WORKS**

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 Supplier 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 award packages 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 Work Orders or Time charge Orders to be allocated in accordance with the procedures described in the Procedure for the Allocation of Work Orders, Part C1.2: Contract Data in this Framework Contract document.

Signature(s)

Name(s)

Capacity

for the tenderer

(Name of organization/tenderer)

(Address of organization/tenderer)

Name and
signature
of witness

Date 11/11/2024

For official use.

INITIALS OF CITY OFFICIALS AT TENDER
OPENING

Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the tenderer's offer in respect of the award package(s) awarded to the tenderer. In consideration thereof, the employer shall pay the Supplier any amounts due in accordance with the conditions of contract identified in the tenderer's offer. The tenderer's offer shall form an agreement between the employer and the tenderer in respect of the award packages 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: [REDACTED] documents and contract data, (which includes this agreement)
Part C2: [REDACTED] g data
Part C3: Framework Information
Part C4: Site information

and drawings and documents or parts thereof, which are listed in the schedule of deviations attached to and forming part of this form of offer and acceptance.

Deviations from and amendments to the documents referred to 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 Client'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 latest of the dates on which the parties have signed the table below and the Supplier has confirmed receipt from the Employer of one fully completed original copy of this agreement, including the schedule of deviations (if any), provided that an official tender award letter has been issued by the Employer to the Supplier, confirming the award to the Supplier (referred to as "coming into effect").

The tenderer (now Supplier) shall within [REDACTED] working days of the award, if the Employer has not written of any reason why he cannot accept the contents of the delivery schedule, the Employer shall constitute the binding contract between the parties.

This agreement constitutes a framework contract for the purposes of developing individual Works Orders to be allocated in terms of the procedures described in the contract, the status of the contractor with respect to the award packages awarded to him in terms of this term tender process being recorded in the schedule of deviations.

The Parties	Employer	Contractor
Business Name	CITY OF CAPE TOWN	Peragage South Africa (Pty) Ltd
Business Registration	Not applicable	
Tax number (VAT)	4500193497	
Physical Address (Registered)	Civic Centre 12 Hertzog Boulevard Cape Town 8000	
Postal Address (Registered)	Civic Centre 12 Hertzog Boulevard Cape Town 8000	
Accepted contract duration	From "on date of commencement and terminate on 30 September 2030, subject to the conclusion of a Section 33 of the MFMA process and council adopting a resolution in which it approves the entire contract exactly as it is to be executed and in which it authorises the municipal manager to sign the contract on behalf of the municipality"	
Signed – who by signature hereto warrants authority		
Designation of signatory	Executive Director: Future Planning and Resilience	Director
Name of signatory		
Signed: Date		
Signed: Location		
Signed: Witness		
Name of Witness		

SIGN HERE

[illegible]

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. Any deviation from the tender documents, which constitutes a deviation as aforesaid, become the subject of the process of offer and acceptance, the outcome of such agreement shall be recorded in the final contract.
- 3. Any other matter arising from the process of offer and acceptance either in writing or orally shall also be recorded here.
- 4. Any change or addition to the tender documents arising from the above shall also be incorporated into the final draft of the Contract.

1 Subject Status of Supplier per Award Package(s) awarded.

Details The status of the Supplier with respect to the tender process is recorded in the table below.

Regions ¹ :		Award Package 1	Award Package 2	Award Package 3
Status of Supplier (tick as applicable):	Winner			
	Alternative Supplier			

2 Subject

Details

By the duly authorised representative signing this agreement, the tenderer agrees to accept and acknowledge the foregoing schedule of deviations as the only deviations from the tender documents as listed in the tender data and addenda thereto as listed in the return of tender documents. Any clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

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

CITY OF CAPE TOWN

CORPORATE PROJECT, PROGRAMME AND PORTFOLIO MANAGEMENT DEPARTMENT

CONTRACT NO . 092C/2024/25092C/2024/25

PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES FOR THE DESIGN AND CONSTRUCTION OF THE NEW CAPE TOWN INTERNATIONAL AIRPORT AND BUILT ENVIRONMENT WORKS.

C1.2 Contract Data

The Data which will apply to all work under the Framework Contract

The Supplier is

Name

Address for communication

Address for electronic communications

The quotation information is in

The Data which will apply to all Time Charge Orders is

Time Charge Orders are not utilised under this contract.

The Data which will apply to all Work Orders is

1 General

The Consultant is

Name

Address for communications

Address for electronic communications

The fee percentage is

0.0 %

as people rates are deemed to include all overheads & mark-ups. Expenses are treated as per sections C2.2 Schedule of Rates – 1.4, 2.4, 3.4, 4.4.

The key persons are (No need to complete in this tender. Will be required when appointed per Work order. Please ignore)

Name (1)

Job

Responsibilities

Qualifications

Experience

Name (2)

Job	
Responsibilities	
Qualifications	
Experience	

The following matters will be included in the Early Warning Register (No need to complete in this tender. Will be required when appointed per Work order. Please ignore)

2 The Consultant’s main responsibilities

If the Consultant is to provide Scope	The Scope provided by the Consultant is in	To be confirmed per Work Order
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3 Time

If a programme is to be identified in the Contract Data	The programme identified in the Contract Data is	To be confirmed per Work Order
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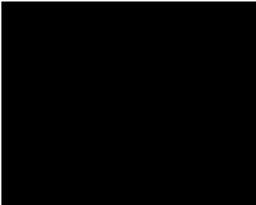
If the Consultant is to decide the completion date for the whole of the service	The completion date for the whole of the service is	To be confirmed per Work Order
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5 Payment (No need to complete in this tender. Will be required when appointed per Work order. Please ignore)

If the Consultant states expenses item	The expenses stated by the Consultant are any	amount

If Option A or C is used	The activity schedule is	To be confirmed per Work Order
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The tendered total of the Prices is	To be confirmed per Work Order
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Resolving and avoiding disputes (No need to complete in this tender. Will be required when appointed per Work order. Please ignore)

The Senior Representatives of the Consultant are

Name (1)

Address for communications

Address for electronic communications

Name (2)

Address for communications

Address for electronic communications

X10: Information modelling

If Option X10 is used

If an information execution plan is to be identified in the Contract Data

The information execution plan identified in the Contract Data is

To be confirmed per Work Order

Data for the Short Schedule of Cost Components (used only with Option A)

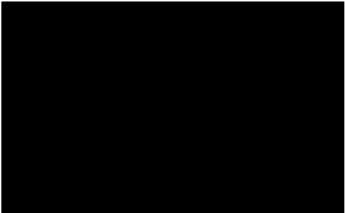
The people rates are in C2 Pricing Data

SUPPLIER'S ANNUAL HOLIDAY PERIODS DURING DELIVERY PERIOD

Year 1 holiday period	commencement date		finish date	
Year 2 holiday period	commencement date		finish date	
Year 3 holiday period	commencement date		finish date	
Year 4 holiday period	commencement date		finish date	
Year 5 holiday period	commencement date		finish date	

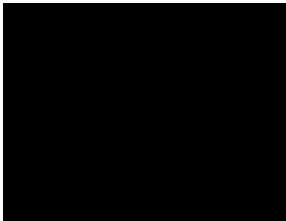
SIGNED ON BEHALF OF TENDERER:

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C2.2 Schedule of Rates

	Pages
Schedule No. 1: Buildings	61 - 70
Schedule No. 2: Civil Infrastructure, Mechanical and Electrical Engineering Services	71 - 79
Schedule No. 3: Geotechnical and Survey Services	80 - 92



SCHEDULE NO. 3: GEOTECHNICAL ENGINEERING AND SURVEY SERVICES

The following notes in section Error! Reference source not found. and details in section Error! Reference source not found. are applicable to Built Environment Services:

1.1 PROFESSIONAL SERVICES RATE CATEGORIES MATRIX

The discipline specific rate categories obtained below provides common groupings for similar personnel for which the same rate would apply. Reference is made to the personnel descriptions in the above schedule and the schedule of rates (Section 3.2). Tendered rates per category are applicable to all specified personnel within the category.

1.1.1 PRIMARY RESOURCE MATRIX

			RATE CATEGORIES				
Group	Discipline	Speciality	Category A	Category B / Specialist	Category C	Category D	Specification Reference
Geotechnical and Surveying	Geotechnical Engineering	Geotechnical Engineer	C1	C2	C3	C4	Note D2
	Geotechnical Engineering	Engineering Geologist	S1	S2	S3	S4	Note D3
	Geotechnical Engineering	Geophysicist		S2			Note D4
	Documentation & Support	BIM Manager	D1				Note D5
	Documentation & Support	BIM Modeller		D2			Note D6
	Documentation & Support	CAD Technician			D3		Note D7
	Documentation & Support	GIS Technician		D2			Note D8
	Documentation & Support	Document Control / Support				D4	Note D9
	Hydrogeological Engineering	Groundwater Engineer	C1	C2	C3	C4	Note D10
	Hydrogeological Engineering	Hydrogeologist		S2			Note D11
	Hydrogeological Engineering	Groundwater Quality specialist (Geochemist)		S2			Note D12
	Project Management & Construction Monitoring	Project Manager	P1	P2	P3	P4	Note D13
	Surveying	Land Surveyor			S3	S4	Note D14
	Occupational Health and Safety	Construction Health and Safety Agent		QH2			Note D15

1.2 TIME-BASED FEES FOR PROFESSIONAL SERVICES

Time-based fees for all services as described in the Scope of Work for the following disc

Fee Types Explained :

This section covers the fees for strategic and specialist advice, high-level operational or implementation activities, and design, planning, and part-time implementation monitoring. These services are provided by professionals working from their own offices. Appointments can vary in duration, being either short-term or long-term.

Primary resources are linked to resource categories A, B, C and D.

All overheads included in tendered rates (refer to table 1).

Table 1 - Overheads

Description	For Noting
Salaries (total cost of employment) of fee earning staff, i.e. professional/technical staff including benefits and leave entitlement.	Included
Salaries of non-fee-earning staff, i.e. administrative staff salaries	Included
Internet and fixed communication at premises of where work is performed. (excluding mobile phones)	Included
Rental of premises where work is performed, including water, electricity and rates	Included
Transport (not recovered directly from projects)	Included
Paper, stationary, consumables at premises where work is performed.	Included
Audit, bank charges, interest, insurance	Included
Marketing	Included
Office equipment at premises where work is performed	Included
Training and development	Included
Project direct expenses not recoverable	Included

Note: Table derived from DPSA "Guide to Hourly Fee Rates for Consultants"

1.2.1 PRIMARY RESOURCE MATRIX

Item No.	Fee Category	Personnel Group	Specification Reference	Unit	Tendered Rate
Civil Engineering and Related Fields					
4.2.1	C1	Category A Engineer	Note D2, Note D10	Hour	R 1 000.00
4.2.2	C2	Category B Engineer / Specialist	Note D2, Note D10	Hour	R 855.00
4.2.3	C3	Category C Engineer	Note D2, Note D10	Hour	R 650.00
4.2.4	C4	Category D Engineer	Note D10, Note D14, Note D2	Hour	R 350.00
Natural Sciences and Related Fields					
4.2.17	S1	Category A Professional	Note D3,	Hour	R 1 000.00
4.2.18	S2	Category B Professional / Specialist	Note D3, Note D4, Note D11, Note D12,	Hour	R 855.00
4.2.19	S3	Category C Professional	Note D3, Note D15,	Hour	R 650.00
4.2.20	S4	Category D Professional	Note D3	Hour	R 350.00

Project, Contract Management Fields					
4.2.21	P1	Category A Professional	Note D13	Hour	R 1 200.00
4.2.22	P2	Category B Professional / Specialist	Note D13	Hour	R 975.00
4.2.23	P3	Category C Professional	Note D13	Hour	R 800.00
4.2.24	P4	Category D Professional	Note D13	Hour	R 350.00
Quantity Surveying and Health & Safety Services					
4.2.26	QH2	Category B Professional / Specialist	Note D15,	Hour	R 700.00
Draughting, Modelling, Documentation and Support Services					
4.2.29	D1	Specialist / Expert	Note D5,	Hour	R 800.00
4.2.30	D2	Senior Professional	Note D6, Note D8,	Hour	R 650.00
4.2.31	D3	Junior Professional	Note D7,	Hour	R 400.00
4.2.32	D4	Support Services	Note D9,	Hour	R 350.00

1.2.2 RECOVERABLE EXPENSES

Recoverable Expenses

Item No.	Activity Description	Unit	Sum
4.4.1	Supplier'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 Work Order during the Framework Contract Period in accordance with C3.4 of Part C3 - Framework Information.		The estimated value shown below is used for tender evaluation purposes only
		Sum	R 1 000 000

Provision for Supplier's Mark-up on Recoverable Expenses claimed under item 3.3.1

Item No.	Activity Description	Unit	Tendered Percentage
4.4.2	Supplier's percentage mark-up on item 4.4.1 above (for tender evaluation purposes ONLY , tenderers must base their % mark-up on an estimated value of R1 000 000)	%	5%

1.2.3 DISBURSEMENTS/RECOVERABLE EXPENSES

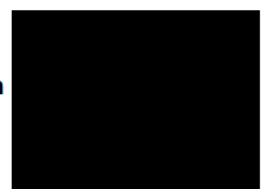
Item No.	Description	Unit	
4.4.3	Size A0 (Monochrome)	No.	R 40.00
4.4.4	Size A1 (Monochrome)	No.	R 25.00
4.4.5	Size A2 (Monochrome)	No.	R 20.00
4.4.6	Size A3 (Monochrome)	No.	R 2.50
4.4.7	Size A4 (Monochrome)	No.	R 1.20
4.4.8	Size A4 (Monochrome on colour paper)	No	R 1.85
4.4.9	Size A0 (Colour)	No.	R 55.00
4.4.10	Size A1 (Colour)	No.	R 35.00
4.4.11	Size A2 (Colour)	No.	R 20.00
4.4.12	Size A3 (Colour)	No.	R 8.00
4.4.13	Size A4 (Colour)	No.	R 2.80
4.4.14	Laminated posters: Size A0 (Colour)	No.	R 95.00
4.4.15	Laminated posters: Size A1 (Colour)	No.	R 70.00
4.4.16	Laminated posters: Size A2 (Colour)	No.	R 50.00
4.4.17	Laminated posters: Size A3 (Colour)	No.	R 15.00
4.4.18	Compilation and binding of reports/tender documents, books of drawings, etc.	No.	R 55.00
4.4.19	Travel expenses	km	SARS Rates
4.4.20	Travel expenses (4 X 4)	km	SARS Rates

1.2.4 RATES FOR GEOTECHNICAL INVESTIGATION AND SURVEYING WORKS

Rates for all services as described in the Framework Scope for the following items, refer to section Error! Reference source not found.:

Item No.	Activity Description	Specification Reference.	Unit	Tendered Rate
	ESTABLISHMENT OF THE CONTRACTOR			
	Establishment of contractor on Site			
4.5.1	Fixed Charges (% of Investigation Cost)	B1.1.1	%	7%
4.5.2	Time Related Charges (% of Investigation Cost)	B1.1.2	%	5%
4.5.3	Health and Safety Obligations	1.1.3	day	R 1 500.00
4.5.4	Environmental management (% of Investigation Cost)	B1.1.4	%	1%
4.5.5	Provision of labour (per person)		hour	R 80.00
4.5.6	Appointment of PSIRA grade B security personnel for 24 hours per day, 7days a week including weekends and public holidays	B1.5	Person hour	R 280.00
4.5.7	Appointment of PSIRA grade C security personnel for 24 hours per day, 7days a week including weekends and public holidays	B1.6	Person hour	R 220.00
4.5.8	Appointment of PSIRA grade D security personnel for 24 hours per day, 7days a week including weekends and public holidays	B1.7	Person hour	R 160.00
	TRAFFIC ACCOMMODATION(Inclusive of cones,signs,flagmen)			
	Local Roads (60kph speed limit):			
4.5.9	Two-way traffic accommodated by partial lane closure	SARTSM Manual 2, Detail 13.37.1	hour	R 250.00
4.5.10	One-way traffic accommodated by full lane closure - STOP/GO operation alternately on single lane	SARTSM Manual 2, Detail 13.37.2	hour	R 350.00
4.5.11	One-way traffic accommodated by lane drop	SARTSM Manual 2, Detail 13.38.2	hour	R 200.00
	Collector Roads (80kph speed limit):			
4.5.12	Two-way traffic accommodated by partial lane closure	SARTSM Manual 2, Detail 13.37.1	hour	R 250.00
4.5.13	One-way traffic accommodated by full lane closure - STOP/GO operation alternately on single lane	SARTSM Manual 2, Detail 13.37.2	hour	R 350.00

4.5.14	One-way traffic accommodated by lane drop	SARTSM Manual 2, Detail 13.38.2	hour	R 200.00
	Arterials or Expressways (100kph speed limit):			
4.5.15	Two-way traffic accommodated by partial lane closure	SARTSM Manual 2, Detail 13.37.1	hour	R 300.00
4.5.16	One-way traffic accommodated by full lane closure - STOP/GO operation alternately on single lane	SARTSM Manual 2, Detail 13.37.2	hour	R 400.00
4.5.17	One-way traffic accommodated by lane drop	SARTSM Manual 2, Detail 13.38.2	hour	R 250.00
	ESTABLISHMENT AND PROVISION OF RIGS AND EQUIPMENT			
4.5.18	Core drilling rigs (Total Drilling <20m)	B3.1.1	sum	R 26 680.00
4.5.19	Core drilling rigs (Total Drilling 20-50m)	B3.1.2	sum	R 42 750.00
4.5.20	Core drilling rigs (Total Drilling >50m)	B3.1.3	sum	R 63 050.00
4.5.21	Large diameter auger/Continuous Flight Auger rig	3,2	sum	R 25 000.00
4.5.22	Drilling Barges	3,4	sum	R 9 000.00
	Establishment of other plant and equipment			
4.5.23	Tractor-loader-backhoe (TLB) (should be able to reach maximum depth of 3m with >90HP)	3.5.1	sum	R 6 000.00
4.5.24	Excavator (should be able to reach maximum depth of 6m with >150HP)	3.5.2	sum	R 12 000.00
4.5.25	Core orientation equipment	3.5.6	sum	R 6 000.00
4.5.26	Water pressure equipment	3.5.7	sum	R 8 000.00
4.5.27	Low Bed (For excavator)	B3.5.10	sum	R 12 000.00
4.5.28	DPSH equipment	3.5.9	sum	R 4 500.00
	SETTING OUT AND SURVEYING			
4.5.29	Surveyor (including all equipment, etc.)	B4.1	hr	R 2 000.00
	SETTING UP			
	Mobile Setups			



4.5.30	Core drill	5.1.1	no.	R 6 000.00
	Skid Set-ups			
4.5.31	Normal skid setups	5.2.1	no.	R 9 250.00
4.5.32	Difficult skid setups	5.2.2	no.	R 12 500.00
4.5.33	Very difficult skid setups	5.2.3	no.	R 18 050.00
4.5.33.a	Setting up on inclined holes (Extra over 5.1 or 5.2)	5,3	no.	R 2 500
4.5.34	Extremely difficult setups (E.O. 5.2.3.) very long an very steep set ups	B5.4.1	no.	R 12 000.00
4.5.35	Very shallow water (0.05 to 0.5m deep) E.O5.2.3	B5.4.2	no	R 15 000.00
4.5.36	Movement between boreholes (Extra over 5.1 or 5.2.(rotary core))	5,5	km	R 25.00
	ACCESS TRACKS			
	Making of access tracks using different types of equipment as given in the Bill of Quantities			
4.5.37	Tractor-loader-backhoe (TLB) (>90HP)	6.1.2	day	R 6 000.00
	CUTTING DOWN OF TRESS AND CROPS			
	Cutting down of trees and removal thereof			
4.5.38	Between 150 and 300mm diameter	7.1.1	no.	R 100.00
4.5.39	Greater than 300mm diameter	7.1.2	no.	R 200.00
4.5.40	Destruction of crops	7,2	ha	R 500.00
	AUGERING			
	Large diameter augering (>200mm diameter)			
4.5.41	Daily rate hire (CFA/Conventional Auger rig)	9.2.1	day	R 15 320.00
4.5.42	Backfilling of hole (only when delayed by the Engineer)	9.2.2	m	R 100.00
	ROTARY CORE DRILLING			
4.5.43	In category A materials	10,1	m	R 800.00
4.5.44	In category B materials	10,2	m	R 800.00
4.5.45	In category C materials	10,3	m	R 800.00
4.5.46	In category D materials (EO Item 10.3) by different rock types	10,4	m	R 300.00
4.5.47	In very closely fractured material (EO Item 10.3)	10,5	m	R 300.00

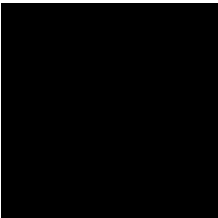
4.5.48	Triple tube drilling (EO Item 10.1 and 10.2)	10,6	m	R 300.00
4.5.49	Drilling in gravel	10,7	m	R 1 200.00
4.5.50	Drilling in cobbles and boulder	10,8	m	R 2 500.00
4.5.51	Drilling steel in concrete	10,9	mm	R 800.00
	Extra Over for drilling inclined boreholes in all categories			
4.5.52	Inclination >60° and <85°	10.10.1	m	R 300.00
4.5.53	Inclination <60° and >30°	10.10.2	m	R 300.00
4.5.54	Inclination <30° and >0°	10.10.3	m	R 200.00
	WASHBORING			
4.5.55	Washboring	11,1	m	R 500.00
	CORE AND SOIL MATERIAL RECOVERY			
4.5.56	Soil material recovery in all material types	12,1	m	R 400.00
4.5.57	Core recovery in Category A material	12,2	m	R 400.00
4.5.58	Core recovery in Category B material	12,3	m	R 400.00
4.5.59	Core recovery in Category C material	12,4	m	R 400.00
4.5.60	Core recovery in Category D material	12,5	m	R 550.00
4.5.61	In very closely fractured material (Extra over 12.4 in different rock types)	12,6	m	R 550.00
4.5.62	Triple tube drilling	12,7	m	R 550.00
	CASING (N-SIZE)			
4.5.63	Casing, which may be removed (N size)	13,1	m	R 400.00
4.5.64	Casing in material category B or harder (Extra over 13.1)	13,2	m	R 150.00
4.5.65	Casing in boulders or gravel (Extra over 13.1)	13,3	m	R 800.00
4.5.66	Casing left in hole (Extra over 13.1) – N size	13,4	m	R 1 200.00
4.5.67	Casing in inclined holes (Extra over 13.1)	13,5	m	R 150.00

	THE USE OF DRILLING AIDS			
4.5.68	Use in lieu of casing	14,1	m	R 400.00
4.5.69	Drilling aid	B14.2	kg	R 40.00
	DISTURBED SAMPLING			
4.5.70	Samples (<5kg, 250x400mm 150 micron sampling bag, tags included)	B16.1.1	no.	R 20.00
4.5.71	Large Samples (<40kg, 2x 600x900mm 150 micron sampling bags, tags included)	B16.1.2	no.	R 50.00
	UNDISTURBED SAMPLING			
4.5.72	Thin walled tube samples (tube not returned)	B17.1	no.	R 850.00
4.5.73	Piston sample	17,2	no.	R 550.00
4.5.74	Block samples	17,3	no.	R 600.00
	CORE ORIENTATION SURVEYS			
4.5.75	Core orientation surveys (putty impression type)	19,1	no.	R 500.00
	DOWN THE HOLE PHOTOGRAPHY			
4.5.76	Establishment (per trip)	B21.1	no.	R 29 500.00
4.5.77	Logging and interpretation report using logging calliper, ATV and OTV and orientated borehole image	B21.2	m	R 250.00
	STANDARD PENETRATION TEST			
4.5.78	SPTs	23,1	no.	R 600.00
	DYNAMIC PROBE (SUPER HEAVY)			
4.5.79	Setup at each location	24,1	no.	R 500.00
4.5.80	DPSH	24,2	m	R 120.00
	PIEZOMETERS			
4.5.81	Supply (uPVC 50mm pipe, 2m slotted wrapper in geotextile)	28,1	no.	R 500.00
4.5.82	Installation	28,2	m	R 400.00
4.5.83	Permeability Testing	28,3	hr	R 700.00
	WATER SAMPLING AND BOREHOLE WATER REST LEVEL			
4.5.84	Recording water rest levels	30,1	no.	R 200.00
4.5.85	Recording water levels (6months or 12 months after drilling)	30,1	no.	R 800.00

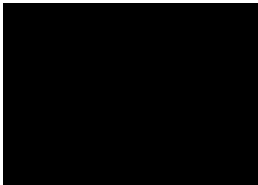
4.5.86	Water samples	30,2	no.	R 200.00
CORE BOXES				
4.5.87	Core boxes (N-size; plastic deep channelled steel lid 6m box)	31,1	no.	R 500
CORE SHEDS				
4.5.88	Core shed/20' Dry Container	32,1	no.	R 42 000.00
4.5.89	Core rack module	32,2	no.	R 3 500.00
4.5.90	Name board	32,3	no.	R 300.00
CORE PHOTOGRAPHY				
4.5.91	Core photographs	33,1	no.	R 200.00
TRANSPORTATION				
4.5.92	Vehicle of less than 1.5ton	34,1	km	R 12.50
4.5.93	Vehicle of greater than 1.5ton	34,2	km	R 28.00
MARKING OF HOLES				
4.5.94	Standpipe and cap	35,1	no.	R 850.00
4.5.95	Concrete block only	35,2	no	R 350.00
4.5.96	Plastic water meter box cover	35,3	no.	R 1 280.00
MACHINE AND HAND TRENCHING				
Hand excavation				
4.5.97	Up to 1.5m depth	36.1.1	hr	R 280.00
4.5.98	In excess of 1.5m depth	36.1.2	hr	R 280.00
Machine excavation (by type)				
4.5.99	Tractor-loader-backhoe (TLB) (>90HP)	36.2.1	day	R 8 000.00
4.5.100	Excavator (>150HP)	36.2.2	day	R 10 000.00
4.5.101	Safety fencing	36,3	m	R 100.00
4.5.102	Backfilling of holes (only as ordered by Engineer)	36,4	no.	R 1 400.00

	STANDING TIME			
4.5.103	Standing time (per core rig)	37,1	hr	R 900.00
	LOGGING AND PROFILING			
4.5.104	Logging of core by Geotechnical Engineer or Engineering Geologist	B38.1	m	R 120.00
	LABORATORY AND MINOR SITE TESTING			
4.5.105	Foundation Indicator Test	B42.1	no.	R 810.00
4.5.106	Moisture Content and in-situ dry density (Undisturbed sample),m	B42.2	no.	R 400.00
4.5.107	Oedometer Test	B42.3	no.	R 2 580.00
4.5.108	Double Oedometer	B42.4	no.	R 4 400.00
4.5.109	Triaxial Test (SCD)	B42.5	no.	R 12 500.00
4.5.110	Triaxial Test (SCU)	B42.6	no.	R 14 900.00
4.5.111	Unconfined Compression Test	B42.7	no.	R 650.00
4.5.112	Consolidated Shear Box Test	B42.8	no.	R 4 800.00
4.5.113	Maximum Dry Density Estimation	B42.9	no.	R 425.00
4.5.114	California Bearing Ratio (CBR) Test	B42.10	no.	R 425.00
4.5.115	Uniaxial Compression (UCS) on Rock sample	B42.11	no.	R 850.00
4.5.116	Point Load Index (PLI) Test on Rock sample	B42.12	no.	R 450.00
4.5.117	Carbonate Content	B42.13	no.	R 500.00
4.5.118	Sulfate Content	B42.14	no.	R 1 350.00
4.5.119	pH Determination	B42.15	no.	R 190.00
4.5.120	Chloride Content	B42.16	no.	R 725.00
4.5.121	Dynamic Cone Penetrometer (1m)	B42.19	no.	R 200.00
4.5.122	Dynamic Cone Penetrometer (2m using extension rods)	B42.20	no.	R 285.00

4.5.123	Dynamic Cone Penetrometer (3m using extension rods)	B42.21	no.	R 400.00
4.5.124	Hand Augering	B42.22	m	R 200.00
4.5.125	Sand replacement test	B42.23	no.	R 225.00
4.5.126	Electrical resistivity	B42.24	m	R 40.00
4.5.127	Continuous Surface Wave (CSW)	B42.25	day	R 33 500.00
4.5.128	Rising head test	B42.26	no.	R 7 000.00
SURVEYING TECHNIQUES				
4.5.129	Aerial / drone based survey approvals, mobilisation & demobilisation	C1	sum	R 35 300.00
4.5.130	Aerial / drone based LIDAR survey	C2	ha	R 400.00
4.5.131	Aerial / drone based oblique photogrammetry survey	C2	ha	R 1 000.00
4.5.132	Ground based site or building light scanning including mobilisation and demobilisation	C3	day	R 15 000.00
4.5.133	Ground Penetrating Radar for service detection including mobilisation and demobilisation	C4	day	R 14 500.00
4.5.134	Land based site survey support team and equipment (excluding land surveyor time)	C5	day	R 13 500.00



CITY OF CAPE TOWN



CITY OF CAPE TOWN
CORPORATE PROJECT, PROGRAMME AND PORTFOLIO MANAGEMENT DEPARTMENT
CONTRACT NO: 092C/2024/25

PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO ENGINEERING AND BUILT ENVIRONMENT WORKS

SCHEDULE 13: PROFESSIONAL INDEMNITY INSURANCE

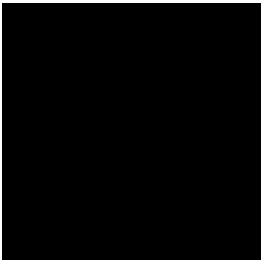
The tenderer is referred to the appropriate clause(s) of the Tender Data and shall state below details of the professional indemnity insurance held by the tenderer. Where the tenderer is a joint venture, each party to the joint venture must submit details of their professional indemnity insurance. Proof of insurance or confirmation from a reputable Insurance Broker that the tenderer is eligible for the prescribed professional indemnity insurance cover should he/she be awarded the contract, must be appended to this schedule.

PROFESSIONAL INDEMNITY INSURANCE		
NAME OF INSURED	NAME OF INSURER	LIMIT OF INDEMNITY IRO EACH CLAIM
PERFORMANCE SOUTH AFRICA (Pty) Ltd PERFORMANCE (Pty) Ltd		R 20 000 000

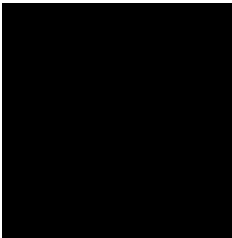
SIGNED ON BEHALF OF TENDERER: 

Tender
Part T2: Returnable
Reference No. 092C/2024/25

T22111 Documents
Returnable Schedules







PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO
ENGINEERING AND BUILT ENVIRONMENT WORKS

C1.2 Contract Data

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract are the **New Engineering Contract, Version 4 (NEC4), Framework Contract (2017)** with the **New Engineering Contract, Version 4 (NEC4), Professional Service Contract (2017)** as published by NEC, Thomas Telford Ltd, 1 Heron Quay, London E14 4JD. Individual Work Orders will be based on **New Engineering Contract, Version 4 (NEC4), Professional Service Contract (2017)**.

Copies of these General Conditions of Contract may be obtained from NEC’s website <https://www.neccontract.com/>. Copies of the General Conditions of Contract are also available for inspection and scrutiny at the offices of the *Client*.

Part 1: Contract Data provided by the *Client*

The Data which will apply to all work under the Framework Contract is

The *conditions of contract* are the clauses of the NEC4 Framework Contract June 2017 and any *additional conditions of contract*. To the extent of any inconsistency or conflict between the NEC4 Framework Contract June 2017 and any *additional conditions of contract*, the *additional conditions of contract* shall prevail and be given effect.

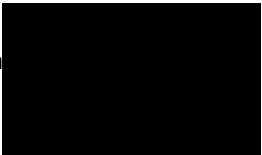
The *Client* is

Name	
Address for communications	6th Floor Murray And Roberts Building 73 Hertzog Boulevard, Cape Town
Address for electronic communications	

The *Client’s Representative* is

Name	
Address for communications	
Address for electronic communications	

The Framework Information is in	Part C3 Framework Information
The <i>framework scope</i> is in	C3.2 Framework Scope
The <i>selection procedure</i> is in	C3.3 Selection Procedure
The <i>quotation procedure</i> is in	C3.4 Quotation Procedure
The <i>end date</i> is	30 September 2030
The period for reply to a <i>Supplier’s</i> quotation is	To be confirmed



The *additional conditions of contract* are as set out below:

- Z1 The *framework contract start date* is the date at which the agreement comes into effect as per C1.1 Form of Offer and Acceptance.
- Z2 The framework contract *base date* is defined as 7 days prior to the tender closing date defined in T1 – Tendering Procedures. The *base date* will be used as the reference date for all and any relevant price adjustment.
- Z3 The *Supplier* is required to obtain the *Client's* prior approval in writing before taking any of the following actions:
- a) Replacing any of the *key 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 accepted 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'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.
- Z4 The *Client* reserves the right to terminate the framework contract for any of the following reasons:
- if the *Supplier* 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;
 - 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 and as otherwise required by applicable law; or
 - The implementation of the contract may result in reputational risk or harm to the City as a result of (inter alia) in relation to the *Supplier*:
 - reports of poor governance and/or unethical behaviour;
 - association with notorious individuals and/or their families;
 - poor performance issues, known to the *Client*;
 - negative social media reports; or
 - adverse assurance (e.g. due diligence) report outcomes.
- Z5 The *Supplier* hereby indemnifies and holds the *Client* harmless against all claims, losses, damages and costs suffered by the *Client* in relation to claims of third parties which arise, directly or indirectly, out of or in connection with the Services rendered or to be rendered under this Contract, where such

claims are wholly or partly, directly or indirectly caused by or relating to any failure by the *Supplier* to exercise reasonable professional skill, care and diligence in the exercising of its obligations.

- Z6 Within 14 (fourteen) days of receipt of the notification of contract award, the *Supplier* shall furnish to the *Client* the performance bond of the amount specified herein if requested by the *Client*. The Guarantee Sum shall be determined at the point of works project allocation.
- Z7 The *Supplier* acknowledges that during the course of the performance of the services, it and its employees, representatives and/or sub-contractors may gain access to and become acquainted with the Personal Information and/or Special Personal Information and children's information (collectively, "Personal Information") (as these terms are defined or explained in the Protection of Personal Information Act 4 of 2013, as amended from time to time, referred to as "**POPIA**"), of the *Client*, its employees, clients, representatives, sub-contractors and/or suppliers. The *Supplier* will, and will procure that its employees, representatives and sub-contractors, treat such Personal Information as confidential and respect the privacy of the *Client*, its employees, clients, representatives, sub-contractors and/or suppliers.
- Z8 The *Supplier* further acknowledges that during the course of the performance of the services, it and its employees, representatives and/or sub-contractors may also be required to collect, use or process the Personal Information of the *Client* and/or its employees, clients, representatives, sub-contractors and/or suppliers and, when doing so, will comply, and will procure that they comply, with (i) the conditions of lawful processing as set out in terms of POPIA and other applicable laws and regulations; (ii) the CCT Privacy Notice and (iii) the *Client*'s data protection procedures;
- Z9 The *Client*, its employees, representatives and sub-contractors may, from time to time, Process the *Supplier*'s and/or its employees', representatives' and/or sub-contractors' Personal Information, for purposes of, and/or relating to, the tender, this agreement, for research purposes, and/or as otherwise may be envisaged in the Privacy Notice and/or in relation to the Supply Chain Management Policy or as may be otherwise permitted by law. This may include the cross-border transfer of Personal Information and/or Special Personal Information (including children's information) from time to time.
- Z10 The *Supplier* acknowledges that it has read and understood the contents of clause Z9 above, the Privacy Notice and Supply Chain Management Policy and hereby consents to the *Client*, its employees and/or representatives and/or sub-contractors Processing its Personal Information for those purposest and/or as otherwise contemplated herein.
- Z11 The *Supplier* agrees and undertakes to procure that its employees and/or representatives and/or sub-contractors are made aware that the *Client* may process their Personal Information from time to time as envisaged in clause Z9 above.
- Z12 The *Supplier* hereby warrants in favour of, and represents to, the *Client*, its employees, representatives and sub-contractors, that the *Supplier* and its employees, representatives and sub-contractors are permitted to Process the Personal Information, which they have and/or will Process in, and in relation to, this tender and agreement, including but not limited to the disclosure of the Personal Information herein and irrevocably undertake to comply with all applicable laws in this regard and will procure that their employees, representatives and sub-contractors also so comply.
- Z13 The *Supplier* hereby indemnifies and holds each of the *Client*, its employees, representatives and sub-contractors harmless against all claims, losses, damages and costs relating to the Processing of Personal Information by the *Supplier*, its employees, representatives and/or sub-contractors.
- Z14 In order to comply with section 19 read with section 21 of POPIA to the extent that the *Supplier* processes Personal Information for which it is the Operator and the *Client* is the Responsible Party under POPIA, the parties agree as follows:
- Z15.1 The *Supplier* agrees and irrevocably undertakes that it shall:
- Z15.1.1 only Process Personal Information on behalf of the *Client* if (i) the processing of such information is within the knowledge or authorisation of the *Client*, (ii) it treats the Personal Information which comes to its knowledge as confidential and does not disclose it, and (iii) the Processing is done in a lawful and reasonable manner, and only

to the extent required to execute the services, or to provide the goods, or to perform its obligations pursuant to the agreement;

- Z15.1.2 put in place, and at all times maintain, appropriate, reasonable, technical and organisational measures to ensure the protection and confidentiality of the Personal Information that it, or its employees, its representatives, its sub-contractors and other authorised individuals come into contact with pursuant to the agreement;
- Z15.1.3 do all such things as are necessary to prevent the: (i) loss of, damage to, and/or unauthorised destruction of Personal Information; and (ii) unlawful access to or processing of personal information;
- Z15.1.4 notify the *Client* immediately where there are reasonable grounds to believe that the Personal Information in its possession has been accessed or acquired by any unauthorised person;
- Z15.1.5 at all times comply with the provisions of POPIA, its regulations and any applicable codes of conduct, as well as the Privacy Notice;
- Z15.1.6 give the *Client* reasonable access to its premises, systems and processes to enable the *Client* to inspect same and conduct a data protection compliance audit thereof from time to time on receipt of request from the *Client* and undertakes to give its full co-operation in this regard; and
- Z15.1.7 upgrade, adapt and/or change its systems and processes upon request from the *Client* from time to time, to meet the security standards reasonably required by the *Client* as the Responsible Party in terms of POPIA.
- Z16 The *Supplier* hereby indemnifies and holds the *Client* harmless against all claims, losses, damages and costs of whatsoever nature suffered by the *Client* arising from or in relation to the *Supplier's* (and/or its employees', representatives' and sub-contractors') non-compliance with applicable data protection laws and/or other legislation.
- Z17 The *Client's* Information Officer who is responsible for overseeing questions in relation to data protection may be contacted at Popia@capetown.gov.za.

The Data which will apply to all Time Charge Orders is

Time Charge Orders are not utilised under this contract.

The Data which will apply to all Work Orders is

1 General

The *conditions of contract* are the core clauses and the clauses for the following main Option, the Option for resolving and avoiding disputes and secondary Options of the NEC4 Professional Service Contract June 2017 (with amendments October 2020)

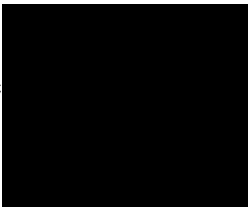
Main Option	A	Option for resolving and avoiding disputes	W1, as specifically amended herein
Secondary Options	X1, X2, X5 (where applicable), X7, X9, X10 (where applicable), X11		
The <i>service</i> is	(To be completed per Work Order)		

The *Client* is

Name	(To be completed per Work Order)
Address for communications	(To be completed per Work Order)
Address for electronic communications	(To be completed per Work Order)

The *Service Manager* is

Name	(To be completed per Work Order)
Address for communications	(To be completed per Work Order)
Address for electronic communications	(To be completed per Work Order)
The Scope is in	C3.5 - WORK ORDER SCOPE prepared for each Work Order contract



The *language of the contract* is

English

The *law of the contract* is the law of

Republic of South Africa

The *period for reply* is

2 weeks

except that

• The *period for reply* for

To be confirmed per Work Order

is

To be confirmed

The *period for retention* is

To be confirmed per Work Order

year(s) following Completion or earlier termination

The following matters will be included in the Early Warning Register

(To be completed per Work Order)

Early warning meetings are to be held at intervals no longer than

(To be confirmed)

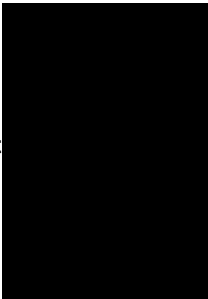
2 The Consultant’s main responsibilities

If the <i>Client</i> has identified work which is set to meet a stated <i>condition</i> by a <i>key date</i>	The <i>key dates</i> and <i>conditions</i> to be met are	
	<i>condition</i> to be met	<i>key date</i>
	(1) (To be completed per Work Order)	(To be completed per Work Order)
	(2) (To be completed per Work Order)	(To be completed per Work Order)
	(3) (To be completed per Work Order)	(To be completed per Work Order)

If Option A is used

The *Consultant* prepares forecasts of the total *expenses* at intervals no longer than

4 weeks



3 Time

The *starting date* is

(To be completed per Work Order but not earlier than date of the purchase order)

The *Client* provides access to the following persons, places and things
access

access date

- (1) (To be completed per Work Order)
- (2)
- (3)

- (To be completed per Work Order)
-
-

The *Consultant* submits revised programmes at intervals no longer than

4 weeks

If the *Client* has decided the *completion date* for the whole of the *service*

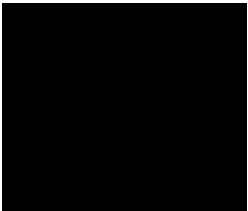
The *completion date* for the whole of the *service* is

(To be completed per Work Order)

If no programme is identified in part two of the Contract Data

The period after the Contract Date within which the *Consultant* is to submit a first programme for acceptance is

2 weeks



4 Quality management

The period after the Contract Date within which the *Consultant* is to submit a quality policy statement and quality plan is

2 weeks

The period between Completion of the whole of the *service* and the *defects date* is

(To be completed per Work Order)

5 Payment

The *currency of the contract* is the

South African Rand

The *assessment interval* is

4 weeks

If the *Client* states any *expenses* item

The *expenses* stated by the *Client* are stated in C2.2 Pricing Data

The *interest rate* is

0.00

% per annum

If the period in which payments are made is not three weeks and Y(UK)2 is not used

The period within which payments are made is

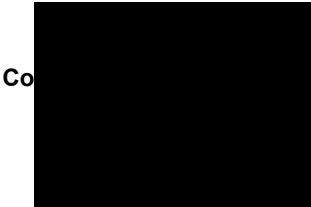
30 days
after receipt of all required documents as per clause C3.2.17 in the *framework scope*.

6 Compensation events

If there are additional compensation events

These are additional compensation events

None



8 Liabilities and insurance

If there are additional *Client's* liabilities

These are additional *Client's* liabilities

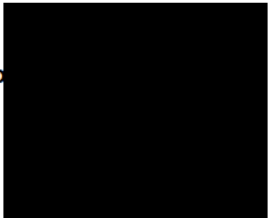
(1) None

(2) None

(3) None

The minimum amount of cover and the periods for which the *Consultant* maintains insurance are

EVENT	MINIMUM AMOUNT OF COVER	PERIOD FOLLOWING COMPLETION OF THE WHOLE OF THE SERVICE OR TERMINATION
The <i>Consultant's</i> failure to use the skill and care normally used by professionals providing services similar to the <i>service</i>	R 10 000 000.00 in respect of each claim, without limit to the number of claims	7 years
Loss of or damage to property and liability for bodily injury to or death of a person (not an employee of the <i>Consultant</i>) arising from or in connection with the <i>Consultant</i> Providing the Service	R 20 000 000.00 in respect of each event, without limit to the number of events	7 years
Death of or bodily injury to employees of the <i>Consultant</i> arising out of and in the course of their employment in connection with the contract	As per Compensation for Occupational Injuries and Diseases (COID) Act No. 130 of 1993 in respect of each event, without limit to the number of events	As per Compensation for Occupational Injuries and Diseases (COID) Act No. 130 of 1993



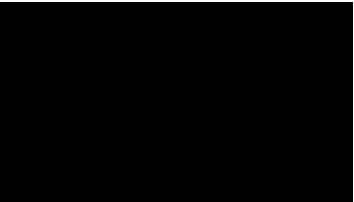
If the <i>Client</i> is to provide any of the insurances stated in the Insurance Table	The <i>Client</i> provides these insurances from the Insurance Table	
	(1) Insurance against	Not applicable
	Minimum amount of cover is	Not applicable
	The deductibles are	Not applicable

If additional insurances are be provided	The <i>Client</i> provides these additional insurances to	
	(1) Insurance against	Not applicable
	Minimum amount of cover is	Not applicable
	The deductibles are	Not applicable

The <i>Consultant</i> provides these additional insurances	(1) Insurance against	(To be completed per Work Order)
	Minimum amount of cover is	(To be completed per Work Order)
	The deductibles are	(To be completed per Work Order)
	(2) Insurance against	(To be completed per Work Order)
	Minimum amount of cover is	(To be completed per Work Order)
	The deductibles are	(To be completed per Work Order)
	(3) Insurance against	(To be completed per Work Order)
	Minimum amount of cover is	(To be completed per Work Order)
	The deductibles are	(To be completed per Work Order)

The *Consultant's* total liability to the *Client* for all matters arising under or in connection with the contract, other than the excluded matters is limited to

R 10 000 000.00 or twice the total value of the Work Order whichever is greater.



Resolving and avoiding disputes

The *tribunal* is

A court of competent jurisdiction in the Western Cape or Arbitration proceedings conducted in terms of the Arbitration Foundation of South Africa Rules or the Arbitration Act 42 of 1965, at the sole discretion of the *Client*.

If the *tribunal* is arbitration

The *arbitration procedure* is

Arbitration Foundation of Southern Africa Rules or arbitration in terms of the Arbitration Act 42 of 1965

The place where arbitration
is to be held is

Cape Town

The person or organisation who will choose an arbitrator if the Parties cannot agree a choice or if the *arbitration procedure* does not state who selects an arbitrator is

Chairperson of the Arbitration Foundation of Southern Africa (AFSA)

The *Senior Representatives* of the *Client* are

Name (1)

(To be confirmed per Work Order)

Address for communications

(To be confirmed per Work Order)

Address for electronic communications

(To be confirmed per Work Order)

Name (2)

(To be confirmed per Work Order)

Address for communications

(To be confirmed per Work Order)

Address for electronic communications

(To be confirmed per Work Order)

The *Adjudicator* is

Name

(To be confirmed per Work Order)

Address for communications

(To be confirmed per Work Order)

Address for electronic communications

(To be confirmed per Work Order)

The *Adjudicator nominating body* is

ICE-SA or appropriate built environment professional nominating body relevant to the specific Work Order scope as nominated by the *Client*.

X1: Price adjustment for inflation (Use Option C)

If Option X1.4 is used

The proportions used to calculate the Price Adjustment Factor are

0.	85	linked to the index for	services
0.			
0.			
0.			
0.			
0.			
0.			
0.		non-adjustable	
1.0			
0			

The *base date* for indices is

As defined in framework contract additional clause **Z2**

These indices are

Contained in Table A of the P0141 Consumer Price Index for the **CPI** for **services** published by Statistics South Africa.

X2: Changes in the law

If Option X2 is used

The *law of the project* is

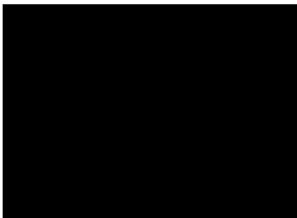
South African Law

X5: Sectional Completion

If Option X5 is used

The *completion date* for each section of the *service* is

<i>section</i>	<i>description</i>	<i>completion date</i>
(1)	(To be confirmed per Work Order)	(To be confirmed per Work Order)
(2)	(To be confirmed per Work Order)	(To be confirmed per Work Order)
(3)	(To be confirmed per Work Order)	(To be confirmed per Work Order)
(4)	(To be confirmed per Work Order)	(To be confirmed per Work Order)



X7: Delay damages

If Option X7 is used without

Delay damages for Completion of the whole of the *service* are

(To be specified per Work Order)

per day

Option X5

If Option X7 is used with Option X5 <i>section</i>	Delay damages for each <i>section</i> of the <i>service</i> are		
		description	amount per day
	(1)	(To be confirmed per Work Order)	(To be confirmed per Work Order)
	(2)	(To be confirmed per Work Order)	(To be confirmed per Work Order)
	(3)	(To be confirmed per Work Order)	(To be confirmed per Work Order)
	(4)	(To be confirmed per Work Order)	(To be confirmed per Work Order)
The delay damages for the remainder of the <i>service</i> are			(To be confirmed per Work Order)

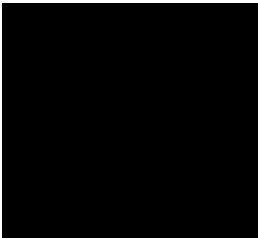
X10: Information modelling

If Option X10 is used

If no *information execution plan* is identified in part two of the Contract Data

The period after the Contract Date within which the *Consultant* is to submit a first Information Execution Plan for acceptance is

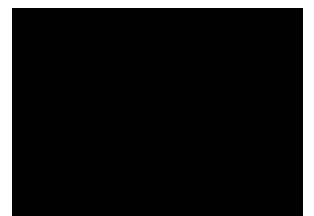
(To be confirmed per Work Order)

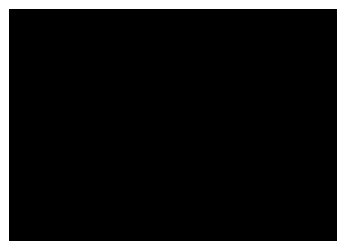


Additional conditions of contract

The *additional conditions of contract* are

- Z18 Framework contract clauses Z1 to Z17.
- Z19 The *Client* may impose the following additional penalties or fines for delay damages, as per Volume 1, Preference Schedule 23, which will be applicable to awarded Works Order contracts:
- 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)
- Z20 Further to the reasons stipulated in Section 91 of the Contract, the *Client* reserves the right to terminate the Works Order for any of the following reasons:
- if the *Consultant* 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;
 - 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 *Client* follows the processes as described in its SCM Policy and as otherwise required by applicable law; or
 - The implementation of the contract may result in reputational risk or harm to the *Client* as a result of (inter alia) in relation to the *Consultant*:
 - reports of poor governance and/or unethical behaviour;
 - association with notorious individuals and/or their families;
 - poor performance issues, known to the *Client*;
 - negative social media reports; or
 - adverse assurance (e.g. due diligence) report outcomes.





CITY OF CAPE TOWN

CORPORATE PROJECT, PROGRAMME AND PORTFOLIO MANAGEMENT DEPARTMENT

CONTRACT NO . 092C/2024/25

PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO
ENGINEERING AND BUILT ENVIRONMENT WORKS

C1.3 Occupational Health and Safety Agreement

ENTERED INTO BY AND BETWEEN

THE CITY OF CAPE TOWN ("*Client*")

and

PERAGAGE SOUTH AFRICA (PTY) LTD
("*Consultant*")

1. Introduction

A. The *Client* has engaged the services of the *Consultant* to provide Specialised Multidisciplinary Professional Services related to Engineering and Built Environment Works in terms of the The General Conditions of Contract of the New Engineering Contract, Version 4 (NEC4), Framework Contract (2017) with the New Engineering Contract, Version 4 (NEC4), Professional Service Contract (2017) as defined in TENDER NO. 092C/2024/25. ("*Services*").

1.1 Notwithstanding the performance of services by the *Consultant* for and on behalf of the *Client*, the parties intend that the provisions of section 37(1) of the Occupational Health and Safety Act, 1993 ("*OHSA*") should not apply to the relationship between the *Client* and the *Consultant*. Accordingly,

the parties have agreed to the arrangements and procedures contained in this Agreement to ensure compliance by the *Consultant* with the provisions of the OHSA.

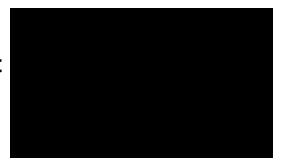
- 1.2 This Agreement is intended to comply with and constitutes the Agreement contemplated in Section 37(2) of the OHSA.

2. Duties and responsibilities of employers

Notwithstanding the provision of services by the *Consultant* to the *Client*, the parties acknowledge and agree that they are separate employers, as contemplated in the OHSA and accordingly, must each ensure compliance with the provisions of the OHSA.

3. Arrangements and procedures agreed between the parties

- 3.1 The *Consultant* shall identify all hazards associated with the Services to be performed, assess the risks associated with those hazards and take such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees, before resorting to personal protective equipment.
- 3.2 The *Consultant* shall prepare and implement written work procedures and instructions relating to the Services being performed by its employees. It is agreed that:
- 3.2.1 the *Consultant* shall prepare, implement, maintain, review and update work procedures, standards, rules and/or codes of practice setting out the manner in which work must be performed by its employees;
- 3.2.2 the *Consultant* will ensure that these procedures will form part of the health and safety training and communication provided by the *Consultant* to its employees; and
- 3.2.3 the *Consultant* shall ensure that measures are implemented to ensure that its employees comply with the safe work procedures applicable to work being performed.
- 3.3 The *Consultant* shall cause all its employees performing Services to be informed, in writing, regarding the scope of their authority.
- 3.4 The *Consultant* shall provide health and safety training to its employees. Without derogating from the generality of this obligation:
- 3.4.1 the *Consultant* will provide appropriate information, instructions and training to its employees which will include communication of information regarding the hazards associated with Services to be performed; and
- 3.4.2 health and safety training provided must meet the requirements of the employers duty to inform, as contemplated in section 13 of the OHSA.
- 3.5 The *Consultant* shall ensure that a system of supervision is in place and that the Services provided are provided under the general supervision of a person trained to understand the hazards associated with the Services and who has the authority to ensure that precautionary measures are taken.



- 3.6 The *Consultant* shall ensure that all applicable and appropriate statutory appointments required in terms of the OHSA and its regulations have been effected and that these appointments are legally valid and correct.
- 3.7 The *Consultant* shall ensure that its employees carrying out the Services have been appointed and authorised in writing to perform the Services.
- 3.8 The *Consultant* shall implement fair and appropriate disciplinary processes and related action against any of its employees regarding non-compliance by such employee with any health and safety standard, policy, practice and/or procedure, or who carries out any act or omission which impacts negatively on health and safety.
- 3.9 The *Consultant* shall implement systems of work so that its employees are able, as far as reasonably practicable, to work safely and without harm to their health. It is agreed that:
- 3.9.1 the *Consultant* shall implement and provide systems of work and machinery which are, as far as reasonably practicable, safe and without risks to health;
- 3.9.2 the *Consultant* shall take all necessary measures to ensure that the requirements of the OHSA are complied with by its employees;
- 3.9.3 these systems must include the overinspection of any machinery used by the employees of the *Consultant* on a daily basis and as part of a system of regular planned maintenance by the *Consultant*;
- 3.9.4 occupational hygiene and health monitoring will be conducted by the *Consultant* to ensure that health related hazards are identified and appropriately treated, in line with requirements of the OHSA and its regulations; and
- 3.9.5 that its employees undergo medical examinations as may be required in terms of the OHSA and its regulations and that no persons will be permitted to perform work unless they are medically fit to do so.
- 3.10 The *Consultant* shall ensure compliance with reporting requirements, including but not limited to:
- 3.10.1 the *Consultant* shall ensure that its employees report all unsafe or unhealthy working situations immediately after they become aware of such unsafe or unhealthy work situations to their direct supervisor;
- 3.10.2 the *Consultant* shall report all significant unsafe or unhealthy working situations to the *Client* through appropriate means, including, reports, health and safety meetings, and other communications, whichever is appropriate and applicable;
- 3.10.3 designate and appoint health and safety representatives and establish health and safety committees as may be required by the OHSA and ensure that regular meetings are held; and

3.10.4 the *Consultant* shall ensure that all reportable incidents involving its employees and/or equipment in the performance of the Services are reported to the Department of Labour and investigated as required by section 24 of the OHSA read with General Administrative Regulation 9.

3.11 The *Consultant* shall ensure that all required permits, consents, permissions, approvals, certificates, licences and similar regulatory documents are obtained, remain valid and are complied with.

4. Personal Protective Equipment

4.1 The *Consultant* shall ensure that necessary and appropriate personal protective equipment ("PPE") is provided in accordance with the provisions of the OHSA and that such PPE is used at all relevant times.

4.2 The *Consultant* warrants that its employees have been trained in the correct use, maintenance and limits of PPE and that its employees correctly utilise the PPE when required.

5. Undertaking to comply and indemnity

5.1 The *Consultant* undertakes to comply with the OHSA and all applicable regulations promulgated in terms of the OHSA at all times and to implement and maintain the procedures and arrangements referred to in this agreement in pursuance of this compliance.

5.2 The *Consultant* wholly indemnifies the *Client* for any losses, howsoever incurred, caused by, connected to or associated with the *Client* being held vicariously liable for the acts or omissions of the *Consultant* in complying with the duties of an employer, user or contractor in terms of the OHSA or any attempts whatsoever to hold the *Client* vicariously liable including all costs associated with the defence of such allegations.

Signed at _____ on _____ 2026

Witness _____ for the *Client*

1.
duly authorised and warranting such authority

2.
Signed at _____ on _____

Witness

for *Consultant*

1.

duily authorised and warranting such authority

2.

CITY OF CAPE TOWN

CORPORATE PROJECT, PROGRAMME AND PORTFOLIO MANAGEMENT DEPARTMENT

CONTRACT NO . 092C/2024/25

PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO
ENGINEERING AND BUILT ENVIRONMENT WORKS

C1.4 Insurance Broker's Warranty

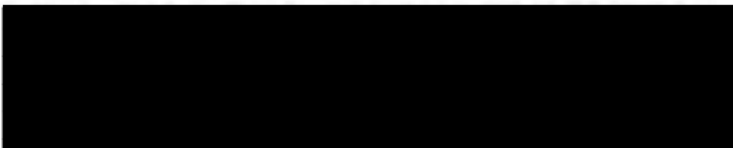
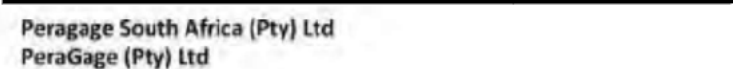


13 March 2024

To Whom it May Concern

CONFIRMATION OF PROFESSIONAL INDEMNITY, PUBLIC AND PRODUCTS' LIABILITY INSURANCE

In our capacity as the insurance brokers to Peragage South Africa (Pty) Ltd and PeraGage (Pty) Ltd, we confirm that our client has insurance cover in place as follows:

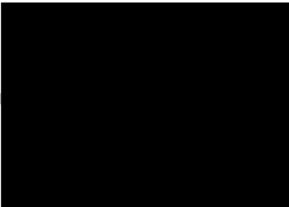
INSURER:	
POLICY NO.:	
INSURED:	Peragage South Africa (Pty) Ltd PeraGage (Pty) Ltd
COVER:	Professional indemnity
LIMIT OF INDEMNITY:	R20,000,000 each and every claim, including VAT and legal costs and expenses, per period of insurance
EXCESS	R150,000 each and every claim
PERIOD OF INSURANCE:	15 March 2024 to and including 31 March 2025
RETROACTIVE COVER DATE:	15 January 2017 - Gage Consulting (Pty) Ltd 01 March 2023 - PeraGage (Pty) Ltd
TERRITORIAL LIMITS:	Worldwide excluding USA and Canada and any jurisdiction applying the laws of USA and Canada.

The cover described above is subject to the terms, conditions and exclusions of the policy. We confirm that the annual premium due in respect of the above period of insurance has been paid in full.

Kind regards



092C/2024/25092C/2024/25



CITY OF CAPE TOWN

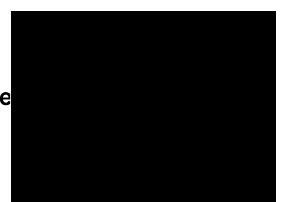
CORPORATE PROJECT, PROGRAMME AND PORTFOLIO MANAGEMENT DEPARTMENT

CONTRACT NO . 092C/2024/25

**PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO
ENGINEERING AND BUILT ENVIRONMENT WORKS**

C1.5 Form of Guarantee / Performance Security

Not Applicable



ANNEXURE A
CITY OF CAPE TOWN
CONTRACT GUARANTEES: APPROVED POLICY (updated 03/12/2020)

1. INTRODUCTION

In terms of the City's procurement policy, financial guarantees are required on behalf of contractors to secure certain performance and advance payment obligations of the contractor. The previous list of approved financial institutions from which the City accepted such guarantees has been reviewed and signed off by The Executive Director: Finance (CFO) in terms of the policy set out below.

2. POLICY

- (a) Contract guarantees may be accepted only from registered banks and insurance Companies having one of the following ratings from the credit rating agencies indicated:
 - (i) **Banks:** a short term rating of F1 (Fitch Ratings), A1 (Global Credit Rating Co.) or Prime-1 (Moody's)
 - (ii) **Insurers:** a claims paying ability rating of A- or above (Global Credit Rating) or A3 or above (Moody's)
- (b) A 100% cash deposit with the City (interest free) may be accepted as a contract guarantee in lieu of a paper guarantee.
- (c) The Executive Director: Finance (CFO) is authorized to add or delete, temporarily or permanently, the name of a financial institution to or from the list of approved guarantors, notwithstanding the absence or presence of an acceptable credit rating, if he or she is satisfied or unsatisfied as to its credit worthiness in a particular instance.
- (d) The list of financial institutions currently accepted by the City as a contract guarantor shall be posted on the City Web and maintained by the Treasury section of the Finance Department.

3. CURRENTLY APPROVED LIST OF FINANCIAL GUARANTORS (Updated 12 October 2021)

The following financial institutions are currently approved for issue of contract guarantees to the City:

National Banks

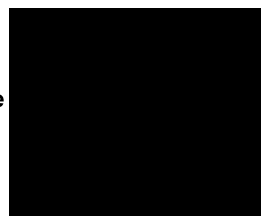
ABSA Bank Limited
Firststrand Bank Limited
Investec Bank Limited
Nedbank Limited
Standard Bank of South Africa Limited

International Banks (with branches in South Africa)

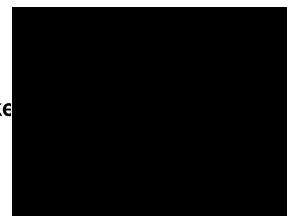
Barclays Bank PLC
Citibank NA
Credit Agricole Corporate and Investment Bank
HSBC Bank PLC
JPMorgan Chase Bank
Societe Generale
Standard Chartered Bank

Insurance Companies

American International Group Inc (AIG)
Bryte Insurance Company Limited
Coface SA
Compass Insurance Company Limited
Credit Guarantee Insurance Corporation of Africa
Limited Guardrisk Insurance Company Limited
Hollard Insurance Company Limited
Infiniti Insurance Limited
Lombard Insurance Company Limited
New National Assurance Company Limited
PSG Konsult Ltd (previously Absa Insurance)

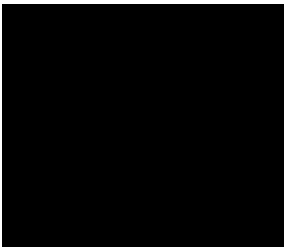


Regent Insurance Company Limited
Renasia Insurance Company Limited
Santam Limited



Part C2: Pricing Data

	Pages
C2.1 Pricing Assumptions.....	184 – 185



PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO
ENGINEERING AND BUILT ENVIRONMENT WORKS

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 Schedule of Rates are brief descriptions used to identify the activities for which prices are required. Typical Work Orders, 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:

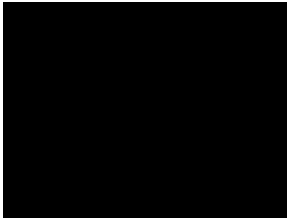
- (a) set out in the “Guide on Hourly Fee Rates for Consultants” issued by the Department of Public Service and Administration (DPSA rates); and
- (b) as prescribed by the body regulating the profession of the consultant.

- 1. For the purpose of the Activity Schedule, the following words shall have the meanings hereby assigned to them:

Unit: The unit of measurement for each item of work.
Rate: The agreed payment per unit of measurement.
Percentage: Supplier’s percentage mark-up.

- 3. A rate, sum, and/or price as applicable, is to be entered against each item in the Activity Schedule. **An item against which no rate 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.
- 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 provide 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 *Supplier* (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 *Supplier* to his employees or sub-consultants for the duration of the local office establishment (see item 19 below) in fulfillment of the Contract.

- 1. The tenderer may not group a number of items together and tender one lump sum for such group of items.
- 2. **Tenderers may only price the Award Packages of Preference as they have indicated on Returnable Schedule 26, in accordance with clauses 3.6.1 and 4.10.5 in Part T1.2 Tender Data.**



3. 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 Work Orders for tender evaluation purposes in accordance with clause 5.11.1 in Part T1.2: Tender Data.
4. 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 4.10.5 in Part T1.2: Tender Data).
5. The procedures for the allocation of Work Orders are specified in Part C3.3 – Selection Procedure and C3.4 – Quotation Procedure, Volume 3 of the Contract Document.
6. All rates shall be adjusted in terms of clause X1 of the General Conditions of Contract.
7. A higher category person undertaking lower category work will be reimbursed, in respect of time-based fees, at the lower category rate.
8. Tenderers are to note that only those recoverable expenses listed in the Schedules of Rates will be reimbursed to the *Supplier*. 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.
9. Payment will only be made for copies of reports and drawings when requested by the Employer, and all drafts shall be for the *Supplier's* account.
10. Unless otherwise agreed with the Employer, any air travel will be for the *Supplier's* account.
11. 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 only be reimbursed for travelling expenses in respect of trips exceeding 60km per journey (round trip). Payment shall only be made for that portion of the distance that exceeds 60km. For the purposes of travel reimbursement, the local office is considered to be within the City of Cape Town municipal boundary and within a 60km radius from the Civic Centre, 12 Hertzog Boulevard, Foreshore, Cape Town. The *Supplier* shall identify the local office location prior to the commencement of Work Order contracts.
12. Travel time and all associated travel costs from outside the City of Cape Town municipal boundary to the local office (eg. air travel) will not be reimbursable.
13. Where fractions of a cent occur in calculations of prices and amounts, they shall be rounded up/down to the nearest whole cent.
14. Clause 4.13.7(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.
15. Travel SARS Rates applicable

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.

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PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO
ENGINEERING AND BUILT ENVIRONMENT WORKS

C3.1 Definitions

“Award Package” means the discipline specific grouping of services to be provided by the *Supplier* as outlined in the *framework scope*. The word “Award Package” may be shortened to “AP” combined with the package number (e.g. AP1 means Award Package No. 1).

“Act of Insolvency”, amongst other things, means any act of insolvency as defined in section 8 of the Insolvency Act and as further enumerated and explained in case law.

“Guidelines” means the discipline specific guidelines as listed in C3.2.4.

“HVAC” means heating, ventilation, and air conditioning.

“Key Personnel” means specific personnel within the *Supplier’s* organisation or through established agreements are available throughout the framework contract duration.

“Preference Schedule” means Schedule 23, Volume 2 of the Tender Documents.

“Project” means investigation, construction, maintenance or improvement works procured by the *Client*.

“Project Leader” means the duly nominated and qualified professional person provided by the *Supplier* to lead and coordinate Work Order contract teams.

“Schedule of Rates” means the accepted contract rates in C2. Pricing Data.

“Stage Gate Review” mean the *Client* internal process at which Projects are assessed by an internal committee to ascertain whether the Project stage is complete and is ready to proceed to the next stage.

“Alternative Supplier” means the *Supplier* appointed for a specific Award Package to this contract as “Alternative Supplier” in C1.1 – Form of Offer and Acceptance.

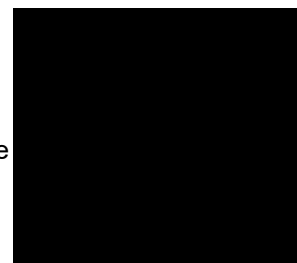
“Verifiable Postgraduate Experience” means experience gained from the time of obtaining the relevant qualification in that particular service or discipline which can be verified by records.

“Winner” means the *Supplier* appointed for a specific Award Package to this contract as “Winner” in C1.1 – Form of Offer and Acceptance.

“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.

“PSC” means the Professional Service Contract as defined in the Contract Data applicable to Work Order contracts.



C3.2 FRAMEWORK SCOPE

C3.2.1 INTRODUCTION AND *CLIENT'S* OBJECTIVE

The Engineering Management Branch in the Corporate Services Directorate, City of Cape Town was established to provide independent technical advisory services and oversight for project planning and execution to the City's functional line departments. Given the size of organization and the scale of its operations, in order to compliment and support the services provided by the Engineering Services Unit, there is a need for external *Suppliers* to be utilised to support in the delivery of specific city identified projects.

The appointed *Supplier* may be required to full or partial services to any department in the *Client's* organisation as defined in the specific Works Order briefs. All works will be carried out within the municipal boundaries of The City of Cape Town or as specifically stipulated in the appropriate scope.

C3.2.2 DETAILS OF FRAMEWORK ARRANGEMENT

The range of services is divided into four Award Packages as follows:

Award Package No. 1 – Buildings

Award Package No. 2 – Civil Infrastructure, Mechanical & Electrical Engineering Services

Award Package No. 3 - Geotechnical and Survey Services

The *Client* intends to appoint two (2) Suppliers per Award Package under this framework contract based on the criteria and conditions provided under Volume 1 – Tendering Procedures. The Suppliers appointed for each Award Package are Winner and Alternative Supplier.

The scope of services included in each Award Package is outlined in all relevant sections below.

The *Supplier* will be considered for Time Charge Orders and Work Orders under the Award Package to which they were appointed in terms of the Form of Offer and Acceptance (C1.1).

The *Client* may issue any number of Time Charge Orders or Works Orders including zero.

C3.2.3 GENERAL REQUIREMENTS

This section applies to all Award Packages and includes general requirements applicable to the execution of Time Charge Order and Work Order contracts.

The Supplier to provide the professional services necessary for the implementation of Projects and advisory services to the *Client*. Projects are procured through a competitive bidding process and must comply with all requirements of the Municipal Finance Management Act, 2003 and the Municipal Supply Chain Management Regulations, 2005.

A dedicated Project Leader is required where Work Orders involve multiple discipline specific professionals. The Project Leader has the minimum experience and qualification attributes as stated below:

Category B, Project Manager, Engineer or Quantity Surveyor as defined in C3.2.20.2, Note A1 or C3.2.21.2 Note B1 or Error! Reference source not found. or Note D1.

For small and less complex Work Orders, the Project Leader may be a person involved in functional execution of the Work Order. The *Supplier* includes the role, proposed utilisation and details of the Project Leader in the *Supplier's* quotation.

The *Supplier* will provide services under Work Order contracts to any Department or Directorate in the City of Cape Town. All Work Orders will be executed within the geographical borders of the City of Cape Town. The *Supplier* personnel engaged in Work Order contracts should be available for meetings, site visits and construction monitoring anywhere within the geographical borders of Cape Town within 48 hours of the request by the *Client's Representative* or *Service Manager* to do so.

C3.2.4 GUIDELINE REFERENCES

The following industry standard guidelines apply for the execution of Work Orders as expanded or amended by the individual Work Order scope:

Engineering (All disciplines) - The relevant sections as described in the Scope of Services of the Guideline for Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), Board Notice 138 of 2015 as gazetted in Government Gazette No. 39480, 4 December 2015.

Quantity Surveying - The relevant sections of the 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), Board Notice 170 of 2015 as gazetted in Government Gazette No. 39134, 28 August 2015.

Architecture - The relevant sections as described in the 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), Board Notices 121 and 122 of 2015 as gazetted in Government Gazette no. 38863, 12 June 2015.

Landscape Architecture - The relevant sections as described in the Scope of Services 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.co.za).

Project Management - The relevant sections as described in the Guideline Scope of Services and Recommended Guideline Tariff of Fees for Persons Registered in terms of the Project and Construction Management Professions Act, 2000 (Act 48 of 2000), Board Notice 202 of 2011 as gazetted in Government Gazette No. 34858, 23 December 2011.

Health and Safety - The relevant sections 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.

The above Guidelines has reference to scope of work and deliverables only. The financial fee calculations and fee guidelines contained in the Guidelines are not applicable to this contract and agreed contract rates apply for all Work Orders.

C3.2.5 GENERAL SCOPE OF SERVICES

The general scope of services described in this section applies to all Award Packages and includes requirements that may be applicable to the execution of Time Charge Order and Work Order contracts.

C3.2.5.1 Normal Services

Stage 1 – Inception

Basic scope of services as detailed in the Guidelines. Any reference to an agreement in this section refers to the Work Order contracts.

The *Supplier* may be required to compile a report for the scoping Stage Gate Review and attend the Stage Gate Review session.

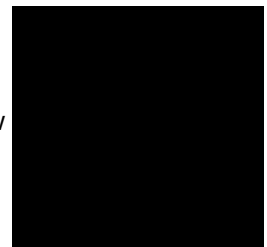
Stage 2 – Concept and Viability

Basic scope of services as detailed in the Guidelines.

The *Supplier* may be required to compile a report for the feasibility and/or concept design Stage Gate Review and attend the Stage Gate Review session.

Stage 3 – Design Development

Basic scope of services as detailed in the Guidelines.



Design development for renovation and upgrade Projects shall consider and minimise disruption to the working environment of staff adjacent to work 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.

The *Supplier* is 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.

Format, template, number and type of copies for drawings and reports to be specified in the Work Order brief.

The *Supplier* may be required to compile a report for the detailed design Stage Gate Review and attend the Stage Gate Review session.

Stage 4 – Documentation and Procurement

Basic scope of services as detailed in the Guidelines.

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

The *Supplier* shall prepare construction contract document based on the Construction Industry Development Board's (CIDB) or non-CIDB format, as agreed for the Work Order with the *Client*. The *Supplier* shall liaise with the *Client* during the preparation of the contract document to determine any other specific requirements.

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

The *Supplier* should note that it is the *Client'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 *Supplier* 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.

The *Supplier* shall prepare a draft contract document and should be submitted to the *Client* for scrutiny at least four weeks prior to the Bid Specification Committee meeting taking place. The *Supplier* 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 *Supplier* shall supply the *Client* with an electronic copy of the documents and drawings.

The *Supplier* shall be responsible for providing the *Client* with the required number of copies of plans and tender documents for tender purposes (both hard copy and on a flash drive). The requirements are to specified in the Work Order brief.

The *Supplier* 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 *Supplier* shall prepare a technical evaluation report for consideration by the *Client's* Bid Evaluation Committee (BEC). The *Supplier* 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 *Client*, the *Supplier* shall facilitate the signing up of the construction contract, in consultation with the *Client*.

Stage 5 – Construction Administration and Inspection

Basic scope of services as detailed in the Guidelines.

The *Supplier* 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 *Supplier* 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 *Supplier*.

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

The *Supplier* may be required to compile a report for the implementation Stage Gate Review and attend the Stage Gate Review session.

Stage 6 – Close-out

Basic scope of services as detailed in the Guidelines.

The *Supplier* prepares and coordinates the preparation of as-built record drawings, operation and maintenance manuals and any other documentation related to the operation and maintenance of the asset.

The *Supplier* compiles a project close-out report for submission to the *Client*, 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.

The *Supplier* may be required to compile a report for the close-out Stage Gate Review and attend the Stage Gate Review session.

C3.2.5.2 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 and expanded upon in the Work Order Scope.

C3.2.5.3 Additional Services

The *Supplier* may be required to provide additional services, the scope of which is set out in the relevant sections of the Guidelines. In addition, the following requirements apply.

C3.2.5.3.1 Service Enquiries/Wayleave Applications

The *Supplier* is 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.

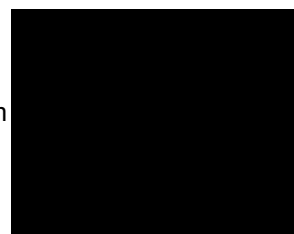
C3.2.5.3.2 Preferential Procurement and Targeted Participation

The *Supplier* provides all services related to preferential procurement and targeted participation in respect of the Project contract including but not limited to:

- 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.
- 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).

C3.2.5.3.3 Level 3 Construction Monitoring

The level of construction monitoring required, if any, will be stated in the Works Order brief, as defined in the Schedule of Rates applies to all full time construction monitoring services.



The *Supplier* acts as the *Client's* Representative in terms of the Occupational Health and Safety Act.

The *Supplier*, in submitting a tender for this professional services contract, shall be deemed to have acknowledged acceptance of the appointment as the *Client'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 *Client* accept the tender. The *Supplier* shall, as such, execute all of the duties of the *Client* as contemplated in the Construction Regulations.

C3.2.5.4 Environmental, Public Participation and Heritage

C3.2.5.4.1 Environmental Assessment Practitioner

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 *Client*. A Review EAP must fulfil the requirements of an EAP and must be registered with EAPASA.

C3.2.5.4.2 Public Participation Practitioner

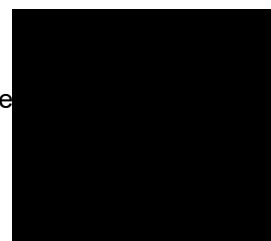
When required, a Public Participation Practitioner will assist with any Environmental Impact Assessments or similar.

C3.2.5.4.3 Environmental Control Officer

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.

Where required for a specific Work Order, the *Supplier* provides 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 *Client's Representative/ Service Manager/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 *Client's Representative/ Service Manager/Engineer/Principal Agent* if the specifications are not followed.
- (e) to review construction method statements for approval by the *Client's Representative/ Service Manager/Engineer/Principal Agent*.
- (f) to assist the *Client's Representative/ Service Manager/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 *Client's Representative/ Service Manager/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 *Client's Representative/ Service Manager/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.

C3.2.5.4.4 Environmental Auditor

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.

C3.2.5.4.5 Heritage Assessment Practitioner

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.

C3.2.5.5 Training of Personnel

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

The preferred situation will be that the Trainee is incorporated into the *Supplier's* team for a particular Work Order. 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

Remuneration will be based on contract rates for the effective time spent by the personnel in the supervision and training of the Trainee.

C3.2.5.6 Other Services

The *Supplier* will provide all services which are within the capabilities of the Award Package personnel as detailed in sections C3.2.20.2, C3.2.21.2, **Error! Reference source not found.**, **Error! Reference source not found.** as applicable.

Where the *Client* requires materials, equipment, testing and/or any other recoverable expenses not specifically covered in the *framework scope*, such items will be provided by the *Supplier* on a cost basis plus administration fee as per the Schedule of Rates. Prior approval needs to be obtained from the *Client* before these items may be procured.

C3.2.6 COMMUNICATIONS

Supplier submits requests for formal approval, claims, invoices and notifications in electronic format, followed by original hard copy for record.

Electronic communications are subject to the provisions of the Electronic Communications and Transactions Act, 2002. For the purposes of this contract, Electronic communications are deemed to be received when the sender receives a delivery receipt or reply message from the recipient or if the recipient has acted on the communication received.

The *Supplier* sends to the *Client*, technical drawings and information models in Portable Document Format (PDF) plus any applicable working document formats and configuration file formats including but not limited to; .rvt, .ifc, .nwd, .dwg, .ctb.

The *Supplier* provides hard copies for drawings, contracts & reports when instructed to do so by the *Client's Representative or Service Manager*. Compensation for costs associated with hardcopy production is in accordance with the Schedule of Rates.

C3.2.7 HEALTH & SAFETY

The *Supplier* shall conduct his own activities in compliance with the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), and Construction Regulations 2014 and ensure that any sub-consultants/contractors employed by the *Supplier* also comply with the requirements of the Act and Regulations. The *Supplier* shall enter into an agreement with the *Client* in this regard before the commencement of any Work Order under this contract (Form C1.3, Occupational Health and Safety Agreement Part C1, refers).

C3.2.8 REPORTING

In addition to the reports required as part of the scope of services, the *Supplier* may be required to prepare, or contribute to, ad hoc reports on specific aspects of a Project.

The *Supplier* shall submit monthly cost reports to the *Client* showing expenditure in respect of both the Work Order contract and the Project along with the projected expenditure to the end of the relevant financial year.

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

A preliminary Project Close-Out Report shall be submitted to the *Client* 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.

C3.2.9 APPLICABLE LAWS, POLICIES, PROCEDURES STANDARDS

The *Supplier* shall ensure that all applicable national and international laws and standards are complied with 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.

The *Supplier* shall comply with all requirements of SANS 10400 – The National Building Regulations including the requirements of oversight, inspection and approval of designs and works by the relevant competent persons as defined in the regulations.

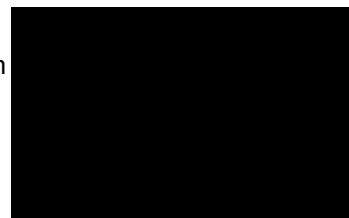
The latest editions of the Municipal Finance Management Act and all City of Cape Town Supply Chain Management Policies and correspondings Standard Operating Procedures will apply. Abuse of the supply chain management system is not permitted and may result in cancellation of the contract, restriction of the *Supplier*, and/or the exercise by the Employer of any other remedies available to it as described in the SCM Policy.

Work Order scope must list all specifications and standards applicable to the Work Order.

C3.2.10 APPROVALS

The *Supplier* is responsible for obtaining the following approvals:

- (a) Approval of the implementation programme from the *Client*,
- (b) Approval of the conceptual and preliminary designs from the *Client*,
- (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 *Client*,
- (f) Wayleave approval from all service authorities,
- (g) Approval of the Engineers Representative from the *Client*,
- (h) In respect of time based services, approval of the allocation of staff from the *Client*,
- (i) Approval for the employment of specialist sub-consultants from the *Client*,
- (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 *Client*,
- (l) Approval of the accommodation of traffic plans from the Traffic Manager.



Notwithstanding any approval received from the *Client*, the *Supplier* remain responsible for all work carried out by the *Supplier* and its sub-consultants in terms of this contract

C3.2.11 PROJECT PROCUREMENT

C3.2.11.1 Preferential Procurement

The Work Order 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.

The *Supplier's* attention is drawn to other sanctions that may be applied by the *Client* (listed in the Preference Schedule) with due consideration to the circumstances.

C3.2.11.2 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 *Supplier* shall submit to the *Client's Representative or Service Manager*, on a monthly basis, a **B-BBEE Sub-contract Expenditure Report**. The format of this report is provided in Annex 2 attached.

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

The *Supplier* shall furthermore, on the written request of the *Client's Representative or Service Manager*, provide documentary evidence showing the value of work sub-contracted to any or all of the sub-contractors employed by the *Supplier*.

C3.2.11.3 Forms for contract administration

The *Supplier* 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):

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

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

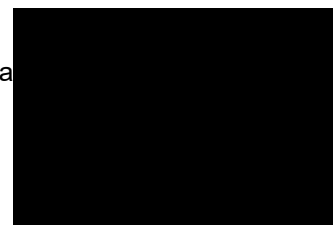
The Joint Venture Expenditure Report is required for monitoring the joint venture's compliance with the percentage contributions of the JV partners as tendered, where the joint venture has been awarded preference points in respect of its consolidated B-BBEE scorecard.

In respect of Annexes 1 and 2, the *Client* shall, in addition to any other sanctions available to it, apply the financial penalties applicable to breach of preference conditions in the Preference Schedule. 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 *Client's Representative or Service Manager*.

C3.2.12 MEETINGS

The specific requirement, frequency, type and number of meetings for Work Order contracts is provided by the *Client* in the Work Order brief.

C3.2.12.1 Management Meetings



During the initial stages of Projects (Planning, Studies, Investigations and Assessments; Inception; Concept and Viability and Design Development) the *Supplier* will be expected to attend monthly management meetings with the *Client's Representative, Service Manager* and others, convened for the purpose of managing these Projects. The Project Leader will represent the *Supplier* team responsible for executing the Work Order.

C3.2.12.2 Community/Stakeholder Meetings

The *Supplier* 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.

C3.2.12.3 Supply Chain Management (SCM) Committee Meetings

During the course of the Documentation and Procurement stage, the *Supplier* 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 *Client*.

The *Supplier* 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.

C3.2.12.4 Site/Technical Meetings

During the Contract Administration and Inspection stage of the Project, the *Supplier* shall convene and run monthly site meetings at which the *Client* 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.

C3.2.12.5 Ad-hoc Meetings

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

C3.2.12.6 General

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

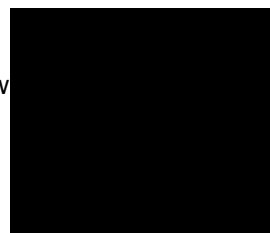
C3.2.13 INTELLECTUAL PROPERTY RIGHTS AND CONFIDENTIALITY

Any intellectual property (including but not limited to source documents, designs, maps, drawings, reports, statistics, recordings, photography, computer software, electronic documents, etc.) that results from the execution of a Time Charge Order or Work Order contracts will be the sole property of the City of Cape Town.

In alignment with the above, any information arising from or within a Time Charge Order, Work Order or 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 or used marketing purposes except where permission is granted in writing for that specific purpose.

The following provisions apply in terms of Intellectual Property:

- a) The *Supplier* acknowledges that it shall not acquire any right, title or interest in or to the Intellectual Property of the *Client*.
- b) The *Supplier* hereby irrevocably assigns to the *Client*, all Intellectual Property created, developed or otherwise brought into existence by it for the purposes of the contract and waives and abandons all moral rights therein, and the *Client* hereby accepts same, unless the Parties expressly agree otherwise in writing.
- c) The *Supplier* shall, and warrants that it shall:



- I. not be entitled to use the *Client's* Intellectual Property for any purpose other than as contemplated in this contract;
 - II. not modify, add to, change or alter the *Client's* Intellectual Property, or any information or data related thereto, nor may the *Supplier* 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 *Client*;
 - III. not apply for or obtain registration of any domain name, trademark or design which is similar to any Intellectual Property of the *Client*;
 - IV. comply with all reasonable directions or instructions given to it by the *Client* in relation to the form and manner of use of the *Client's* Intellectual Property, including without limitation, any brand guidelines which the *Client* may provide to the *Supplier* from time to time;
 - V. ensure that its employees, directors, members and contractors comply strictly with the provisions above; unless the *Client* expressly agrees thereto in writing after obtaining due internal authority;
 - VI. notify the *Client* of any breach of the *Client's* Intellectual Property rights as soon as it becomes aware of same and take all steps reasonably necessary to protect the *Client's* Intellectual Property rights.
- d) The *Supplier* represents and warrants to the *Client* 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 and holds the *Client* harmless against any claims, liability, loss, damages, costs, and expenses arising from the infringement or unauthorised use by the *Supplier* of any third party's Intellectual Property rights.
- e) In the event that the contract is cancelled, terminated, ended or is declared void, all of the *Client's* Intellectual Property, and all information and data related thereto, shall be immediately handed over to the *Client* by the *Supplier* and no copies thereof shall be retained by the *Supplier* unless the *Client* expressly and in writing, after obtaining due internal authority, agrees otherwise.
- f) Copyright in 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 *Client*. Where copyright is vested in the *Supplier*, the *Client* 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 *Supplier's* permission to copy for such use.
- g) The ownership of data and factual information collected by the *Supplier* and paid for by the *Client* shall, after payment by the *Client*, lie with the *Client*.

C3.2.14 QUALITY CONTROL

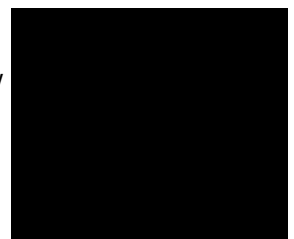
The *Supplier* maintains and implements an internal quality control system for the provision of services and deliverables in accordance with the ISO 9001:2015 standard.

The *Supplier* submits with every Work Order Quotation a quality plan for the proposed works.

C3.2.15 RETENTION OF DOCUMENTS

The *Supplier* retains copies of documentation in all of the following formats:

- Un-editable electronic format such as PDF and;
- Editable working documents (e.g. .dwg, .rvt, .docx, .xlsx, .mpp)



When requested to do so by the *Client* within the *period of retention*, the *Supplier* submits any documents retained in terms of clause 13.9 of the PSC to the *Client* within 7 days.

C3.2.16 PROGRAMME REQUIREMENTS

The *Supplier* provides the programme in Microsoft Project Format (.mpp), Portable Document Format (PDF) and hard copy unless otherwise specified in the Work Order scope.

C3.2.17 APPLICATION FOR PAYMENT

The *Supplier* submits application for payment against Work Order contracts on a monthly basis or at the conclusion of the work package. The day of submission to be specified in the Work Order scope. The application for payment includes the following information:

- Tax invoice including purchase order number;
- Resources and time utilised for the payment period;
- Reference to deliverables provided and;
- Original invoices for cost reimbursement items.

Period for payment commences only once all of the required information as listed above is received.

Section 20(1) of the Value Added Tax Act No. 89 of 1991 requires that the *Supplier* 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 *Supplier* shall provide a tax invoice (VAT invoice) which shall be included with each account delivered to the *Client*. Failure by the *Supplier* to provide a tax invoice (VAT invoice) timeously may delay payment by the *Client* and **no interest shall accrue**.

C3.2.18 SUPPORT RESOURCES

The *Supplier* must have access to, and familiarity with, licenced software as follows:

- Drawing software packages that is compatible with the City of Cape Town's drawing packages. The City of Cape Town currently uses AutoCAD 2018 Version and AutoCAD Civil 3D.
- Building Information Modelling Software (Autodesk Revit or equivalent).
- Project management software (Microsoft Project or equivalent package compatible with mpp files.
- Relevant technical analysis and design software required to perform the core functionalities of each discipline. The use of free design services and software which favours proprietary products or solutions as part of their outcome shall not be permitted.

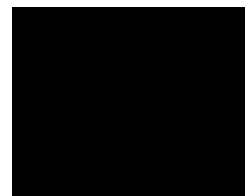
C3.2.19 KEY PERSONNEL MINIMUM CRITERIA

The *Supplier* maintains all *Key Personnel* listed in the tables below applicable to the Award Package which the *Supplier* has been awarded. *Key Personnel* are utilised by the *Supplier* to perform the services as outlined in the *framework scope*. Additional personnel are employed or contracted by the *Supplier* to fulfil the full range of services as required in the *framework scope*, these additional personnel are not classified as *Key Personnel*. Details and CV's of *Key Personnel* which are submitted as part of the tender and evaluation process in accordance with the requirements of Volume 1 – Tendering Procedures, will remain the nominated *Key Personnel* unless substituted as described below.

Key Personnel are not substituted without approval of the *Client's Representative*. 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 *Client*.

The *Supplier* informs the *Client* within 3 days of any changes or proposed changes to the Key Personnel identified for this contract. If the minimum Key Personnel requirement is not maintained, the *Client* may exclude the *Supplier* from consideration for Time Charge Orders or Work Orders.

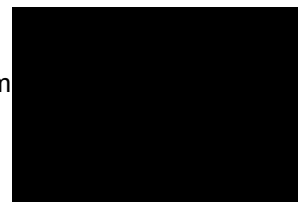
The *Client's Representative* notifies the *Supplier* that the minimum requirements for Key Personnel are not in accordance with the *framework scope*. If the minimum requirements for Key Personnel is not restored within 4 weeks of the *Client's Representative* notice, the *Client* may terminate this framework contract.



Award Package 1 – Key Personnel

KEY PERSONNEL (Award Package 1 – Building)				
Item	Service	Personnel Requirements	Number of personnel required for Award Package 1	Schedule of Rates Reference (Rate Category)
1.1.	Architecture	The required personnel must be a professional Architect (Pr.Arch) or professional Architectural Technologist (Pr.ArchTech) registered with SACAP. Architectural personnel shall have proven verifiable postgraduate experience in the field of building architecture	One (1)	1.2.6 (A2)
1.2.	Structural Engineering	The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr.Tech Eng) registered with the Engineering Council of South Africa (ECSA). The required personnel shall have verifiable postgraduate experience in the field of structural engineering related to building structures.	One (1)	1.2.2 (C2)
1.3.	Mechanical Engineering	The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr. Tech Eng) registered with the Engineering Council of South Africa (ECSA) The required personnel shall have verifiable postgraduate experience in the field of heating, ventilation and air conditioning (HVAC).	One (1)	1.2.10 (M2)
1.4.	Electrical Engineering	The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr. Tech Eng) registered with the Engineering Council of South Africa (ECSA). The required personnel shall have verifiable postgraduate experience in the field of high or medium voltage electrical systems. .	One (1)	1.2.14 (E2)

4.1.4.2.2 Award Package 2 – Key Personnel



KEY PERSONNEL (Award Package 2 – Civil Infrastructure <u>Mechanical and Electrical Engineering Services.</u>)				
Item	Service	Personnel Requirements	Number of personnel required for Award Package 2	Schedule of Rates Reference
2.1.	Structural Engineering	The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr.Tech Eng) registered with the Engineering Council of South Africa (ECSA) and Committee of Transport Officials (COTO) Certified Bridge Inspector. The required personnel shall have verifiable postgraduate experience in the field of structural engineering related to bridges, culverts and infrastructure relate structures	One (1)	2.2.2 (C2)
2.2.	Civil Engineering	The required personnel must be a professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng). The required personnel shall have verifiable postgraduate experience in the field of roads, stormwater and sewer drainage systems.	One (1)	2.2.2 (C2)
2.3	Mechanical Engineering	The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr. Tech Eng) registered with the Engineering Council of South Africa (ECSA) The required personnel shall have verifiable postgraduate experience in the field of heating, ventilation and air conditioning (HVAC).	One (1)	3.2.10(M2)
2.4	Electrical Engineering)	The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr. Tech Eng) registered with the Engineering Council of South Africa (ECSA). The required personnel shall have verifiable postgraduate experience in the field of high or medium voltage electrical systems.	One (1)	3.2.14 (E2)



4.1.4.2.3 Award Package 3 – Key Personnel

KEY PERSONNEL (Award Package 4 – Geotechnical & Surveying)				
Item	Service	Personnel Requirements	Number of personnel required for Award Package 4	Schedule of Rates Reference
3.1	Geotechnical Engineering	The required personnel must be a professionally registered Civil Engineer or Civil Engineering Technologist (Pr. Eng or Pr.Tech Eng) with verifiable postgraduate experience in the field of geotechnical engineering.	One (1)	4.2.2 (C2)
3	Engineering Geology	The required personnel must be professionally registered (PrSciNat) with at least 10 (ten) years verifiable postgraduate experience in the field of engineering geology. The required personnel must have at least a NQF level 8 (including an Honours degree) in engineering geology or similar earth science field of expertise.	One (1)	4.2.18 (S2)

C3.2.20 AP1 - BUILT ENVIRONMENT SERVICES – SPECIFIC SCOPE

This section applies to Award Package No. 1 - **Buildings**

C3.2.20.1 General

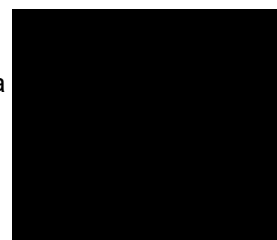
The *Supplier* is required to provide the professional services by the utilization of personnel as required in section C3.2.20.2 for Work Order contracts related to the following typical Projects. The typical Projects listed below are not exhaustive and Work Orders briefs may include any Project that are within the capabilities of the personnel listed in C3.2.20.2.

Feasibility studies, planning, advisory services, design, project management, cost consulting, construction monitoring, commissioning and operational advisory services for the following types of projects:

- Building Design Experience
- Structural Building Assessments
- Civil Building Experience
- HVAC and Wet Services on Buildings
- Fire Engineering Experience on Buildings
- New build commercial, industrial, residential and leisure buildings.
- On-plot services for new and refurbished building projects
- Refurbishment of existing buildings.
- Freestanding and functional structures.
- Building services including in-building electrical distribution, wet services and HVAC.
- On-plot roads, parking, sewer and stormwater.
- Building management systems and security.
- Vertical transportation (escalators and elevators).
- Fire fighting and fire detection systems

Investigation Services as follows:

- Geotechnical investigations scoping
- Topographical and land surveys scoping
- Environmental investigations and studies
- Heritage studies



- Forensic engineering investigations and expert witness services
- Structural assessments.

Provide input and advisory services related to internal City of Cape Town initiatives, including but not limited to:

- Technical, contractual and cost-related advice.
- Building Information Modelling implementation
- Smart City initiatives
- Contract improvements
- Development of guidelines and specifications
- Maturity Assessments

C3.2.20.2 Personnel requirements

The requirements of the various personnel are contained in the notes provided in this section. The *Supplier* must be able to provide the services of personnel for Work Order contracts to the full extent listed in this section.

The following Notes (Note A1 to A32) are applicable to Built Environment Services:

Note A1. General Note: The following note shall be applicable to all personnel and should be read in conjunction with specific requirements contained in Notes A2 to A32, if applicable.

Category A: The required personnel must be professionally registered with at least **20 (twenty) years** verifiable postgraduate experience in their specific field whose expertise and relevant experience is nationally or internationally recognized and who provides advice at a level of specialization where such advice is recognized as that of an expert.

Category B: The required personnel must be a professionally registered with at least **10 (ten) years** verifiable postgraduate experience in their specific field who, jointly or severally with other partners, co-directors or co-members, 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 proven 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 with at least **5 (five) years** verifiable postgraduate experience in their specific field and with adequate expertise performing work of a technical nature and who carry the direct technical responsibility for one or more specific activities related to a project.

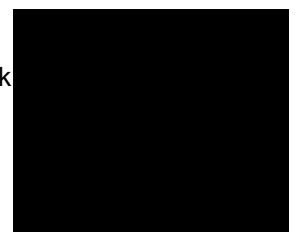
Category D: All other salaried technical staff with adequate expertise and relevant experience performing work of a technical nature with direction and control provided by any person contemplated in categories A, B or C. Need not be professionally registered and can be an Architect, Engineer, Scientist, Technologist or Technician (as applicable).

Note A2. Architect: Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: All architectural personnel shall have verifiable postgraduate experience in the field of building architecture that may include conceptual design, massing, visualization and rendering, site development plans, coordinating other disciplines, plan approvals, fenestration, solar studies, interior design, wayfinding signage and other architectural services related to building works. Extent of the experience required as per Note A1. The personnel shall have a degree in Architecture (NQF level 7 minimum).

Categories A, B & C - The required personnel must be a professional Architect (Pr.Arch) or professional Architectural Technologist (Pr.ArchTech) registered with SACAP capable of acting as the Approved Competent Person in terms of regulation A19 of the National Building Regulations and Building Standards Act, 1977.

Note A3. Landscape Architect: Categorisation shall be defined as per Note A1 with the following specific requirements:



Categories A, B, C, D: All architectural personnel shall have verifiable postgraduate experience in the field of landscape architecture or urban design including conceptual design and visualization, soft landscape, hard landscape, urban furniture, wayfinding signage and other landscape architectural services. Extent of the experience required as per Note A1. The personnel shall have a degree or postgraduate qualification in Landscape Architecture (NQF level 7 minimum).

Categories A, B & C - The required personnel must be a professional registered with the South African Council for Landscape Architectural Profession (SACLAP) or other proven equivalent registration.

Note A4. **Green Building Specialist** The required personnel must be a qualified Engineer or Architect registered as a Green Star Accredited Professional with the Green Building Council South Africa (GBCSA) or equivalent, with at least 8 (eight) years verifiable postgraduate experience in the design and certification of a Green Star registered projects for a range of building types with a greater understanding of environmental issues related to the built environment and property industry.

Note A5. **Town Planner:** The required personnel must be a registered Professional Planner (Pr. Pln) with the South African Council for Planners (SACPLAN), with at least 8 (eight) years verifiable postgraduate experience in urban planning and regulatory approvals (incl. zoning, land use report or certificates, re-zoning applications).

Note A6. **Structural Engineer – Buildings:** Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: All technical resources shall have verifiable postgraduate experience in the field of structural engineering related to building structures. Capabilities may include analysis, design, documentation and construction monitoring of structures utilizing steel, concrete, timber and other structural materials in adherence to the national building regulations. Types of buildings include high-rise, basements, hospitals, warehouses, utilities buildings and all other buildings utilised in the municipal context, civil structures and retaining walls included. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr.Tech Eng) registered with the Engineering Council of South Africa (ECSA) capable of acting as the Approved Competent Person in terms of regulation A19 of the National Building Regulations and Building Standards Act, 1977. Note A63.

Note A7. **Structural Engineer – Façade Specialist:** The required personnel must be a registered Professional Engineer or Engineering Technologist (Pr. Eng or Pr. Tech Eng) with the Engineering Council of South Africa (ECSA), with a post graduate qualification and at least 8 (eight) years verifiable postgraduate experience in the design and construction of complex building facades.

Note A8. **Forensic Engineer:** The required personnel must be a registered Professional Engineer or Engineering Technologist (Pr. Eng or Pr.Tech Eng) with the Engineering Council of South Africa (ECSA), with a National Certificate: Forensic Engineering Investigation and at least 8 (eight) years verifiable postgraduate experience in the field of forensic engineering with expertise related to legal subjects, relating to principles and procedures of the investigation and reconstruction of incidents; a specialised field of engineering; the ability to accurately reconstruct incidents/accidents for litigation, insurance and preventative purposes.

Note A9. **BIM Manager:** The required personnel must have a construction related qualification, BIM certification (similar to Autodesk Certified Expert) with at least 8 (eight) years verifiable postgraduate experience in Build Information Systems modelling and management using Autodesk Revit, Civil 3D and other similar BIM packages. Competencies as per the requirements for BIM Modeller expanded to include 4D construction rehearsals, 3D logistics plans, temporary works, visual method statements, processing point cloud data, creation of Employers Information Requirements (EIRs), creation BIM Execution Plans (BEPs), capture and integration of asset data, set up and maintenance of the Common Data Environment.

Note A10. **BIM Modeller:** The required personnel must be a certified BIM practitioner (similar or equal to Autodesk Certified Professional) with at least 3 (three) years verifiable experience in BIM modelling (Autodesk Revit, Civil 3D, or similar) relevant to the specific technical field (e.g. Architecture, Structural-, Civil-, Mechanical-, Electrical-, Piping Engineering).

Note A11. **CAD Technician:** The required personnel must be a certified CAD practitioner (similar or equal to Autodesk Certified Professional) with at least 3 (three) years verifiable experience in CAD draughting relevant to the specific technical field (e.g. Architecture, Structural Engineering, Civil Engineering).

Note A12. **GIS Technician:** The required personnel must have an appropriate 3-year Bachelor's Degree/Diploma in Geography/Environmental Sciences/Cartography or an appropriate equivalent qualification with GIS or Information Management as a major subject and be registered with SAGC. Three (3) years' experience and knowledge in ArcView, ArcGIS, geographical information systems (GIS), Geo-database implementation and data management.

Note A13. **Document Control / Support / Assistant:** The required personnel shall be capable in performing non-technical roles in assistance of the technical staff with at least 2 (two) years verifiable industry experience.

Note A14. **Public Participation Practitioner (Lead):** The required personnel will be required to assist with Environmental Impact Assessments and must have at least 5 (five) years' experience in similar activities.

Note A15. **Heritage Assessment Practitioner:** The required personnel must have a postgraduate qualification in a heritage related field and at least 5 (five) years verifiable appropriate experience in heritage management issues likely to be encountered in all works similar to those listed in Typical Work Orders lists.

Note A16. **Mechanical Engineer – HVAC:** Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Mechanical Engineer and have verifiable postgraduate experience in the field of heating, ventilation and air conditioning (HVAC). Capabilities may include analysis, design, documentation and construction monitoring of HVAC or refrigeration systems. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr. Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note A17. **Vertical Transportation Specialist:** The required personnel must be a professionally registered Mechanical Engineer (Pr. Eng or Pr. Tech Eng) or other proven equivalent registration) with at least 8 (eight) years verifiable postgraduate experience in the field of vertical transportation. Capabilities may include analysis, design, documentation and installation and commissioning monitoring of elevators, escalators, goods lifts, funiculars as well as movement modelling and simulation.

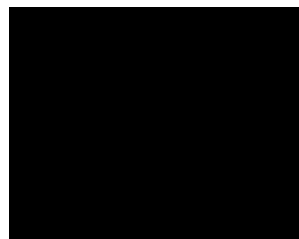
Note A18. **Lift Inspectors / Lift Machinery Inspectors** The required personnel must be a professionally registered as Lift Inspectors / Lift Machinery Inspectors with the Engineering Council of South Africa with at least 5 (five) years verifiable postgraduate experience in the field of lift inspections.

Note A19. **Electrical Engineer – Building Services:** Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the field of building services. Capabilities may include analysis, design, documentation and construction monitoring and preventative maintenance of building services, which include, building reticulation, wiring of premises, cable management, stand-by generators, street and area lighting, load calculation and modelling, SELV and PELV systems, hospital reticulation, stand-by generators, UPS systems, building management services, CCTV, security and fire systems. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note A20. **Mechanical Engineer - Fire Protection** Categorisation shall be defined as per Note A1 with the following specific requirements:



Categories A, B, C, D: The technical resource shall be a qualified Mechanical Engineer and have verifiable postgraduate experience in the field of Fire Suppression and Protection. Capabilities may include analysis, design, documentation and construction monitoring of wet & dry suppression systems, smoke extraction and other systems related to fire suppression and smoke control. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr.Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note A21. Electrical Engineer - Fire Detection & Alarm Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the field of Fire Detection and Alarm System. Capabilities may include analysis, design, documentation and construction monitoring of fire detection, fire alarm, control systems, emergency lighting and other related systems. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note A22. Fire Protection Systems Inspector: The required personnel must be a Registered Fire Protection Systems Inspector with the Engineering Council of South Africa (ECSA), with at least 5 (five) years verifiable postgraduate experience in the field of which at least 3 (three) years' experience in the fire industry with installation, commissioning and maintenance of fire protection systems, and at least a further 2 (two) years' experience in a position of responsibility in fire protection system inspection.

Note A23. Civil Engineer - Roads: Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Civil Engineer and have verifiable postgraduate experience in the field of Roads Engineering. Capabilities may include road geometric design, highways planning, vertical and horizontal alignment, road drainage, footpaths and cycle ways, road markings and signage and other related activities. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note A24. Wet Services Engineer: Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Mechanical Engineer or Civil Engineer and have verifiable postgraduate experience in the field of water supply and drainage for buildings. Capabilities may include analysis, design, documentation and construction monitoring of hot and cold water reticulation, sewer drainage, and other related systems for buildings. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note A25. Civil Engineer – Drainage Systems: Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Civil Engineer and have verifiable postgraduate experience in the field of stormwater and sewer drainage systems. Capabilities may include analysis, design, documentation and construction monitoring of sewer reticulation systems, pump stations, pressure systems, stormwater gravity networks, open channel drainage, attenuation and other related systems. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note A26. **Quantity Surveyor** Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Quantity Surveyor and have verifiable postgraduate experience in the field of quantity surveying and contract management. Capabilities may include cost estimation and reporting, preparation of contract documents, bill of quantities, payment certification, measurement of works, contract administration and other related activities. Extent of the experience required as per Note A1.

Categories A, B & C - The required personnel must be a Professional Quantity Surveyor (Pr.QS) registered with The SA Council for the Quantity Surveying Profession (SACQSP).

Note A27. **Construction Contract Specialist** The required personnel must either be:

- (i) a registered Professional Engineer (Pr.Eng) or Engineering Technologist (Pr.TechEng) or Professional Quantity Surveyor (Pr.QS) or similar equivalent qualification with a postgraduate qualification in construction law and at least 10 (ten) years verifiable postgraduate experience in the field of construction law including drafting of contracts (GCC, FIDIC, NEC, JBCC), claims, disputes, arbitration, litigation and specialist advice.
- (ii) An Attorney specialising in construction law with at least 10 (ten) years verifiable postgraduate experience in the field of construction law including drafting of contracts (GCC, FIDIC, NEC, JBCC), claims, disputes, arbitration, litigation and specialist advice.

Note A28. **Project Manager:** Categorisation shall be defined as per Note A1 with the following specific requirements:

Categories A, B & C: The required personnel must be a professionally registered (Pr.CPM with the South African Council for the Project and Construction Management Professions -SACPCMP) with verifiable postgraduate experience in project management.

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 A29. **Resident Engineer / Principal Agent:** The required personnel must be a registered Professional Engineer or Engineering Technologist (Pr. Eng or Pr Tech Eng) with the Engineering Council of South Africa (ECSA), or a Professional Quantity Surveyor (Pr.QS) registered with The SA Council for the Quantity Surveying Profession (SACQSP) with at least 10 (ten) years verifiable postgraduate experience in full time site construction monitoring, contract administration, quality control systems, regulatory approvals, commissioning & close-out procedures. The required personnel must be registered with the South African Council for the Project and Construction Management Professions (SACPCMP).

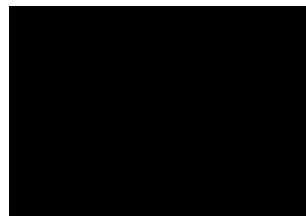
Note A30. **Professional Construction Health and Safety Agent:** must be a professionally registered Construction Health and Safety Agent (PrCHSA).

Note A31. **Construction Health and Safety Manager:** must be a registered Construction Health and Safety Manager (PrCHSM).

Note A32. **Construction Health and Safety Officer:** must be a registered Construction Health and Safety Officer (CHSO).

Note A33 Infrastructure Asset Management - Planning, investigation, advisory services and training of the following:

1. Assessment of Infrastructure Asset Management maturity within areas will have to be done to establish the current state of Infrastructure Asset Management maturity and to compile an improvement strategy and master plan.
2. An improvement plan will have to be driven by a Steering Committee and Technical Committee consisting of top management staff and senior staff of the supplier. Progress meetings will review compliance against the deliverables as well as the implementation of the Asset



Management Project plan.

3. The plan should consist of a scalable Asset Management Support System which provides operational support to execute daily work as well as specific identified improvement projects.
4. Coaching and training of City of Cape Town staff in reliability engineering is required resulting in documented transfer of skills.
5. The system must enable the City to forecast and manage operational and maintenance activities.
6. The Infrastructure Reliability Engineering must utilise the City of Cape Town's SAP ERP system. Primarily the Plant Maintenance module will be used, although other modules and tools will also be utilised.
7. Additional consulting services on an ad-hoc basis.

The support of an experienced Infrastructure Asset Management partner is required. This is necessitated due to the current shortage of staff and skills to effectively ensure the optimisation of Infrastructural Asset Management. This Infrastructure Asset Management partner will help by introducing, driving and managing best practices in the area of Infrastructure Asset Management and in so doing assist with the move towards a pro-active approach by introducing "best practice" Infrastructure Asset Management aligned to ISO55000 principles, as well as assisting with the development of City of Cape Town staff skills through training and coaching and optimising the use of SAP for Infrastructure Asset Management improvement.

The service must enable The City of Cape Town to forecast and manage operational and maintenance activities considering:

1. Financial expenditure, forecast and budgeting
2. Available skills and competencies
3. Material requirements planning
4. Total cost of asset ownership
5. Asset depreciation and expected life within the relevant bills and acts
6. Asset identification and condition assessment on an ongoing basis
7. Life-cycle costing principles
8. Work planning, scheduling and control
9. Contractor management
10. Project management
11. Development and maintenance of Asset management Key Performance Indicators (KPIs)
12. Cost analysis
13. Business process mapping and maintenance

The implementation of the system must include:

1. Applicable Training at the appropriate levels of the organization
2. A supervised change management program
3. Reference to tried and tested methodologies
4. Ability to transform high level intent into day to day operational activities to drive asset management improvement.
5. Suitably qualified and experienced guidance at strategic, tactical and operational levels
6. Regular Asset Management assessments to measure improvement / regression against a tried and tested methodology
7. Asset Refurbishment plan compilation
8. Critical Asset Identification
9. Maintenance tactic development, review and implementation
10. SAP PM optimization, advice and support
11. Asset Management system alignment to PAS 55 / ISO55000
12. Where areas of excellence exist in the directorate these areas must be supported by Asset Management systems and processes. In areas where skills shortages exist the successful supplier will provide the requisite level of staff to achieve the desired state.

Core deliverables include, but is not limited, to the following:

1. Asset Management Policy development, implementation and communication
2. Asset Management Strategy development, implementation and communication
3. Establishment of current Asset management maturity in line with proven international methodology.

4. Development, implementation and periodic review of development plan to improve Asset Management.
5. Development, implementation and periodic review of set of best practice Asset Management key performance indicators
6. Compilation and communication of reporting across Strategic, tactical and operational elements
7. Updating of SAP PM system with regards to static and dynamic Asset Management related data
8. Creation of best practice business processes to support effective Asset Management
9. Implementation of a PAS55 / ISO55000 aligned asset management system
10. Performance of whole life and life cycle cost analysis and recommendations
11. Create root cause analysis business processes, supported by the SAP system, to drive improvement activities.
12. Understanding of Asset Management within a South African municipal environment
13. Asset Register management and compliance to the applicable financial standards relevant to Local Authorities at the time of tender
14. Driving of Maintenance Tactic development
15. Ensuring standards are defined and implemented
16. Provision of training resources to provide key Asset Management training
17. The monitoring of contractor performance, specification compliance, time lines, safety, material and value for money
18. Creating, Planning, scheduling, monitoring, and confirming maintenance activities in SAP PM

Requirements:

1. Provide day to day support in the creation, planning, scheduling, monitoring and confirmation of maintenance and project related activities
2. Data capturing
3. Maintenance schedule compilation and communication
4. Follow up work creation
5. Asset Register management
6. Daily, weekly, monthly, yearly report creation and communication
7. Assessment of maintenance tactic completion
8. Improved project identification, documentation and execution
9. Asset Management documentation control
10. Feedback analysis on work performed
11. Root cause analysis session identification, facilitation and close-out

The successful Supplier must furthermore provide training on various subjects to successfully establish and maintain an Asset management system as per the ISO55000 standard.

In terms of ISO55000 standard, the following system topics must be addressed

1. Leadership
2. Planning
3. Support
4. Operation
5. Performance evaluation
6. Improvement

Training in the following relevant asset management subject areas must also be provided

1. fundamentals of asset management
2. maintenance planning and scheduling
3. root cause failure analysis
4. life cycle costing;
5. equipment management;
6. energy management

Resource Experience and qualification requirements

Chief Advisory Consultant: B Degree in Commerce / Business Management / Engineering, with at least 10 years relevant experience

Senior Advisory Consultant: B Degree in Commerce / Business Management / Engineering, with atleast 8 years relevant experience

Advisory Consultant: B Degree in Commerce / Business Management / Engineering, with atleast 5 years relevant experience

Senior Analyst: B Degree in Commerce / Business Management / Engineering, with atleast 8 years relevant experience

Analyst: B Degree in Commerce / Business Management / Engineering, with atleast 3 years relevant experience

Note A34 Construction works dispute facilitators:

Minimum Qualification Requirements for Entry onto the SAICE President's List of Adjudicators Applicants should:

(i) have worked as Project Manager, Contract Manager, Engineer, Principal Agent or equivalent on engineering construction projects for a period of at least 10 years for **Senior Arbitrator / Adjudicator/ Mediator / Amicable settlement facilitator** and between 5 and 10 years for **Arbitrator / Adjudicator/ Mediator / Amicable settlement facilitator**, preferably within the past 5 years, with appropriate disputes experience;

(ii) be registered as a Professional Engineer or equivalent or at least 10 years standing

(iii) have detailed working knowledge of at least one, and preferably more, of the standard forms of contract recommended by the CIDB, in particular the General Conditions of Contract published by SAICE (including the adjudication provisions);

(iii) have working knowledge of international and local practice, legislation and institutional guidelines on adjudication, including CIDB guidelines;

Note A35 Safety & Security risk assessor

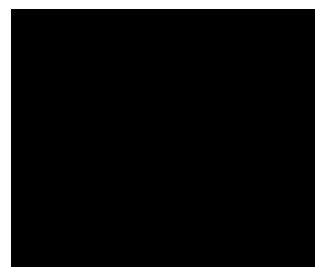
- **Environment Scanning**

- **Definition:** Environmental scanning is the process of gathering information about events and their relationships within an organization's internal and external environments. The basic purpose of environmental scanning is to help management determine the future direction of the organization/project/site.
- **Components of and Environmental Scan:**
 - A typical PESTLE analysis that studies the key external factors – (Political, Economic, Sociological, Technological, Legal and environmental);
 - A SWOT analysis (strengths, weaknesses, opportunities and threats). A SWOT analysis is a quick and relatively easy way of examining processes by reviewing the individual components of the SWOT analysis. Compiling this information together centrally enables a view of the macro picture that is dynamically interfaced with the micro (e.g. the Site) and act as a decision-making aid to formulate effective, agile and precise response strategies.

Note: This process is 'live' and will need to be conducted repeatedly to assist planning, resource allocation, real time input to the risk matrix heat map, strategic/operational/tactical risk identification, assessment and mitigation (this is tailored to each scenario).

- **Strengths** are – what are the organization/site advantages? What processes are working well?
- **Weaknesses** – what can be improved? What was done poorly? What should be avoided? What didn't work?
- **Opportunities** - what has been learned from case studies/benchmarks/previous similar projects/sites? Are there realistic, measurable and achievable ways to improve on such? what can be done differently in future?
- **Threats** – what are the barriers in responding to an event more efficiently the next time? What obstacles are being faced? How are roles or responsibilities being changed as a result of the incident/event? what are things that needed to be done in preparation for the next time?
- **Note:** carrying out this analysis will be illuminating both in terms of what needs to be done and in putting problems in perspective.
- **The Strategic Advantages** are the aspects of the organization that are being done well and facilitate success. There are likely needed to be maintained to build on or be used as leverage. These are *directly* related to the identified strengths from the SWOT analysis.

- The **Strategic challenges** are the aspects of the organization/project/site that may need to be improved on or overcome. They are also things that need to receive priority. They are directly related to identified weaknesses and threats from the SWOT analysis.
- **Definition of area of interest and area of responsibility**
 - **Area of Interest:** This is the term that describes all factors beyond regular organizational/project/site parameters (geographical as a baseline) that will likely impact on the successful execution of mandated allocated responsibilities/processes/plans/strategies outside of the perimeter of the area of responsibility. The risk heat map should reflect these aspects based on continuous landscape analytics (mass data, environmental data, third party data, internal data and regulatory requirements). Importantly this area is outside of regular hierarchical boundaries and interacts dynamically with the area of responsibility. Risk/threat controls are however limited to the factors which can be identified, quantified and accordingly managed.
 - **Area of Responsibility:** This is a term applicable primarily to a pre-defined geographical location/site to the mandated relevant organizational/site authorities that are used to define an area with specific boundaries where they have authority to plan and conduct work/site operations; for which resources, or component management bears a certain responsibility. This system is designed to allow a single command and control structure over all functions/operations. The size and type of these resources are scalable to the scope, nature and duration of the initiative.
 - **Area of Operations:** these are area or components that command and control (risk managers) define as their areas of site/tactical operability. It is also known as close control space. The upper hierarchical risk structures focus on establishing a command and control in this area which encompasses *all* aspects of the development and functioning of the secure site in order to provide direct support to all allocated resources.
- **Profile of relevant risk/security executive**
 - Relevant PSIRA registration and compliance with accurate naming alignment conventions as prescribed by the regulatory authority;
 - Minimum 10 years' experience in the security cluster (Government) particularly in the security/risk management or counter-intelligence spheres;
 - NQF level 7 qualification in Public and Development Management – Security (PDMS);
 - Relevant qualifications and experience in conducting all aspects of the risk and intelligence cycle in direct support of all the functional levels (strategic, operational and tactical);
 - Relevant certifications such as Certified Fraud Examination (CFE);
 - NQF level qualification 6/7 in Project Management;
 - The ability to collect, collate and interpret multiple data sources content to sustain a continuous alignment of tools such as heat maps in conjunction with risk matrixes;
 - The ability to apply relevant regulatory controls across the risk landscape;
 - Experience in advising and directing all security related (offensive and defensive) operations and measures on an enterprise-wide and/or site level;
 - Strong leadership skills to manage allocated resources;
 - Experience in formulating relevant policies, procedures and protocols;
 - The ability to conduct regular site risk assessments, updating the mitigation measures, measuring their impact and repeating the cycle in accordance with an agreed site-specific frequency.



C3.2.21 AP2 - CIVIL INFRASTRUCTURE, MECHANICAL& ELECTRICAL ENGINEERING SERVICES – SPECIFIC SCOPE

This section applies to Award Package No. 2 – **Civil Infrastructure, Mechanical & Electrical Services** only.

C3.2.21.1 General

The *Supplier* is required to provide the professional services by the utilization of personnel as required in section C3.2.21.2 for Work Order contracts related to the following typical Projects. The typical Projects listed below are not exhaustive and Work Orders briefs may include any Project that are within the capabilities of the personnel listed in C3.2.21.2.

Feasibility studies, planning, advisory services, design, project management, cost consulting, construction monitoring, commissioning and operational advisory services for the following types of projects:

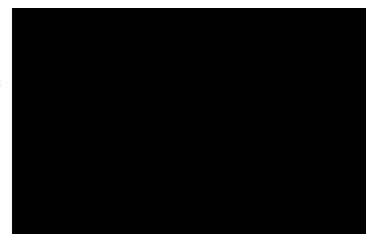
- Civil Infrastructure (Roads, Bridges and Culverts)
- Storm water Infrastructure
- Sewer and Water Infrastructure
- Electrical Engineering Infrastructure
- Water infrastructure projects that may include dams, pump stations, pipelines and associated infrastructure.
- Utilities Buildings such as pump stations and sub-stations.
- Water resources and bulk supply
- Water and irrigation reticulation and pump systems
- Roads and Paving projects
- Traffic and transportation projects
- Municipal civil infrastructure
- High voltage electrical supply and reticulation
- Medium and low voltage systems
- Alternative energy projects
- Mechanical plant installations and upgrades
- Waste management projects that may include collection, disposal or reuse facilities.
- Bulk housing schemes infrastructure.

Investigation Services as follows:

- Geotechnical investigations scoping
- Topographical and land surveys scoping
- Traffic Impact Assessments
- Forensic engineering investigations and expert witness services
- Dam safety inspections and investigations.
- Forensic engineering investigations and expert witness services
- Technical assessments

Provide input and advisory services related to internal City of Cape Town initiatives, including but not limited to:

- Technical, contractual and cost-related advice.
- Building Information Modelling implementation
- Smart City initiatives
- Contract improvements
- Development of guidelines and specifications
- Maturity Assessments
- Technical, contractual and cost-related advice.
- Building Information Modelling implementation
- Smart City initiatives
- Contract improvements
- Development of guidelines and specifications
- Maturity Assessments



C3.2.21.2 Personnel requirements

The requirements of the various personnel are contained in the notes provided in this section. The *Supplier* must be able to provide the services of personnel for Work Order contracts to the full extent listed in this section.

The following Notes (Note B1 to B37) are applicable to Civil Infrastructure / Environmental Services:

Note B1. General Note: The following note shall be applicable to all personnel and should be read in conjunction with specific requirements contained in Notes B2 to B37, if applicable.

Category A: The required personnel must be professionally registered with at least **20 (twenty) years** verifiable postgraduate experience in their specific field whose expertise and relevant experience is nationally or internationally recognized and who provides advice at a level of specialization where such advice is recognized as that of an expert.

Category B: The required personnel must be a professionally registered with at least **10 (ten) years** verifiable postgraduate experience in their specific field who, jointly or severally with other partners, co-directors or co-members, 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 proven 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 with at least **5 (five) years** verifiable postgraduate experience in their specific field and with adequate expertise performing work of a technical nature and who carry the direct technical responsibility for one or more specific activities related to a project.

Category D: All other salaried technical staff with adequate expertise and relevant experience performing work of a technical nature with direction and control provided by any person contemplated in categories A, B or C. Need not be professionally registered and can be an Architect, Engineer, Scientist, Technologist or Technician (as applicable).

Note B2. Structural Engineer – Bridges: Categorisation shall be defined as per Note B1 with the following specific requirements:

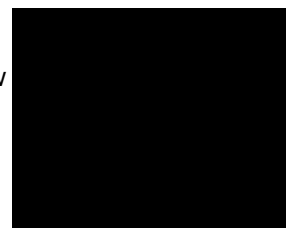
Categories A, B, C, D: All technical resources shall have verifiable postgraduate experience in the field of structural engineering related to bridges. Capabilities may include analysis, design, documentation and construction monitoring of bridge structures and foundations including steel, reinforced concrete, post-tensioned and prefabricated elements in bridges and culverts. Extent of the experience required as per Note B1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr.Tech Eng) registered with the Engineering Council of South Africa (ECSA) and Committee of Transport Officials (COTO) Certified Bridge Inspector.

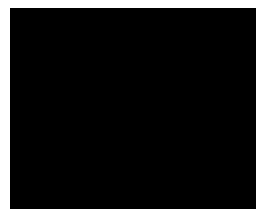
Note B3. BIM Manager: The required personnel must have a construction related qualification, BIM certification (similar to Autodesk Certified Expert) with at least 8 (eight) years verifiable postgraduate experience in Build Information Systems modelling and management using Autodesk Revit, Civil 3D and other similar BIM packages. Competencies as per the requirements for BIM Modeller expanded to include 4D construction rehearsals, 3D logistics plans, temporary works, visual method statements, processing point cloud data, creation of Employers Information Requirements (EIRs), creation BIM Execution Plans (BEPs), capture and integration of asset data, set up and maintenance of the Common Data Environment.

Note B4. BIM Modeller: The required personnel must be a certified BIM practitioner (similar or equal to Autodesk Certified Professional) with at least 3 (three) years verifiable experience in BIM modelling (Autodesk Revit, Civil 3D, or similar) relevant to the specific technical field (e.g. Architecture, Structural-, Civil-, Mechanical-, Electrical-, Piping Engineering).

Note B5. CAD Technician: The required personnel must be a certified CAD practitioner (similar or equal to Autodesk Certified Professional) with at least 3 (three) years verifiable experience in CAD draughting relevant to the specific technical field (e.g. Architecture, Structural Engineering, Civil Engineering).



- Note B6. **GIS Technician:** The required personnel must have an appropriate 3-year Bachelor's Degree/Diploma in Geography/Environmental Sciences/Cartography or an appropriate equivalent qualification with GIS or Information Management as a major subject and be registered with SAGC. Three (3) years' experience and knowledge in ArcView, ArcGIS, geographical information systems (GIS), Geo-database implementation and data management.
- Note B7. **Document Control / Support / Assistant:** The required personnel shall be capable in performing non-technical roles in assistance of the technical staff with at least 2 (two) years verifiable industry experience.
- Note B8. **Environmental Engineer** Categorisation shall be defined as per Note B1 with the following specific requirements:
- Categories A, B, C, D: All technical resources shall have verifiable postgraduate experience in the field of environmental engineering. Extent of the experience required as per Note B1.
- Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr. Tech Eng) registered with the Engineering Council of South Africa (ECSA).
- Note B9. **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 Environmental Assessment Practitioner (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 Work Orders 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 Work Orders list.
- Note B10. **Environmental Auditor:** The required personnel must have an environmental auditing qualification and at least 5 (five) years' experience as a lead environmental auditor.
- Note B11. **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 Work Orders lists.
- Note B12. **Public Participation Practitioner (Lead):** The required personnel will be required to assist with Environmental Impact Assessments and must have at least 5 (five) years' experience in similar activities.
- Note B13. **Heritage Assessment Practitioner:** The required personnel must have a postgraduate qualification in a heritage related field and at least 5 (five) years verifiable appropriate experience in heritage management issues likely to be encountered in all works similar to those listed in Typical Work Orders lists.
- Note B14. **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.
- Note B15. **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 B16. **Coastal Engineer:** Categorisation shall be defined as per Note B1 with the following specific requirements:
- Categories A, B, C, D: All technical resources shall have verifiable postgraduate experience in the field of marine and coastal engineering. Extent of the experience required as per Note B1.



Categories A, B & C - The required personnel must be a professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) or other proven equivalent registration holding a degree in Civil Engineering with relevant post graduate qualification in Coastal or marine Engineering (minimum NQF level 9).

Note B17. **Coastal Modelling Specialist** The required personnel must be a registered professional with a recognized body and be specialized in wave modelling, near and far field dispersion modelling and hydrodynamic modelling with a minimum of 5 (five) years relevant experience in this modelling field.

Note B18. **Solid Waste Engineer:** The required personnel must be a registered professional Environmental Engineer, Civil Engineer, Mechanical Engineer or Civil Engineering Technologist (Pr. Eng or Pr. Tech Eng) or other proven equivalent registration), with at least 8 (eight) years verifiable postgraduate experience in Solid Waste Management involved in projects pertaining to landfill design (basal and capping), expansion, waste management licence applications and compliance, landfill gas extraction and waste to energy plant, transfer stations, recycling and waste diversion programs.

Note B19. **Wastewater Process Design Engineer** The required personnel must be a registered professional Civil or Chemical Engineer (Pr. Eng) or professional Civil or Chemical Engineer Technologist (Pr. Tech Eng) or other proven equivalent registration and have experience in the analyses and design of Wastewater Treatment Plants, a Postgraduate qualification in Wastewater Treatment with a minimum of 8 (eight) years verifiable experience in the analyses and design of Wastewater Treatment Plants.

Note B20. **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 B21. **Cathodic Protection Specialist:** The required personnel must be a certified NACE CP4 Specialist or Metallurgy Engineering (Pr. Eng or other proven equivalent registration) who has at least 10 (ten) years verifiable postgraduate experience in the analysis and design of cathodic protection systems for steel pipelines.

Note B22. **Transportation Planning Specialist** The required personnel must be a registered Professional Engineer or Engineering Technologist (Pr. Eng or Pr Tech Eng) with the Engineering Council of South Africa (ECSA), with a postgraduate qualification and at least 8 (eight)) years verifiable postgraduate experience in the field of transportation planning.

Note B23. **Traffic Engineer:** Categorisation shall be defined as per Note B1 with the following specific requirements:

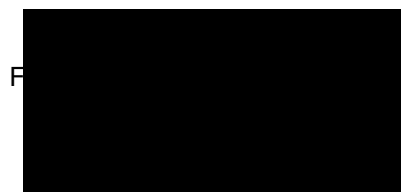
Categories A, B, C, D: The technical resource shall be a qualified Civil Engineer and have verifiable postgraduate experience in the field of Traffic Engineering. Capabilities may include traffic impact studies, traffic flow analysis and simulation, traffic accommodation for temporary works, junction design, regulatory compliance. Extent of the experience required as per Note B1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note B24. **Civil Engineer - Roads:** Categorisation shall be defined as per Note B1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Civil Engineer and have verifiable postgraduate experience in the field of Roads Engineering. Capabilities may include road geometric design, highways planning, vertical and horizontal alignment, road drainage, footpaths and cycle ways, road markings and signage and other related activities. Extent of the experience required as per Note B1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA)



Note B25. **Civil Engineer - Pavements:** Categorisation shall be defined as per Note B1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Civil Engineer and have verifiable postgraduate experience in the field of Pavement Engineering. Capabilities may include pavement design, pavement rehabilitation and maintenance, advanced pavement technologies and other related activities. Extent of the experience required as per Note B1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr.Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note B26. **Geotechnical Engineer – Pavement Specialist:** The required personnel must be a registered Professional Engineer or Engineering Technologist (Pr. Eng or Pr Tech Eng) with the Engineering Council of South Africa (ECSA), with a postgraduate qualification and at least 8 (eight) years verifiable postgraduate experience in the field of geotechnical engineering related to pavement and roads projects which may include subsurface investigations (Centreline), include quarry investigations and material usage investigations.

Note B27. **Hydraulic Engineer – Bulk Supply & Reticulation:** Categorisation shall be defined as per Note B1 with the following specific requirements:

Categories A, B, C: The required personnel must be a Professional Engineer (**Pr. Eng**) or professional Engineering Technologist (**Pr. Tech Eng**) registered with the Engineering Council of South Africa (ECSA). The required personnel shall have verifiable postgraduate experience in pump and pressure pipe line systems. Capabilities may include analysis, design, documentation and construction monitoring of pressure pipe lines, surge analysis, pump stations, water supply systems, irrigation bulk supply or foul pumped mains.

Category A: In addition to the above requirements, the required personnel must have 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) large diameter (diameter > 1 m) pipeline projects.

Category D: Need not be professionally registered and can be an Engineer or Technologist involved in pipeline projects.

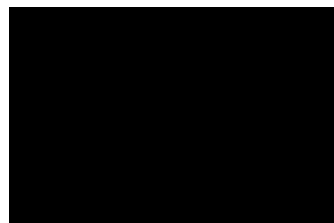
Note B28. **Civil Engineer – Water Resources:** Categorisation shall be defined as per Note B1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Civil Engineer and have verifiable postgraduate experience in the field of Dam Engineering. Capabilities may include hydrological design of dam features, assured yield, inlet and spillway structures, regulatory requirements, water use authorisations and other related activities. Extent of the experience required as per Note B1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA) as an Approved Professional Person (APP) in terms of the National Water Act, 36 of 1998 and Regulations Regarding the Safety of Dams in Terms of Section 123(1) of the National Water Act, 36 of 1998.

Note B29. **Hydrologist:** The required personnel must be a professionally registered hydrologist or professionally registered Civil Engineer or Civil Engineering Technologist (PrSciNat or Pr. Eng or Pr Tech Eng or other proven equivalent registration) with at least 8 (eight) years verifiable postgraduate experience in the water resource field, specifically focussed on large catchment hydrological modelling, system modelling and stream flow assessments or storm hydrology, specifically focussed on small and medium-sized catchment storm hydrology modelling, drainage and river system modelling, and stream flow assessments.

Note B30. **Water Treatment Process Design Engineer:** The required personnel must be a registered professional Civil or Chemical Engineer (Pr. Eng) or professional Civil or Chemical Engineering Technologist (Pr Tech Eng) or other proven equivalent registration, who has experience in the analyses and design of Water Treatment Plants (10Mℓ/day or larger), **and** have a Postgraduate qualification in Water Treatment with a minimum of 8 (eight) years verifiable experience in the analyses and design of Water Treatment Plants.



Note B31. **Civil Engineer – Drainage Systems:** Categorisation shall be defined as per Note B1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Civil Engineer and have verifiable postgraduate experience in the field of stormwater and sewer drainage systems. Capabilities may include analysis, design, documentation and construction monitoring of sewer reticulation systems, pump stations, pressure systems, stormwater gravity networks, open channel drainage, attenuation and other related systems. Extent of the experience required as per Note B1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note B32. **Project Manager:** Categorisation shall be defined as per Note B1 with the following specific requirements:

Categories A, B & C: The required personnel must be a professionally registered (Pr.CPM with the South African Council for the Project and Construction Management Professions -SACPCMP) with verifiable postgraduate experience in project management.

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 B33. **Resident Engineer / Principal Agent:** The required personnel must be a registered Professional Engineer or Engineering Technologist (Pr. Eng or Pr Tech Eng) with the Engineering Council of South Africa (ECSA), or a Professional Quantity Surveyor (Pr.QS) registered with The SA Council for the Quantity Surveying Profession (SACQSP) with at least 10 (ten) years verifiable postgraduate experience in full time site construction monitoring, contract administration, quality control systems, regulatory approvals, commissioning & close-out procedures. The required personnel must be registered with the South African Council for the Project and Construction Management Professions (SACPCMP).

Note B34. **Professional Construction Health and Safety Agent:** must be a professionally registered Construction Health and Safety Agent (PrCHSA).

Note B35. **Construction Health and Safety Manager:** must be a registered Construction Health and Safety Manager (PrCHSM).

Note B36. **Construction Health and Safety Officer:** must be a registered Construction Health and Safety Officer (CHSO).

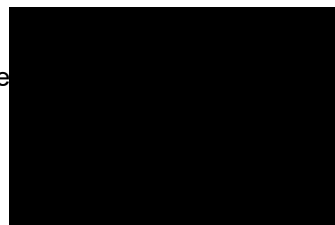
Note B37. **Mechanical Engineer – HVAC:** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Mechanical Engineer and have verifiable postgraduate experience in the field of heating, ventilation and air conditioning (HVAC). Capabilities may include analysis, design, documentation and construction monitoring of HVAC and refrigeration systems. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr. Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note B38. **Mechanical Engineer - Hydraulic Systems** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified engineer and have verifiable postgraduate experience in pump and pressure pipe line systems. Capabilities may include analysis, design, documentation and construction monitoring of pump stations, water supply systems, irrigation bulk supply, foul pumped mains. Extent of the experience required as per Note C1.



Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr.TechEng Tech Eng) registered with the Engineering Council of South Africa (ECSA)

Note C1. **Electrical Engineer - High and Medium Voltage Transmission** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the field of high and medium voltage electrical transmission. Capabilities may include analysis, design, documentation and construction monitoring and preventative maintenance of high and medium voltage transformers, medium and high-voltage cables, over-head transmission lines, switch gear, and other equipment. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr. Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C2. **Electrical Engineer - Renewable Energy** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the field of photovoltaics (PV) & alternative energy systems. Capabilities may include scoping studies, feasibility studies, technical due-diligence, analysis, design, documentation and construction monitoring and preventative maintenance of solar generation, battery storage, inverters, UPS, hydrogen technologies, wind generation, other alternative energy/ renewable energy systems, integration with main grid and associated legislation. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C3. **Electrical Engineer - MV & LV Distribution:** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the field of low & medium voltage electrical systems. Capabilities may include analysis, design, documentation and construction monitoring and preventative maintenance of low and medium voltage systems, power transformers, substations, switch-gear,, electrical distribution network studies, demand planning, metering systems, smart-grid systems and integration. Extent of the experience required as per Note C1.

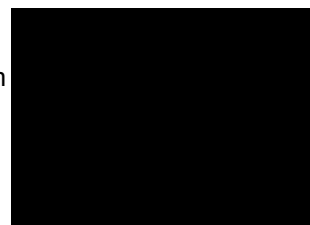
Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C4. **Electrical Engineer – Building Services:** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the field of building services. Capabilities may include analysis, design, documentation and construction monitoring and preventative maintenance of building services, which include, building reticulation, wiring of premises, cable management, stand-by generators, street and area lighting, load calculation and modelling, SELV and PELV systems, hospital reticulation, stand-by generators, UPS systems, building management services, CCTV, security and fire systems. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C5. **Electrical Engineer – Electrical Protection Engineer:** Categorisation shall be defined as per Note C1 with the following specific requirements:



Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the specialized field of electrical protection system. Capabilities may include analysis, design, documentation and construction monitoring and preventative maintenance of high, medium and low-voltage protection systems, network protection studies, protection grading, earthing, grounding, surge protection/ arrestors, relay settings and configuration. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C6. **Electrical Engineer - MV & LV Electro-Mechanical Machines Specialist:** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the specialist field of low & medium voltage electro-mechanical machines and control systems. Capabilities may include analysis, design, documentation and construction monitoring and preventative maintenance of low and medium voltage motors, generators, excitation systems, actuators, rotating machines, linear drives and supporting secondary plant. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr.Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C7. **Control & Instrumentation Engineer:** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electronic Engineer and have verifiable postgraduate experience in the field of Control Systems and Instrumentation. Capabilities may include analysis, design, documentation and installation monitoring and preventative maintenance of LV, HV and EHV electrical, electro-mechanical and mechanical control systems, including but not limited to SCADA, DCS, A/DMS, OMS systems. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C8. **Telecommunications Engineer** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electronic Engineer and have verifiable postgraduate experience in the field of Telecommunications Systems. Capabilities may include analysis, design, documentation and installation monitoring and preventative maintenance of the full range of Telecommunications systems and the control and management thereof, including but not limited to wireless telephony services, radio and satellite communications, internet and broadband technologies. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C9. **Security Engineer:** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall be a qualified Electrical Engineer and have verifiable postgraduate experience in the field of Security & Access Control systems. Capabilities may include analysis, design, documentation and construction monitoring of security and access control systems, which includes but is not limited to control systems, area based protection systems, video surveillance systems and automated smart control devices. Extent of the experience required as per Note C1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note C10. **Data Scientist:** The required personnel must be a qualified data scientist with 3 (three) years verifiable postgraduate experience in the application of machine learning, artificial intelligence, big data solutions.

Note C11. **Cybersecurity Specialist:** Categorisation shall be defined as per Note C1 with the following specific requirements:

Categories A, B, C: The technical resource shall be a qualified Electrical Engineer or Computer Scientist or Similar and have verifiable postgraduate experience and qualifications (i.e. CISSP, CISM or equivalent) in the field of Cybersecurity for IT and OT related environments.

Capabilities may include analysis, design, documentation and construction monitoring of IP based systems, including but not limited to software, hardware and management systems for both IT and OT environments.

Extent of the experience required as per Note C1.

C3.2.22 AP3 - GEOTECHNICAL AND SURVEY SERVICES – SPECIFIC SCOPE

This section applies to Award Package No. 3 - **Geotechnical and Survey Services** only.

General

The *Supplier* is required to provide the professional services by the utilization of personnel as required in section **Error! Reference source not found.** for Work Order contracts related to the following typical Projects. The typical Projects listed below are not exhaustive and Work Orders briefs may include any Project that are within the capabilities of the personnel listed in **Error! Reference source not found.**

Feasibility studies, planning, advisory services, design, project management, cost consulting, construction monitoring, commissioning and operational advisory services for the following types of projects:

- Geotechnical investigation works
- Foundations and foundation support projects
- Slope stability and rock fall protection
- Deep excavations and temporary works
- Hydrogeological works
- Dewatering projects
- Special projects (related to Award Package personnel capabilities)
- Contract and project peer reviews

Investigation Services as follows:

- Geotechnical investigations
- Topographical and land surveys
- Forensic engineering investigations and expert witness services

Provide input and advisory services related to internal City of Cape Town initiatives, including but not limited to:

- Technical, contractual and cost-related advice.
- Contract improvements
- Development of guidelines and specifications

Geotechnical Related works will be required for many projects that will necessitate input from experienced individuals in subsurface investigations and geotechnical design. The level of geotechnical investigation and design input will be stated in the Works Order Brief.

The *Supplier* shall, when called upon to do so by the *Client*, submit a fully motivated proposal for such subsurface investigation, either including or excluding geotechnical design, to the *Client* for approval.

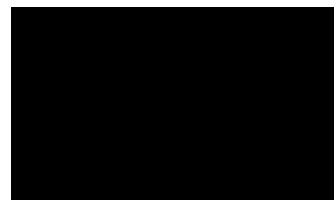
Geotechnical subsurface investigation will be undertaken in accordance to industry accepted standard as detailed in GFSH-2, the SAICE Site Investigation Code of Practice (SICoP) and/or Eurocode 7 Part 2 (EN1997-2) and recorded in terms of the relevant codes (all parts). The different codes addresses reporting in; Section 6 of EN1997-2, Section 3.4 of EN1997-1, Section 5.2 of SAICE SICoP and Section 5 of GFSH-2.

The Geotechnical Project/Structure will be classified into a Geotechnical Category in accordance to SANS10160-5 before and after the investigation (Considering factual account).

Geotechnical design shall be undertaken and recorded in a Geotechnical Design Report in accordance with Eurocode 7 Part 1 (EN1997-1) and other applicable design standards (SANS8006-1, SAICE Lateral Support in Surface Excavations Code of Practice, etc.). Designs shall be recorded in terms of Section 2.8 of EN1997-1.

Supervision of the subsurface investigation work shall only be undertaken by suitably qualified and experienced personnel. Dependant on the scope and/or scale of such subsurface investigation, supervision may be required on a full time or part time basis as determined by the *Client*.

The logging of the cores and profiling of test pits are the *Supplier's* responsibility. All core logging and test pit profiling are to be carried out, officially checked and signed by a suitably qualified and experienced Engineering Geologist (PrSciNat) as specified in Section 38 of the COTO Standards and Specifications for Subsurface Investigations (2010).



The *Supplier's* geotechnical engineer (Category agreed between *Client* and Supplier will depend on scope and complexity) shall be responsible for reviewing the results of the investigations and confirming its acceptance. The geotechnical engineer (Pr Eng) will be involved in the planning and meeting with the drilling sub-contractor on site prior to providing the proposal. The geotechnical engineer will be responsible for the acceptance of data collected during the investigation including amongst others, core logs, test pit profiles, laboratory test, etc. and the production of a factual geotechnical report. In addition, the geotechnical engineer will be responsible for an interpretive geotechnical report as well as a design geotechnical report required for fulfilling the design.

Cadastral surveys shall be undertaken by a registered Professional Land Surveyor. Works include topographic surveys, measured building surveys, compiling SG diagrams, flood line surveys, sectional title surveys & boundary surveys. All works carried shall be in accordance with the Geomatics Profession Act 19 Of 2013. Typical information provided in topographic survey drawings include:

- Site levels and contours. Spot levels should be provided at a maximum of 5m grid intervals and depending on the size and nature of the site be provided at closer intervals. Maximum contour interval should be 0.5m.
- 3D site ground model triangulated from the spot levels.
- Position, height, description and finished floor levels (FFL) for any existing buildings.
- Layout plus centreline and kerb levels of any existing internal roads / parking and public roads adjacent to the site. Extent to which the external roads need to be surveyed should be specified by the designer. Description of paving finish to be included.
- Position with cover and invert levels of visible and accessible storm water drainage inlets and sewer manholes on site and adjacent to site, extent of which is to be specified by the designer.
- Position of water, electricity and telecommunication infrastructure on site.
- Establishing survey benchmarks with XYZ-coordinates at suitable positions on site.
- Location and description of fire hydrants, street lights, transformers, distributions boards, feeder pillars, fences and other static equipment.
- Position and description of any other relevant prominent features on site.
- Estimated positions of underground services based on visual observations.
- Servitudes and access rights.
- Cadastral plot boundaries.

Operations for drone based surveys shall conform to the South African Civil Aviation Authority (SACAA) regulations and licencing requirements. Drone operators shall be fully licenced with all authorisation and permits obtained prior to commencement of works. Drones should be able to cover large areas where the aircraft is outside of the operator's line-of-sight and operator should be suitably licenced to carry out such operations. Outputs from aerial surveys should include 3D ground models compatible with Autodesk or similar software applications. Aerial photography and BIM model layers may also be required. Aerial survey data Z-values should be accurate to at least 6cm.

Personnel requirements

The requirements of the various personnel are contained in the notes provided in this section. The *Supplier* must be able to provide the services of personnel for Work Order contracts to the full extent listed in this section.

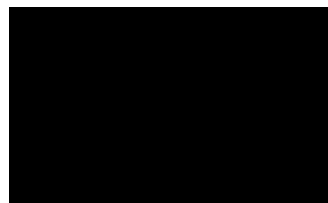
The following Notes (Note D1 to D18) are applicable to Built Environment Services:

Note D1.

General Note: The following note shall be applicable to all personnel and should be read in conjunction with specific requirements contained in Notes D2 to D18, if applicable.

Category A: The required personnel must be professionally registered with at least **20 (twenty) years** verifiable postgraduate experience in their specific field whose expertise and relevant experience is nationally or internationally recognized and who provides advice at a level of specialization where such advice is recognized as that of an expert.

Category B: The required personnel must be a professionally registered with at least **10 (ten) years** verifiable postgraduate experience in their specific field who, jointly or severally with other partners, co-directors or co-members, 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 proven 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 with at least **5 (five) years** verifiable postgraduate experience in their specific field and with adequate expertise performing work of a technical nature and who carry the direct technical responsibility for one or more specific activities related to a project.

Category D: All other salaried technical staff with adequate expertise and relevant experience performing work of a technical nature with direction and control provided by any person contemplated in categories A, B or C. Need not be professionally registered and can be an Architect, Engineer, Scientist, Technologist or Technician (as applicable).

Note D2. **Geotechnical Engineer:** Categorisation shall be defined as per Note D1 with the following specific requirements:

Categories A, B, C, D: The required personnel must be a professionally registered Civil Engineer or Civil Engineering Technologist (Pr. Eng or Pr.Tech Eng) with verifiable postgraduate experience in the field of geotechnical engineering (e.g. Design of - lateral support systems, piled foundations, ground improvement, geotechnical investigations, Geosynthetics, grouted anchors, soil-structure interaction, Finite Element analyses, embankment stabilisation) and must have a postgraduate qualification in the specialised field (NQF level 8 minimum). Category A must have as a minimum a Master's degree in Geotechnical (Civil) Engineering (NQF Level 9) It would be preferred if the personnel has sufficient experience in the Geological conditions of the City of Cape Town. Category D personnel are not required to be professionally registered.

Note D3. **Engineering Geologist:** Categorisation shall be defined as per Note D1 with the following specific requirements:

Category A, B, C, D: The required personnel must be professionally registered (PrSciNat) with verifiable postgraduate experience in the field of engineering geology. The required personnel must have at least a NQF level 8 (including an Honours degree) in engineering geology or similar earth science field of expertise. Category D personnel are not required to be professionally registered.

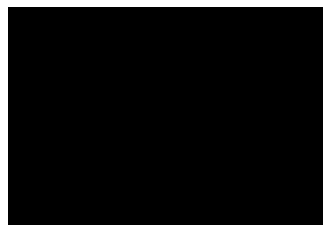
Note D4. **Geophysicist:** The required personnel must be professionally registered (PrSciNat) and have a Master's Degree in geophysics with at least 8 (eight) years verifiable postgraduate experience in the field of geophysics.

Note D5. **BIM Manager:** The required personnel must have a construction related qualification, BIM certification (similar to Autodesk Certified Expert) with at least 8 (eight) years verifiable postgraduate experience in Build Information Systems modelling and management using Autodesk Revit, Civil 3D and other similar BIM packages. Competencies as per the requirements for BIM Modeller expanded to include 4D construction rehearsals, 3D logistics plans, temporary works, visual method statements, processing point cloud data, creation of Employers Information Requirements (EIRs), creation BIM Execution Plans (BEPs), capture and integration of asset data, set up and maintenance of the Common Data Environment.

Note D6. **BIM Modeller:** The required personnel must be a certified BIM practitioner (similar or equal to Autodesk Certified Professional) with at least 3 (three) years verifiable experience in BIM modelling (Autodesk Revit, Civil 3D, or similar) relevant to the specific technical field (e.g. Architecture, Structural-, Civil-, Mechanical-, Electrical-, Piping Engineering).

Note D7. **CAD Technician:** The required personnel must be a certified CAD practitioner (similar or equal to Autodesk Certified Professional) with at least 3 (three) years verifiable experience in CAD draughting relevant to the specific technical field (e.g. Architecture, Structural Engineering, Civil Engineering).

Note D8. **GIS Technician:** The required personnel must have an appropriate 3-year Bachelor's Degree/Diploma in Geography/Environmental Sciences/Cartography or an appropriate equivalent qualification with GIS or Information Management as a major subject and be registered with SAGC. Three (3) years' experience and knowledge in ArcView, ArcGIS, geographical information systems (GIS), Geo-database implementation and data management.



Note D9. **Document Control / Support / Assistant:** The required personnel shall be capable in performing non-technical roles in assistance of the technical staff with at least 2 (two) years verifiable industry experience.

Note D10. **Groundwater Engineer** Categorisation shall be defined as per Note D1 with the following specific requirements:

Categories A, B, C, D: The technical resource shall have a Civil Engineering qualification and verifiable postgraduate experience in the field of groundwater engineering. Required capabilities include groundwater modelling, dewatering well system design, settlement ponds, installation and operation monitoring. Extent of the experience required as per Note D1.

Categories A, B & C - The required personnel must be a Professional Engineer (Pr. Eng) or professional Engineering Technologist (Pr Tech Eng) registered with the Engineering Council of South Africa (ECSA).

Note D11. **Geohydrologist:** Categorisation shall be defined as per Note D1 with the following specific requirements:

Category A: The required personnel must be professionally registered (PrSciNat), with verifiable postgraduate experience in groundwater management. The required personnel must have at least a Master's degree in a geohydrology or similar earth/water science field of expertise (NQF level 9). The Geohydrologist'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 geohydrological investigations, wellfield development and operations, and monitoring (including water quality).

Categories B & C - The required personnel must be professionally registered (PrSciNat or other proven equivalent registration) with verifiable postgraduate experience in groundwater management. The required personnel must have at least a NQF level 8 (including an Honours degree) in geohydrology or similar earth/water science field of expertise. The Geohydrologist must have extensive knowledge in geohydrological investigations, wellfield development and operations, and monitoring (including water quality).

Category D: The required personnel do not have to be registered and can be a Scientist, Technologist or Technician involved in groundwater investigations.

Note D12. **Groundwater Quality Specialist (Geochemist):** The required personnel must be professionally registered (PrSciNat) and have a BSc degree in chemistry, water sciences or equivalent with at least 8 (eight) years verifiable postgraduate experience in the field of groundwater studies.

Note D13. **Project Manager:** Categorisation shall be defined as per Note D1 with the following specific requirements:

Categories A, B & C: The required personnel must be a professionally registered (Pr.CPM with the South African Council for the Project and Construction Management Professions -SACPCMP) with verifiable postgraduate experience in project management.

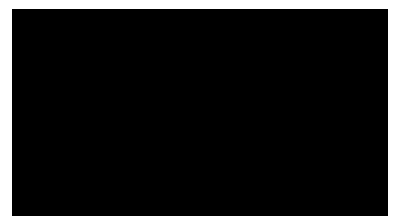
Category D: Need not be professionally registered and can be an Engineer, Technologist or Technician involved in project management of various types of works.

Note D14. **Land Surveyor:** Categorisation shall be defined as per Note D1 with the following specific requirements:

Categories C & D: The technical resource shall be a qualified Land Surveyor and have verifiable postgraduate experience in the field of cadastral and engineering surveys. Capabilities may include conducting topographic surveys, measured building surveys, compiling SG diagrams, flood line surveys, sectional title surveys & boundary surveys. Extent of the experience required as per Note D1.

Category C: The required personnel must be a registered Professional Land Surveyor with the South African Geomatics Council (SAGC).

Note D15. **Construction Health and Safety Officer:** must be a registered Construction Health and Safety Officer (CHSO).



Technical Requirements

The Standard Specification for Subsurface Investigations, COTO, 2010, and amended below, shall apply to this contract

<https://www.nra.co.za/?s=subsurface>

PROJECT SPECIFICATION AMENDMENTS TO THE STANDARD SPECIFICATION AND ADDITIONAL SPECIFICATIONS

In certain clauses, the Standard Specifications allow a choice to be specified in the Project Specifications between alternative requirements and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this Contract are contained in this part of the Project Specifications. It also contains some additional specifications required for this particular Contract.

The number of each clause and each payment item in this part of the Project Specifications consists of the prefix B followed by a number corresponding to the number of the relevant clause or payment item in the Standard Specifications. The number of a new clause or a new payment item which does not form part of a clause or a payment item in the Standard Specifications and which is included here, is also prefixed by B or D (depending on the relevant section) followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the Standard Specifications.

SECTION 1: ESTABLISHMENT OF CONTRACTOR

B1.7 EXTENSION OF TIME

Add the following sub-clause:

The Contractor shall be entitled to claim for an extension of time for completion of field investigation works without cost in terms of the Conditions of Contract which may be caused by:

- Inclement weather,
- Changes in quantities or rates of drilling,
- Drilling conditions (i.e. boulders, excessive water seepage, collapse etc.)

The Geotechnical Engineer will base the estimated time for completion on certain assumptions; including the number of rigs, time to set-up, total quantity and rate for drilling of the various categories of materials and number of special tests required. The exact conditions before site investigation are unknown and therefore changes to the envisaged quantities of drilling in material of a certain hardness and rates of drilling may affect the actual cost and time for completion.

Table 1.7.3 below indicates the rates anticipated by CoCT for the various activities:

Table 1.7.3. Time Estimates for different drilling activities

No.	Item	Anticipated Rate of drilling (m/day)/ testing (days)
1.	Rotary core drilling: Category A	10 m/rig/day
2.	Rotary Core drilling: Category B- D	10 m/rig/day
3.	Rotary core drilling: Gravel Cobbles Boulders	4m/rig/day
4.	Setups: Mobile and Normal Skid	0.5 day per rig
5.	Setups: Difficult skid	1 day per rig
6.	Setups: Very difficult skid	2 days per rig
8.	Installing casing	10m/rig/day
9.	Washboring: N-size	12m/rig/day
10.	Undisturbed sampling (Shelby)	1 per 2 hrs
12.	Standard penetration test	1 per 2 hrs
13.	Dynamic Probe Light	1 per 1hr
14.	Plate Load Testing	1 per 2 hrs

15.	Nuclear Density Test	2 per 1hr
16.	Continuous Surface Wave	1 per day

NOTES: In all instances Category A and Casing would occur simultaneously (at 10 m/rig/day each) which implies a combined production rate of 5 m/rig/day.

The time it will take to complete a work package should be based on a conservatively assumed soil profile (based on nearby information and the geological maps of Cape Town), anticipated rates of drilling will be agreed upon between the Geotechnical Engineer and the Drillers, after a site visit and prior to providing cost estimate for the specific Work Package.

Extensions of time and penalties will be based on these production rates, assuming a specific number of rigs. If conditions differ from those anticipated and extension of time must be agreed. Anticipated conditions to be provided formally in the work package pricing to the City of Cape Town.

The anticipated rates for drilling and times for testing on which the original programme was based are to be compared against the agreed actual rates and rigs (if more are supplied by the contractor) achieved and judged according to the format set out in Table 1.7.4 below. The Contractor may submit a claim in terms of the General Conditions of Contract) with respect to the actual drilling/testing rates mitigating the actual drilling/testing rates achieved which the Geotechnical Engineer shall evaluate and recommend for approval to the CoCT project manager. No extension of time shall be given for the Contractor's choice to utilize poor / inefficient plant or practices or due to breakages.

Table 1.7.4 Extension of Time calculation

	Billed Quantity (a)	Actual Quantity (b)	Anticipated rate/time (c)	Actual mitigated rate/time (d)	Number of rigs specified (e)	Actual number of rigs (f)	Extension of time calculated
Rotary Core Drilling: Category A							$GRC = \{(b/d/f) - (a/c/e)\}$
Undisturbed Sampling							$GUS = \{(b/d/f) - (a/c/e)\}$
SPT							$GSPT = \{(b/d/f) - (a/c/e)\}$
Etc.							
				Subtotal		A	
Inclement Weather						B	
	Total Recommended for approval (Sum of A and B)						

The extension of time approved shall be the sum of the extensions for each of the sections indicated above plus the sum of the approved extensions for inclement weather, subject to the contractor's claim with respect to the drilling rates as detailed above.

B1.9 MEASUREMENT AND PAYMENT

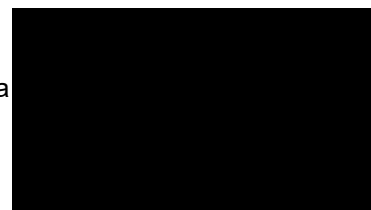
B1.9 (i) Fixed Obligations

Delete the first sentence and replace with the following:

"An additional percentage of the total cost of investigation work (Excluding priced items in Section 1 and Section B42), will be allowed to provide for full compensation of the fixed part of the Contractor's General Obligations, i.e. that part which is substantially fixed and is not a function of the time required for the completion of the works and include for the following:"

B1.9 (ii) Time related obligation

Delete the first sentence and replace with the following:



“An additional percentage of the total cost of investigation work (Excluding priced items in Section 1 and Section B42), will be allowed to provide for full compensation of obligations that are mainly function of the time for completion of work.”

B1.9 (iv) Environmental Management

Delete the first sentence and replace with the following:

“This shall be measured as a percentage of the total cost of works (Excluding priced items in Section 1 and Section B42) for the Contractor’s obligations as set out in the Work Order brief.

Add the following:

PAY ITEMS

Delete pay item 1.1.1, 1.1.2 and 1.1.4 and replace with/add the following:

B1.1.1 Fixed Charge (% of investigation cost)	percentage (%)
B1.1.2 Time related charges (% of investigation cost)	percentage (%)
B1.1.4 Environmental Management (% of investigation cost)	percentage (%)

The cost of any phone or cellphone calls are deemed to be included. No accommodation allowances are made as all the work will occur in the City of Cape Town.

Add the following pay items:

B1.5 Appointment of PSIRA grade B security personnel for 24 hours per day, 7days a week for security during working times on site
Person.hour

This rate shall include transportation to site, all two-way radios, patrol vehicles and bullet-proof vests and/or all other incidentals. The PSIRA trained personnel shall be armed if required. This item shall be measured per persons per hour.

B1.6 Appointment of PSIRA grade C security personnel for 24 hours per day, 7days a week for security during working times on site
Person.hour

This rate shall include transportation to site, all two-way radios, patrol vehicles and bullet-proof vests and/or all other incidentals. All personnel shall be PSIRA trained. This item shall be measured per persons per hour

B1.7 Appointment of PSIRA grade D security personnel for 24 hours per day, 7days a week for security during working times on site
Person.hour

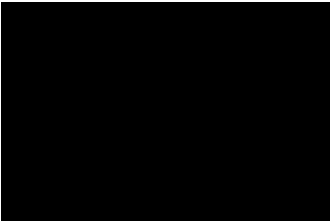
This rate shall include transportation to site all two-way radios, patrol vehicles and bullet-proof vests and/or all other incidentals. All personnel shall be PSIRA trained. This item shall be measured per persons per hour

SECTION 3: ESTABLISHMENT AND PROVISION OF RIGS AND EQUIPMENT

B3.2 MEASUREMENT AND PAYMENT

B3.2.1 Provision of drilling rigs

Delete the paragraph and replace with the following:



“The amount paid per single rig establishment shall be measured as a Lump sum and shall cover the cost of establishing the rig and equipment required and subsequent de-establishment thereof on completion of works. Three categories are provided each for a certain length of meterage drilled on a specific work package. Plant and staff shall be made available within a maximum time period of three (3) weeks from receipt of Work Order instruction.”

PAY ITEMS

Delete pay item 3.1 and replace with:

B3.1.1	Core drilling rig (total drilling <20m)	Lump sum
B3.1.2	Core drilling rig (total drilling 20-50m)	Lump sum
B3.1.3	Core drilling (>50m)	Lump sum

Add the following pay item:

B3.5.10	Low bed (For excavator)	Lump sum
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SECTION 5: SETTING UP

PAY ITEMS

Add the following pay items:

B5.4.2	Very shallow water (0.05 to 0.5m deep) E.O.5.2.3	number (no.)
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These items provide for additional payment as an Extra Over Item 5.2.3 Very difficult Skid Setups. Very shallow water setups are defined as those requiring skids over water and/or setups on shallow water potentially requiring creation of some sort of elevated platform, but otherwise not requiring a barge or pontoon. All setups shall deem to include cutting of platforms as necessary, and digging or light augering of a 1.5m service inspection pit/hole.

SECTION 12: CORE AND SOIL MATERIAL RECOVERY

B12.2	MEASUREMENT	AND	PAYMENT
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In the third paragraph delete all the occurrences of the word “Shall and replace with the word “should”.

Delete the last sentence of the third paragraph and replace it with the following sentence:

“If the rates for core recovery and soil material recovery are lower than 50% of the respective drilling and augering rates, the rates would be deemed imbalanced and the contractor may be required to rebalance the rates prior to award of the contract in terms of the conditions to tender.”

SECTION 16: DISTURBED SAMPLING

Delete the fourth paragraph and replace with the following:

“The Geotechnical engineer shall be responsible for directing which samples will be taken and at which depth. The contractor will be responsible for all supplies, for taking the samples and for safe undercover storage and transport of the samples. Samples shall be stored in sealed, transparent bags, each being clearly tagged and separately indelibly labelled (i.e. double labelled). Sample sizes will depend on the purpose for which they are required and paid for separately.”

B16.2: MEASUREMENT AND PAYMENT

Add the following after the first paragraph:

“The engineer will determine how many labourers he requires to assist with sampling.”

PAY ITEMS

Delete pay item 16.1, and replace with:

- B16.1.1 Samples (<5kg, 250x400mm 150 micron bag, tags included) number (no.)
- B16.1.2 Large Samples (<40kg,2x 600x900mm 150 micron sampling bags, tags included) number (no.)

SECTION 17: UNDISTURBED SAMPLING

B17.1.2 Block samples

Delete the first sentence of the second paragraph and replace with:
“It should be assumed that the sampling tubes will not be returned to the contractor.”

PAY ITEMS:

- Delete pay item 17.1 and replace with:
- B17.1 Thin walled tube samples (tube not returned) number (no.)

SECTION B23 STANDARD PENETRATION TEST

B23.2 MEASUREMENT AND PAYMENT

Add the following:

“The quantity to be paid for Energy measurement is number of full tests. Test shall be in accordance with ASTM 4633 using pretested instrumentation which successfully measures SPT sampling conditions.

Energy measurements shall be undertaken on equipment at start of drilling with interpretation provided in accordance to ASTM4633 to the acceptance of the Geotechnical Engineer.

It is a prerequisite that the transfer energy and Energy transfer Ratios of all SPT hammers on City of Cape Town Projects be measured and declared in an interpretive report by the Contractor (or sub-contractor) to the Geotechnical design engineer.”

SECTION B31 CORE BOXES

B31.3 Marking of boxes

Add the following:

“Information shall be stencilled on the core boxes. Freehand writing shall be allowed on the inside of the lids and on the ends. The following information is required:

	Information	Example
Lids	Contract:	40C/2018/19
	Project Name	Clifton Slope Stability
	Section	Kloof Road km 5- 6
	Borehole Number	KRBH01
	Box number and sequence	Box 1 of 5
Ends:	Contract	40C/2018/19
	Borehole Number	KRBH01
	Box Number	Box 1 of 5”

SECTION 38 LOGGING AND PROFILING

B38.2 MEASUREMENT AND PAYMENT

Delete the first two sentences and replace with:

“The services of the specialist shall be paid for per linear meter of core logged.”

PAYMENT ITEM

Delete payment item 38.1 and 38.2 and replace with the following item:

Contract

Part C3: Framework Information

Reference No. 092C/2024/25

109

Frame

B38.1 Logging of core by Geotechnical Engineer or Engineering Geologist

meter (m)

Add the following:

SECTION B42: LABORATORY TESTING

B42.1 DESCRIPTION

Provision is made for materials, geotechnical and rock laboratory testing scheduled by the Engineer. The Contractor in collaboration with the Geotechnical Engineer shall be responsible for the safe and undercover storage of samples on site prior to transportation to designated laboratory.

The test shall be undertaken in accordance with the following standards by a SANAS accredited lab, if the test methods are SANAS approved:

Table 42.1 Laboratory Test Standards

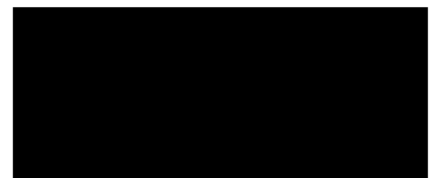
Test	Standards	Number includes for
Foundation Indicator	SANS3001-GR1, GR10 + ASTM D422	Sieve analysis and hydrometer to 2µm & Atterberg Limits)
Moisture Content	TMH A17 : 1979	In-situ dry density if undisturbed sample is collected.
Oedometer (Consolidometer)	BS1377 Part 5	
Double Oedometer	BS1377 Part 5	
Saturated Consolidated Drained Triaxial	BS1377 Part 8	3x triaxial specimen tests to get full Mohr Coulomb Curve
Saturated Consolidated Undrained Triaxial	BS1377 Part 8	3x triaxial specimen tests to get full Mohr Coulomb Curve
Unconfined Compressive Strength	CEN ISO/TS 17892-7	
Consolidated Shear Box	ASTM 3080-72	
Maximum Dry Density	SANS3001-GR30	
California Bearing Ratio (CBR)	SANS3001-GR40	
Uniaxial Compressive Strength on Rock	ISRM Suggested Methods for Rock Characterisation, testing and Monitoring or ASTM D2938:1991	
Point Load Index (PLI)	ISRM Suggested Methods for Rock Characterisation, testing and Monitoring or ASTM D5731-08	Per single test (Axial or diametrically). More than one test required to reliably estimate the average
Specific Gravity	TMH1:A12T	Also referred to as Relative Density by some laboratories
Swell Pressure	BS 1377 Part 5	
Carbonate Content	BS1377-3:1990	
Sulfate Content	SANS202	
pH Determination	TMH1 A20	
Electrical Conductivity	TMH1:A21T	Soil paste and water
Chloride Content	SABS830	
Dewpoint Potentiometer	ASTM D6836-16	Single Point

B42.2 MEASUREMENT AND PAYMENT

Measurement and payment shall be made per number of tests, meter of hand augering and days of electrical resistivity and CSW testing scheduled to the satisfaction of the Geotechnical Engineer. Any handling and mark-up and all other incidental costs are deemed to be included in B42.1 – B42.27.

PAY ITEMS

B42	Laboratory Testing	
B42.1	Foundation Indicator Test	number (no)
B42.2	Moisture Content and insitu dry density (Undisturbed sample)	number (no)
B42.3	Oedometer Test	number (no)
B42.4	Double Oedometer	number (no)
B42.5	Triaxial Test (SCD)	number (no)
B42.6	Triaxial Test (SCU)	number (no)



B42.7	Unconfined Compressive Strength Test	number (no)
B42.8	Consolidated Shear Box Test	number (no)
B42.9	Maximum Dry Density Estimation	number (no)
B42.10	California Bearing Ratio (CBR) Test	number (no)
B42.11	Uniaxial Compressive Strength on Rock sample	number (no)
B42.12	Point Load Index Test on Rock sample	number (no)
B42.13	Carbonate Content	number (no)
B42.14	Sulfate Content	number (no)
B42.15	pH Determination	number (no)
B42.16	Chloride Content	number (no)
B42.17	Soil Water Retention Curve (SWRC)	number (no)
B42.18	Total Suction Measurement of undisturbed sample using dewpoint potentiometer	number (no)
B42.19	Dynamic Cone Penetrometer (1m)	number (no.)
B42.20	Dynamic Cone Penetrometer (2m using extension rods)	number (no.)
B42.21	Dynamic Cone Penetrometer (3m using extension rods)	number (no.)
B42.22	Hand Augering	meter (m)
B42.23	Sand replacement test	number (no.)
B42.24	Electrical resistivity	meter (m)
B42.25	Continuous Surface Wave (CSW)	day
B42.26	Rising Head Test	number (no.)

Land Surveying and Scans

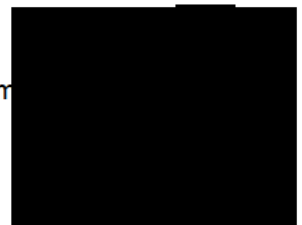
C1 – Lump sum amount includes both mobilisation to any location within the boundaries of the City of Cape Town and demobilisation. This amount should include for obtaining approvals from the relevant authorities.

C2 - Rate per hectre of surveyed area including all field staff and equipment requirements. The rate also includes processing of information.

C3 – Daily rate for the mobilisation, demobilisation and execution of building or site scans (typically LIDAR) from ground based installations. Rate includes processing of information.

C4 – Daily rate for the mobilisation, demobilisation and execution of ground penetrating radar scans for services detection or similar from ground based installations. Rate includes processing of information

C5 – Daily rate includes all support elements required to perform cadastral surveys including mobilisation, approvals, site staff and information processing



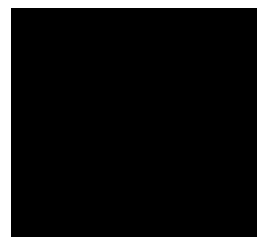
C3.3 SELECTION PROCEDURE

The Suppliers that will be considered for providing a quotation on a proposed Work Order will be determined as follows:

1. The *Client* identifies which Award Package is applicable for the proposed Work Order based on the skills and services requirement.
2. Suppliers that have been appointed as Winner or Alternative *Supplier* for the identified Award Package will be considered subject to the criteria in items below.
3. The Winner will be considered firstly and Alternative *Supplier* lastly in accordance with the *quotation procedure*.
4. If for any reason the *Supplier* indicates his/her lack of capacity for executing a Work Order at the time of consideration, the *Supplier* will be removed from consideration.
5. If the *Supplier* fails to maintain the minimum Key Personnel requirements as per section C3.2.19, the *Supplier* will be removed from consideration.
6. The sequence and process for *Supplier* consideration will be as follows:
 - a. The order of precedence for *Supplier* consideration within an Award Package is:
 - i. Winner
 - ii. Alternative Supplier
 - b. The *Client* will consider the Winner first and issue a Work Order brief and instruction to provide a quotation. If the Winner has been removed from consideration in terms of the conditions of this section. The *Client* will consider the Alternative *Supplier* and issue a Work Order brief and instruction to provide a quotation.
 - c. If following the *quotation procedure*, the *Supplier* under consideration receives the notification from the *Client's Representative* that the proposed Work Order will not be issued to the *Supplier*, the *Client* will consider the next *Supplier* on the order of precedence as per item (a) above.
 - d. The Client reserves the option of reverting to the Winner after exhausting all options stated in (b) and (c) above.

C3.4 QUOTATION PROCEDURE

1. The *Client* issues a Work Order brief to the *Supplier* under consideration. The Work Order brief contains all relevant information about the Project and services required for the Work Order contract. The requested scope contained in the Work Order brief is within the *framework scope*.
2. The *Supplier* provides a quotation within 2 weeks based on the Work Order brief and the contract rates contained in the Schedule of Rates. The quotation should include the following information, where relevant:
 - Name the individual(s) proposed, provide details of their experience in relation to the particular Work Order, the anticipated duration of their involvement and the total cost thereof;
 - Details of other resources, plant, equipment and testing along with proposed quantities and total cost based on the rates contained in the Activity Schedule and Schedule of Rates. The total cost must be below the recommended fee levels in the Guidelines in relation to Project cost where applicable;
 - All expected disbursements as contained in the Schedule of Rates including travel and printing.
 - Three independent quotations for cost reimbursement items not contained in the Schedule of Rates plus administration fee as per the Schedule of Rates;
 - Methodology for execution of the Work Order;
 - A list of CVs for each of the project team members, their company's name and the company's BBBEE status level;
 - Proposed programme for implementation of the Work Order including agreed time frames/milestones;
 - Any clarifications and exclusions from the Work Order brief.
 - Any additions to the Work Order Scope as required.
3. The *Client* assesses the *Supplier's* quotation in terms of the information provided in the quotation and the appropriateness thereof in relation to the work required and the *Client's* allocated budget for the works. The *Client* will reply in terms of clause 23.4 of the framework conditions of contract.



C3.5 WORK ORDER SCOPE

C3.5.1 GENERAL

The Work Order scope is the relevant sections from the *framework scope* in addition to the Project specific details as described in the Work Order brief.

All references to *Supplier* in the *framework scope* means the *Consultant* in the Work Order scope.

C3.5.2 WORK ORDER SCOPE TEMPLATE

The following sections may be included in the Work Order scope and is prepared specifically for each Work Order with reference to the *framework scope*:

S100 – Purpose of the service (*Client's* objective and Background)

Refer to section C3.2.1

(Add specific objectives that may include safety, quality, time and functionality. Add specific background information)

S200 – Description of the service

Refer to relevant parts of sections C3.2.3, C3.2.4, C3.2.5, C3.2.20, C3.2.21, **Error! Reference source not found.**, C3.2.22.

(Add specific activities or tasks and deliverables. Define project stages and skills required for the *service*.)

S300 – Existing information

(List existing information relevant to the *service* and add as appendices)

S400 – Specifications and standards

Refer to section C3.2.9.

(Add list of relevant specifications and standards applicable to the *service*)

S505 – Project team and interfaces – Others

Refer to relevant parts of section C3.2.10.

(Add list other organisations involved in the Project and describe interfaces, define roles and contact persons. Add services matrix or Project organogram if necessary. Define *Consultant's* responsibility in liaison with third parties, whether via the *Client* or direct liaison)

S510 – Communication system

Refer to section C3.2.6.

(Add specific communication requirements such as the use of internet collaboration tools, standard forms and templates required for the *service*.)

S515 – Management procedures

Refer to sections C3.2.8, C3.2.11, C3.2.12.

(Add specific requirements for reporting, information security and environmental requirements)

S525 – Co-ordination and co-operation

(Add specific requirements for co-ordination and co-operation with Others for preparation of any deliverables and information requirements for statutory authorities)

S530 – Submission procedures

(Add specific requirements and procedures for submitting deliverables)

S535 – Quality Management System

Refer to section C3.2.14.

(Add any specific requirements)

S540 – Quality policy statement and quality plan

(Add any specific compliance requirements for the quality policy statement and quality plan)

S545 – Health and safety requirements

Refer to section C3.2.7.

(Add any specific *Client* requirements, policy and procedures)

S555 – Disclosure

Refer to section C3.2.13.

(Add specific procedures for obtaining agreement from the *Client* to disclose information.)

S560 – Form of retained documents

Refer to section C3.2.15.

(Add any specific requirements for the forms of document retention by the *Consultant*)

S605 – Provision by the *Client*

(Detail what information and things the *Client* is to provide.)

S610 – Provision by Others

(Detail what information and things Others are to provide.)

S615 – Approvals form Others

Refer to relevant parts of section C3.2.10.

(Add any specific requirements)

S705 – Programme requirements

Refer to section C3.2.16.

(Add any specific requirements)

S715 – Sequence and timing

(Add any requirements and constraints on the sequence and timing of the *service*.)

S720 – Timing of information and other things provided by the *Client* and Others

(Add the order and timing of when information and other things are provided by the *Client* and Others.)

S730 – Completion definition

(Add specific definition for Work to be done by the Completion Date, if required. By default, all work which the Scope states should be done by the Completion Date. State which parts of the service remain incomplete by the Completion Date)

S735 – Sectional Completion definition

(Add specific information if applicable)

S805 – *Consultant's* application for payment

Refer to section C3.2.17.

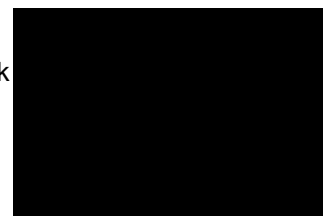
(Add any specific requirements of the *Client* for the format and details to be included in the *Consultant's* application for payment. Day or date of submission to be specified)

S810 – *Client* use of material

(Add statement of the purposes for which the *Client* intends to use the material provided by the *Consultant*.)

S815 – *Consultant* use of material

(Add any restrictions on the *Consultant* using material this contract for other work)

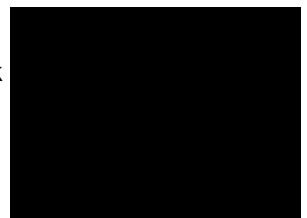


S820 – Records of expenses

(Add requirement for records, invoices, receipts and other supporting documents for all expenses incurred that are to be kept)

S900 – S1600 – Information specific to main and secondary options selected

(Add requirements as applicable)



CITY OF CAPE TOWN

DIRECTORATE: CORPORATE PROJECT, PROGRAMME AND PORTFOLIO MANAGEMENT DEPARTMENT

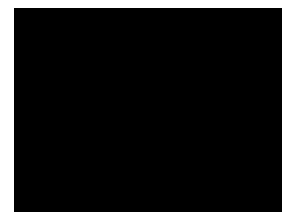
CONTRACT NO. 092C/2024/25

PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO
ENGINEERING AND BUILT ENVIRONMENT WORKS

C3.6 ANNEXES

Annex 1: B-BBEE Sub-contract Expenditure Report

Annex 2: Joint Venture Expenditure Report



ANNEX 1

CITY OF CAPE TOWN

CONTRACT NO. AND NAME: _____
CONTRACTOR (SERVICE PROVIDER): _____

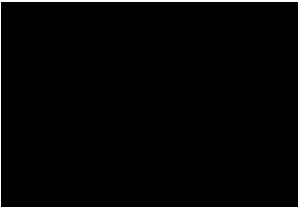
B-BBEE SUB-CONTRACT EXPENDITURE REPORT BASED ON PAYMENT NO. _____

Value of the contract (as defined in Schedule 24: Preferencing Schedule) (P*)	R	B-BBEE Status Level of Prime Contractor		
Name of Sub-contractor (list all Sub-contractors)	B-BBEE Status Level of Sub-contractor ¹	Total Value of Sub-contract (excl VAT) ¹	Value of Sub-contract work to date (excl VAT) ¹	Value of Sub-contract work to Sub-contractors with a lower B-BBEE Status Level than Prime Contractor
Sub-contractor A		R	R	R
Sub-contractor B		R	R	R
Sub-contractor C		R	R	R
¹ Documentary evidence to be provided			Total: Expressed as a percentage of P*	R %

Signatures

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

Verified by Employer's Representative: _____ Date: _____



ANNEX 2

CITY OF CAPE TOWN

CONTRACT NO. AND NAME: _____
CONTRACTOR (SERVICE PROVIDER): _____

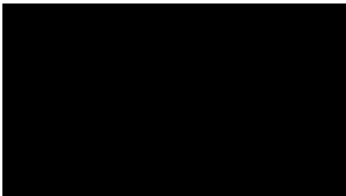
JOINT VENTURE EXPENDITURE REPORT BASED ON PAYMENT NO. _____

Value of the contract (as defined in Schedule 19: Preferencing Schedule) (P*)	R	B-BBEE Status Level of Joint Venture			
Name of Joint Venture partner (list all)	B-BBEE Status Level of each JV partner as at contract award	Percentage contribution of JV partner per JV Agreement ¹ A	Total value of JV partner's contribution (excl. VAT) ¹ B = A% x P*	Value of JV partner's contribution to date (excl. VAT) ¹ C	Value of JV partner's contribution as a percentage of the work executed to date D = C/P* x 100
JV Partner A		%	R	R	%
JV Partner B		%	R	R	%
JV Partner C		%	R	R	%

¹Documentary evidence to be provided

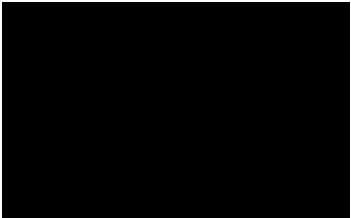
Signatures

Declared by Contractor (Service Provider) to be true and correct: _____ Date: _____
Verified by Employer's Representative: _____ Date: _____



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CITY OF CAPE TOWN

DIRECTORATE: CORPORATE PROJECT, PROGRAMME AND PORTFOLIO MANAGEMENT DEPARTMENT

CONTRACT NO. 092C/2024/25

PROVISION OF SPECIALISED MULTIDISCIPLINARY PROFESSIONAL SERVICES RELATED TO ENGINEERING AND BUILT ENVIRONMENT WORKS

C4 Site Information

All Work Order contracts in general will be executed within the City of Cape Town municipal boundaries or as specifically stipulated in the appropriate scope.

