



## NEC3 Engineering & Construction Contract

Between **ESKOM HOLDINGS SOC Ltd (Reg No. 2002/015527/30)**

and

for **Provision for the Renovations and Refurbishment panel Contract at Megawatt Park (MWP), Eskom Academy of Learning (EAL) and Eskom Research Innovation Centre (ERIC) Campuses on an “as and when required basis” for a period of three (03) years.**

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**CONTRACT No.**

# Part C1: Agreements & Contract Data

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# C1.1 Form of Offer & Acceptance

## Offer

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

**Provision for the Renovations and Refurbishment panel Contract at Megawatt Park (MWP), Eskom Academy of Learning (EAL) and Eskom Research Innovation Centre (ERIC) Campuses on an “as and when required basis” for a period of three (03) years.**

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all the obligations and liabilities of the *Contractor* 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.

|          |                                                                      |                          |
|----------|----------------------------------------------------------------------|--------------------------|
| Option B | The offered total of the Prices exclusive of VAT is                  | <b>As per Task order</b> |
|          | Sub total                                                            | <b>As per Task order</b> |
|          | Value Added Tax @ 15% is                                             | <b>As per Task order</b> |
|          | The offered total of the amount due inclusive of VAT is <sup>1</sup> | <b>As per Task order</b> |
|          |                                                                      |                          |

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the  
tenderer:**

(Insert name and address of organisation)

Name &  
signature of  
witness

Date

Tenderer's CIDB registration number (if applicable)

<sup>1</sup> This total is required by the *Employer* for budgeting purposes only. Actual amounts due will be assessed in terms of the *conditions of contract*.

## Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the Employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

|         |                                                                                  |         |
|---------|----------------------------------------------------------------------------------|---------|
| Part C1 | Agreements and Contract Data, (which includes this Form of Offer and Acceptance) | Part C2 |
|         | Pricing Data                                                                     |         |
| Part C3 | Scope of Work: Works Information                                                 |         |
| Part C4 | Site Information                                                                 |         |

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

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto 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 of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (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 at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy signed between them of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

for the  
Employer

(Insert name and address of organisation)

Name &  
signature of  
witness

Date

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

**Schedule of Deviations to be completed by the Employer prior to contract award**

Note:

1. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

| No. | Subject | Details |
|-----|---------|---------|
| 1   | [•]     | [•]     |
| 2   | [•]     | [•]     |
| 3   | [•]     | [•]     |
| 4   | [•]     | [•]     |
| 5   | [•]     | [•]     |
| 6   | [•]     | [•]     |
| 7   | [•]     | [•]     |

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, 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 Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

|                             | For the tenderer:                                  | For the Employer                                   |
|-----------------------------|----------------------------------------------------|----------------------------------------------------|
| Signature                   | _____                                              | _____                                              |
| Name                        | _____                                              | _____                                              |
| Capacity                    | _____                                              | _____                                              |
| On behalf of                | _____<br>(Insert name and address of organisation) | _____<br>(Insert name and address of organisation) |
| Name & signature of witness | _____<br>_____<br>_____                            | _____<br>_____<br>_____                            |
| Date                        | _____                                              | _____                                              |

## C1.2 ECC3 Contract Data

### Part one - Data provided by the *Employer*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

| Clause | Statement                                                                              | Data                                                                                                                                                    |
|--------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | <b>General</b>                                                                         |                                                                                                                                                         |
|        | The <i>conditions of contract</i> are the core clauses and the clauses for main Option |                                                                                                                                                         |
|        |                                                                                        | <b>B: Priced contract with bill of quantities</b>                                                                                                       |
|        | dispute resolution Option                                                              | <b>W1: Dispute resolution procedure</b>                                                                                                                 |
|        | and secondary Options                                                                  |                                                                                                                                                         |
|        |                                                                                        | <b>X1: Price adjustment for inflation</b>                                                                                                               |
|        |                                                                                        | <b>X2: Changes in the Law</b>                                                                                                                           |
|        |                                                                                        | <b>X7: Delay damages</b>                                                                                                                                |
|        |                                                                                        | <b>X16: Retention</b>                                                                                                                                   |
|        |                                                                                        | <b>X17: Low performance damages</b>                                                                                                                     |
|        |                                                                                        | <b>X18: Limitation of liability</b>                                                                                                                     |
|        |                                                                                        | <b>X19: Task Order</b>                                                                                                                                  |
|        |                                                                                        | <b>Z: Additional conditions of contract</b>                                                                                                             |
|        | of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)                   |                                                                                                                                                         |
| 10.1   | The <i>Employer</i> is (Name):                                                         | <b>Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state-owned company incorporated in terms of the company laws of the Republic of South Africa</b> |
|        | Address                                                                                | <b>Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg</b>                                                                         |
| 10.1   | The <i>Project Manager</i> is: (Name)                                                  |                                                                                                                                                         |
|        | Address                                                                                | <b>Megawatt Park Maxwell Drive, Sunninghill Sandton</b>                                                                                                 |
|        | Tel                                                                                    | <b>011 800 8000</b>                                                                                                                                     |
|        | Fax                                                                                    |                                                                                                                                                         |
|        | e-mail                                                                                 |                                                                                                                                                         |
| 10.1   | The <i>Supervisor</i> is: (Name)                                                       |                                                                                                                                                         |
|        | Tel No.                                                                                | <b>011 800 8000</b>                                                                                                                                     |
|        | Fax No.                                                                                |                                                                                                                                                         |
|        | e-mail                                                                                 |                                                                                                                                                         |

|          |                                                                 |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                     |                           |
|----------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 11.2(13) | The <i>works</i> are                                            | Renovations and Refurbishment at MWP,EAL and ERIC Campuses on an “as and when required basis” for a period of 3 years                                                                                                                                                                                |                                                                                                                                                                                     |                           |
| 11.2(14) | The following matters will be included in the Risk Register     | <ul style="list-style-type: none"><li>• Weather Conditions</li><li>• Delays and Disruptions</li><li>• Community unrest</li><li>• Labor Unrest</li><li>• Late Delivery</li><li>• Participants availability</li><li>• Other to be discussed and addressed during execution where applicable.</li></ul> |                                                                                                                                                                                     |                           |
| 11.2(15) | The <i>boundaries of the site</i> are                           | - MWP, EAL and ERIC                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                     |                           |
| 11.2(16) | The Site Information is in                                      | Part 4: Site Information                                                                                                                                                                                                                                                                             |                                                                                                                                                                                     |                           |
| 11.2(19) | The Works Information is in                                     | Part 3: Scope of Work and all documents to which it make reference.                                                                                                                                                                                                                                  |                                                                                                                                                                                     |                           |
| 12.2     | The <i>law of the contract</i> is the law of                    | The Republic of South Africa                                                                                                                                                                                                                                                                         |                                                                                                                                                                                     |                           |
| 13.1     | The <i>language of this contract</i> is                         | English                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                     |                           |
| 13.3     | The <i>period for reply</i> is                                  | <ul style="list-style-type: none"><li>• 1 week for all contractual matters</li><li>• 24 hours for health and safety matters when it arises.</li></ul>                                                                                                                                                |                                                                                                                                                                                     |                           |
| 2        | The <b>Contractor's</b> main responsibilities                   |                                                                                                                                                                                                                                                                                                      | Data required by this section of the core clauses is provided by the Contractor in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data. |                           |
| 3        | Time                                                            |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                     |                           |
| 11.2(3)  | The <i>completion date</i> for the whole of the <i>works</i> is | 36 Months from contract start date on an “as and when required basis”                                                                                                                                                                                                                                |                                                                                                                                                                                     |                           |
| 11.2(9)  | The <i>key dates</i> and the <i>conditions</i> to be met are:   | Condition to be met                                                                                                                                                                                                                                                                                  | key date                                                                                                                                                                            |                           |
|          |                                                                 | 1                                                                                                                                                                                                                                                                                                    | Various Sites                                                                                                                                                                       | Programme to be submitted |

|      |                              |                  |                          |
|------|------------------------------|------------------|--------------------------|
| 30.1 | The <i>access dates</i> are: | Part of the Site | Date                     |
|      |                              | Various Sites    | As per approved Schedule |

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|      |                                                                                       |                                                                                                                                                                                                                                                                                                                                                 |
|------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 31.1 | The <i>Contractor</i> is to submit a first Programme for acceptance within            | 2 weeks of the Contract Date.                                                                                                                                                                                                                                                                                                                   |
| 31.2 | The <i>starting date</i> is                                                           | 1 Nov 2026                                                                                                                                                                                                                                                                                                                                      |
| 32.2 | The <i>Contractor</i> submits revised Programme at intervals no longer than           | 1 week after request.                                                                                                                                                                                                                                                                                                                           |
| 35.1 | The <i>Employer</i> is not willing to take over the works before the Completion Date. | The Employer will take over the Works at the Completion of works in line with the issued task order.                                                                                                                                                                                                                                            |
| 4    | <b>Testing and Defects</b>                                                            |                                                                                                                                                                                                                                                                                                                                                 |
| 42.2 | The <i>defects date</i> is                                                            | 12 months (52 weeks) from completion per house in terms of the activity schedule agreed upon at signature of the contract or changed later if applicable.<br><br>The Contractor will provide a warranty of 12 months should the <i>Employer</i> delay installation, the costs for the extension of the warranty will be for the <i>Employer</i> |
| 43.2 | The <i>defect correction period</i> is                                                | 7 days after notification or parties to agree on the date depending on the defect.                                                                                                                                                                                                                                                              |
|      | except that the <i>defect correction period</i> for long lead items                   | Correction of long lead items will take 6-10 weeks for delivery. The <i>Contractor</i> shall endeavor to reduce the lead time as far as possible. Upon analysis of the defect, the <i>Contractor</i> will provide a Programme if the Hardware is a long lead item.                                                                              |
| 5    | <b>Payment</b>                                                                        |                                                                                                                                                                                                                                                                                                                                                 |
| 50.1 | The <i>assessment interval</i> is                                                     | 25th of each month.                                                                                                                                                                                                                                                                                                                             |
| 51.1 | The <i>currency of this contract</i> is the                                           | South African Rand.                                                                                                                                                                                                                                                                                                                             |
| 51.2 | The period within which payments are made is                                          | 30 days after assessment is signed by both parties and Tax invoice is submitted to Eskom Finance by the Service Provider                                                                                                                                                                                                                        |
| 51.4 | The <i>interest rate</i> is                                                           | the publicly quoted prime rate of interest (calculated on a 365-day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands and                                    |
| 6    | <b>Compensation Events</b>                                                            |                                                                                                                                                                                                                                                                                                                                                 |
|      | All Compensation Events are to be managed as per core clause 6 of the NEC3 ECC        |                                                                                                                                                                                                                                                                                                                                                 |

60.1(13) The place where weather is to be

recorded is:

**Midrand**

The *weather measurements* to be recorded for each calendar month are,

**Contractors shall obtain the weather**

The *weather measurements* are supplied by

**Measurements information from the South African Weather Bureau.**

The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at:

**the number of days with rainfall more than 10mm**

**the South African Weather Bureau**

Based on information recorded at the Witbank weather station, the average annual rainfall for the (*to be*

60.1(13)

Assumed values for the ten year return *weather data* for each *weather measurement* for each calendar month are:  
and which are available from:

**As stated in the South African Weather Bureau**

*inserted on award*) area is approximately mm. (Weather Bureau, Pretoria), will be included as per each site on award).

|                     |                                                                             |                                                                                                                                                                                                                                                                     |
|---------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title               |                                                                             | To be managed as per core clause 7 of the NEC3 ECC.                                                                                                                                                                                                                 |
| Risks and insurance |                                                                             |                                                                                                                                                                                                                                                                     |
| 80.1                | These are additional <i>Employer's</i> risks                                | None                                                                                                                                                                                                                                                                |
| Termination         |                                                                             | To be managed as per core clause 9 of the NEC3 ECC.                                                                                                                                                                                                                 |
| 7                   | Data for main Option clause                                                 |                                                                                                                                                                                                                                                                     |
| B                   | Priced contract with bill of quantities                                     | Terms in italics are identified elsewhere in this Contract Data.                                                                                                                                                                                                    |
| 8                   | Data for Option W1                                                          |                                                                                                                                                                                                                                                                     |
| W1.1                | The <i>Adjudicator</i> is                                                   | the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a> ). |
|                     |                                                                             | If the Parties do not agree on an Adjudicator, the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).                                                                                                                           |
| W1.2(3)             | The <i>Adjudicator nominating body</i> is:                                  | the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a> ) or its successor body.                                 |
| W1.4(2)             | The <i>tribunal</i> is:                                                     | Arbitration.                                                                                                                                                                                                                                                        |
| W1.4(5)             | The <i>arbitration procedure</i> is                                         | the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.                                                                                                                    |
|                     | The place where arbitration is to be held is:                               | South Africa                                                                                                                                                                                                                                                        |
|                     | The person or organisation who will be chosen as arbitrator                 |                                                                                                                                                                                                                                                                     |
|                     | - if the Parties cannot agree a choice or                                   | the Chairman for the time being or his nominee                                                                                                                                                                                                                      |
|                     | - if the arbitration procedure does not state who selects an arbitrator, is | of the Association of Arbitrators (Southern Africa) or its successor body.                                                                                                                                                                                          |

## 9 Data for secondary Option clauses

**X1**

### Price adjustment for inflation

The *base date* for indices is

**01 December 2025**

The proportions used to calculate the  
Price Adjustment Factor are

| proportion                    | linked to index for                                              | Index prepared by |
|-------------------------------|------------------------------------------------------------------|-------------------|
| Material – Insulation 20%     | Table O–2 Coke, petroleum, chemical, rubber and plastic products | Seifsa            |
| Material – Ceiling boards 30% | Table G–2(A) Building installation                               | Seifsa            |
| Material – Wiring 10%         | Table G–2 (A) Electrical contractors                             | Seifsa            |
| Material – Paint 3%           | Table M – 6 Paint                                                | Seifsa            |
| Labour -15%                   | Table C3 – AHPE                                                  | Seifsa            |
| Overheads -4%                 | Table D–2                                                        | Seifsa            |
| Transport -3%                 | Table L2–A                                                       | Seifsa            |
| Fixed - 15%                   | non-adjustable                                                   |                   |
| Total – 100%                  |                                                                  |                   |

•Tendered prices will be fixed for the first twelve (12) months after contract signing date and thereafter subject to escalation as indicated above.

**X2**

### Changes in the law

Becomes a Compensation Event only if the changes in the Law of the Republic of South Africa took place after the Contract Date

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

|       |                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                           |
|-------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X7.1  | <p>Delay damages for late Completion of each activity is</p> <p>The total delay damages payable by the Contractor does not exceed:</p> | <p><b>1% of the total price of each activity.</b></p> <p><b>5% of the total price of each activity.</b></p> <p><b>Each delay incident will be assessed on its merit. The early warning process shall be used to communicate all delays. The Liquidated damages in the activity schedule shall be subject to a grace period of 7 days</b></p> <p><b>Eskom reserves a right to move the works to another Contracted Service Provider in case of incapacity or delays from the Service Provider.</b></p> |                                                                                                                                                                           |
| X16.2 | <p>The retention percentage is</p>                                                                                                     | <p><b>5%</b></p> <p><b>50% percent of retained amount will be paid at completion, while another 50 % will be paid after defects period.</b></p>                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                           |
| X17   | <b>Low performance damages</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                           |
| X17.1 | <p>The amounts for low performance damages are:</p>                                                                                    | <b>Amount</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Performance level</b>                                                                                                                                                  |
|       |                                                                                                                                        | <b>R 2,000 per day up until a maximum of 10 days</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance with Safety file/ plan requirements. (If not approved as per the Accepted Programme within 1 week from submission, it shall be deemed to be approved)          |
|       |                                                                                                                                        | <b>R 2,000 per day up until a maximum of 10 days</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Failure to revise the Programme as per the agreement.                                                                                                                     |
|       |                                                                                                                                        | <b>R 2,000 per day up until a maximum of 10 days</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | For every incident where a Quality Control Plan is not submitted in accordance with the schedule and delays the starting of that activity                                 |
|       |                                                                                                                                        | <b>R 2,000 per day up until a maximum of 10 days</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | For every incident of quality non-compliance where Contractor fails to notify the Employer including none compliant to approved witness points on Quality Control Plan’s. |
|       |                                                                                                                                        | <b>R 2,000 per day up until a maximum of 10 days</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | For every incident where reworks is done three times and more.                                                                                                            |

The total low performance damages payable by the Contractor does not exceed:

The total low performance damages payable by the Contractor does not exceed 2% of the Contract Price

| X18   | Limitation of liability                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X18.1 | The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:                                                                    | <b>R0.0 (zero Rand)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| X18.2 | For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:                            | <b>the amount of the deductibles relevant to the event not to exceed the total of the Prices</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| X18.3 | The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to                                                 | <b>R0.0 (zero Rand)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| X18.4 | The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to: | <p><b>the total of the Prices other than for the additional excluded matters.</b></p> <p><b>The <i>Contractor's</i> total liability for the additional excluded matters is not limited.</b></p> <p><b>The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for</b></p> <ul style="list-style-type: none"> <li>• Defects due to manufacture and fabrication outside the Site,</li> <li>• Loss of or damage to property (other than the <i>works</i>, Plant and Materials),</li> <li>• Death of or injury to a person and</li> </ul> |
| X18.5 | The <i>end of liability date</i> is                                                                                                                                           | <p><b>(i) 1 year after the <i>defects date</i> for latent Defects and</b></p> <p><b>(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.</b></p> <p><b>A latent Defect is a Defect which would not have been discovered on reasonable inspection by the <i>Employer</i> or the <i>Supervisor</i></b></p>                                                                                                                                    |

**X19**

**Task Order**

**X19.5**

The Contractor submits a Task Order programme to the Service Manager within **Order**

**5 working days of receiving the Task**

before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period. If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.

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**Z**      **The *Additional conditions of contract* are**

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**Z1 to Z21 always apply.**

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**Z1      Cession delegation and assignment**

Z1.1      The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*.

Z1.2      Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

**Z2      Joint ventures**

Z2.1      If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the *Employer* for the performance of this contract.

Z2.2      Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the *Contract Date* of the key person who has the authority to bind the *Contractor* on their behalf.

Z2.3      The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

**Z3      Change of Broad Based Black Economic Empowerment (B-BBEE) status**

Z3.1      Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor's* B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.

Z3.2      The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.

Z3.3      Where, as a result, the *Contractor's* B-BBEE status has decreased since the *Contract Date* the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor's* obligation to Provide the Works.

Z3.4      Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

## **Z4 Confidentiality**

- Z4.1 The Receiving Party does not disclose or make any information arising from or in connection with this contract available to Others, without the prior written consent of the Disclosing Party, which is not unreasonably withheld. This undertaking does not apply to information which at the time of disclosure or thereafter, without default on the part of the Receiving Party, enters the public domain or to information which was already in the possession of the Receiving Party at the time of disclosure, or information independently developed without reference to the Disclosing Party's information. Should the Contractor disclose information to Others in terms of clause 25.1, the Contractor ensures that the provisions of this clause are complied with by the recipient
- Z4.2 If the Receiving Party is uncertain about whether any such information is confidential, it is regarded as such until notified otherwise by the Disclosing Party.
- Z4.3 . In the event that the Receiving Party is required by law to disclose any such information which is required to be kept confidential, the Receiving Party, to the extent permitted by law prior to disclosure, notifies the Disclosing Party so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the Receiving Party may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed
- Z4.4 The Receiving Party ensures that all his Subcontractors abide by the undertakings in this clause
- Z4.5 The taking of images (whether photographs, video footage or otherwise) of the works or any portion thereof, in the course of Providing the Services or after Completion, requires the prior written consent of the Employer. All rights in and to all such images vests in the Employer

## **Z5 Waiver and estoppel: Add to core clause 12.3:**

- Z5.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Project Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

## **Z6 Health, safety and the environment: Add to core clause 27.4**

- Z6.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*:
- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site;
  - warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
  - undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.
- Z6.2 The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

**Z7 Provision of a Tax Invoice and interest. Add to core clause 51**

- Z7.1 Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer's* procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.
- Z7.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.
- Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer's* VAT number 4740101508 on each invoice he submits for payment.

**Z8 Notifying compensation events**

- Z8.1 Delete from the last sentence in core clause 61.3, "unless the *Project Manager* should have notified the event to the *Contractor* but did not".

**Z9 Employer's limitation of liability**

- Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)
- Z9.2 The *Contractor's* entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Employer's* liability under the indemnity is limited.

**Z10 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":**

- Z10.1 or had a business rescue order granted against it.

**Z11 Addition to secondary Option X7 Delay damages (if applicable in this contract)**

- Z11.1 If the amount due for the *Contractor's* payment of delay damages reaches the limits stated in this Contract Data for Option X7 or Options X5 and X7 used together, the *Employer* may terminate the *Contractor's* obligation to Provide the Works using the same procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table.

**Z12 Ethics**

For the purposes of this Z-clause, the following definitions apply:

- Affected Party** means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,
- Coercive Action** means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,

- Collusive Action** means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,
- Committing Party** means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,
- Corrupt Action** means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,
- Fraudulent Action** means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,
- Obstructive Action** means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and
- Prohibited Action** means any one or more of a Coercive Action, Collusive Action, Corrupt Action, Fraudulent Action or Obstructive Action.
- Z12.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.
- Z12.2 The *Employer* may terminate the *Contractor's* obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the *Employer* has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor's* obligation to Provide the Services for this reason.
- Z12.3 If the *Employer* terminates the *Contractor's* obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.
- Z12.4 A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.

## **Z13 Insurance**

### **Z 13.1 Replace core clause 84 with the following:**

#### **Insurance cover 84**

- 84.1** When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.
- 84.2** The *Contractor* provides the insurances stated in the Insurance Table A.
- 84.3** The insurances provide cover for events which are at the *Contractor's* risk from the *starting date* until the earlier of Completion and the date of the termination certificate.

**INSURANCE TABLE A**

| Insurance against | Minimum amount of cover or minimum limit of indemnity |
|-------------------|-------------------------------------------------------|
|-------------------|-------------------------------------------------------|

|                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Loss of or damage to the <i>works</i> , Plant and Materials                                                                                                                                                                                                       | <p>The replacement cost where not covered by the <i>Employer's</i> insurance</p> <p>The <i>Employer's</i> policy deductible, as at Contract Date, where covered by the <i>Employer's</i> insurance</p>                                                                                                                                                                                                                                   |
| Loss of or damage to Equipment                                                                                                                                                                                                                                    | The replacement cost                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Liability for loss of or damage to property (except the <i>works</i> , Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i> ) caused by activity in connection with this contract | <p><u>Loss of or damage to property</u><br/><u><i>Employer's</i> property</u></p> <p>The replacement cost where not covered by the <i>Employer's</i> insurance</p> <p>The <i>Employer's</i> policy deductible, as at Contract Date, where covered by the <i>Employer's</i> insurance</p> <p><u>Other property</u><br/>The replacement cost</p> <p><u>Bodily injury to or death of a person</u> The amount required by applicable law</p> |
| Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract                                                                                               | The amount required by the applicable law                                                                                                                                                                                                                                                                                                                                                                                                |

## Z 13.2

### Replace core clause 87 with the following:

The *Employer* provides the insurances stated in the Insurance Table B.

**INSURANCE TABLE B**

| Insurance against or name of policy               | Minimum amount of cover or minimum of indemnity |
|---------------------------------------------------|-------------------------------------------------|
| Assets All Risk                                   | Per the insurance policy document               |
| Contract Works insurance                          | Per the insurance policy document               |
| Environmental Liability                           | Per the insurance policy document               |
| General and Public Liability                      | Per the insurance policy document               |
| Transportation (Marine)                           | Per the insurance policy document               |
| Motor Fleet and Mobile Plant                      | Per the insurance policy document               |
| Terrorism                                         | Per the insurance policy document               |
| Cyber Liability                                   | Per the insurance policy document               |
| Nuclear Material Damage and Business Interruption | Per the insurance policy document ( N/A)        |
| Nuclear Material Damage Terrorism                 | Per the insurance policy document ( N/A)        |

**Z14**                      **Nuclear Liability - Not Applicable**

**Z15**                      **Asbestos**

For the purposes of this Z-clause, the following definitions apply:

|                              |                                                                                                                                                                                                                                                                                                              |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AAIA</b>                  | means approved asbestos inspection authority.                                                                                                                                                                                                                                                                |
| <b>ACM</b>                   | means asbestos containing materials.                                                                                                                                                                                                                                                                         |
| <b>AL</b>                    | means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL.                                                     |
| <b>Ambient Air</b>           | means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.                                                                                                                             |
| <b>Compliance Monitoring</b> | means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles. |
| <b>OEL</b>                   | means occupational exposure limit.                                                                                                                                                                                                                                                                           |
| <b>Parallel Measurements</b> | means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.                                                                                                                                                                                            |
| <b>Safe Levels</b>           | means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.                                                                                       |
| <b>Standard</b>              | means the <i>Employer's Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.</i>                                                                                                      |
| <b>SANAS</b>                 | means the South African National Accreditation System.                                                                                                                                                                                                                                                       |
| <b>TWA</b>                   | means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.                                                                                                    |

Z15.1                      The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

- Z15.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor's* expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z15.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.
- Z15.3 The *Employer* manages asbestos and ACM according to the Standard.
- Z15.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented and relevant air monitoring conducted in order to declare the area safe.
- Z15.5 The *Contractor's* personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.
- Z15.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.
- Z15.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer's* expense, and conducted in line with South African legislation.

## **Z16 Employer's right to review the contract**

ZZ16.1 The Employer reserves the right to terminate or modify the contract when a need arises or when there are changes requiring such in the organization. Such termination or modification will be subjected to reason for termination, procedure and accounts applicable to the NEC3 ECC core clause 9 termination.

## **Z17 Intellectual property rights**

- Z17.1 "Intellectual Property" means all copyrights, trademarks, trade secrets, patents, utility models and other intellectual property rights recognized in any jurisdiction worldwide, including all applications and registrations.
- Z17.2 No right, title or interest in Intellectual Property provided by Contractor is transferred to Employer under the Agreement, including Intellectual Property existing prior to, or created independently of, the performance of the Agreement. All Intellectual Property and results of Services, including software, models, designs, drawings, documents, inventions, and know-how ("Inventions"), conceived or developed by Contractor in connection with the Agreement, are the sole property of Contractor and Employer assigns any rights it may have in such Inventions to Contractor. Employer has no right or license to Intellectual Property or Inventions provided by Contractor, except as granted in the Agreement.
- Z17.3 Contractor and its suppliers retain all right, title and interest to all Software, and all modifications and enhancements thereof, and no right, title, or interest in the Software, or any copies thereof, is transferred to Employer. Employer will hold all Software supplied by Contractor in strict confidence and will use best efforts not to disclose Software to others. All Software delivered by Contractor is subject to a software license or software subscription agreement ("License"). If Employer does not agree to a License with Contractor, Employer does not have a license or right to Software.

- Z17.4 Employer retains all rights that Employer already holds in data and other information that Employer or persons acting on Employer's behalf input, upload, transfer or make accessible in relation to, or which is collected from Employer or third party devices or equipment by, the Deliverables ("Input Data").
- Z17.5 The Contractor shall grant the Employer a non-exclusive, non-transferable, fully paid-up and royalty-free licence to use the Contract Intellectual Property strictly as may be required by the Employer and its wholly owned subsidiaries for the purpose of to use the Works.
- Z17.6 Contractor and its Affiliates have the right to retain, transfer, disclose, duplicate, analyze, modify and otherwise use Input Data to provide, protect, improve or develop Contractor's products or services. Contractor and its Affiliates may also use Input Data for any other purpose provided it is in an anonymized form that does not identify Employer. Any Employer Personal Data contained within Input Data shall only be used or processed in accordance with the data privacy terms of this Agreement and applicable law. All information, analysis, insights, inventions and algorithms derived from Input Data by Contractor and/or its Affiliates (but excluding Input Data itself) and any intellectual property rights related thereto, are owned exclusively and solely by Contractor and are Contractor's confidential information. This section survives termination of this Agreement.
- Z17.7 Contractor will defend any suit against Employer claiming that a Deliverable infringes a valid United States and South Africa patent or copyright existing as of the Agreement effective date and will indemnify Employer for any final judgment against Employer resulting from the suit provided Employer: (a) gives Contractor prompt notice when Employer becomes aware of a third-party claim, (b) gives complete authority and assistance (at Contractor's expense) for disposition of the claim, and (c) makes no prejudicial admission about the claim.
- Z17.8 Contractor has no liability, and Employer will indemnify Contractor for claims related to: (a) Deliverables supplied per Employer designs, drawings or specifications that were not supplied by the Contractor, (b) Deliverables used other than for the purpose for which they were delivered, (c) combining a Deliverable with a product or software not supplied by Contractor, (d) modification of a Deliverable by anyone other than Contractor, (e) compromise or settlement made without written Contractor consent, or (f) Employer's failure to install updates, upgrades, error corrections, changes, or revisions provided by Contractor. Contractor has no liability for Employer's costs or attorney fees.
- Z17.9 If an infringement claim is made or is likely, Contractor may at its option and expense: (a) procure the right for Employer to continue using the Deliverable, (b) modify the Deliverable to be non-infringing, or (c) accept return of the Deliverable (and terminate Employer's applicable software license) and credit Employer the purchase price paid for the Deliverable, less reasonable depreciation for use, damage and obsolescence. Failure of Employer to accept any of the above remedies in lieu of the infringing Deliverable relieves Contractor of any liability for infringement. Failure to ship original Deliverables deemed infringing will not be a breach to the Agreement.
- Z17.10 THIS SECTION STATES CONTRACTOR'S ENTIRE LIABILITY AND EMPLOYER'S SOLE RECOURSE AND EXCLUSIVE REMEDIES WITH RESPECT TO INFRINGEMENT

## **Z18 Protection of Personal Information Act Compliance**

- Z18.1 For the purposes of this clause, the terms "Data Subject", "Personal Information", "Processing" and "Regulator" and "Responsible Party" have the meanings given to them in the Protection of Personal Information Act, 2013 ("POPIA").
- Z18.2 Each Party acknowledges that it is an independent Responsible Party in relation to the Personal Information processed in terms of this contract ("Shared Personal Information") and that it determines the purposes for which and the manner in which the Shared Personal Information is, or is to be, processed.
- Z18.3 Each Party shall always comply with POPIA when performing its obligations under this contract and shall not perform any of their respective obligations under this contract in such a way as to cause the other Party to breach any of that other Party's obligations under POPIA.
- Z18.4 Each Party shall ensure that, in respect of all Shared Personal Information provided to the other Party and in respect of the use of that Shared Personal Information under this contract:-
- Z18.4.1 All necessary fair Processing notices have been provided to and consents obtained from Data Subjects by that Party, where required, in terms of POPIA, including to specify that the other Party is also a Responsible Party in

respect of the Data Subject's Personal Information and to provide a link (for example, <https://www.eskom.co.za/about-eskom/website-terms-and-conditions/>) to the other Party's Privacy Statement or to include a statement that the other Party's Privacy Statement can be found on the other Party's corporate website; and

Z18.4.2 All necessary steps have been taken to ensure that Shared Personal Information has been collected and processed in accordance with the principles set out in POPIA, including in particular those relating to:

- lawful, fair and transparent Processing;
- specified, legitimate and explicit purposes of Processing; and
- adequate, relevant and not excessive Processing.

Z18.5 If either Party receives any complaint, notice or communication from the Regulator which relates directly to:

Z18.5.1 The other Party's Processing of the Shared Personal Data; or

Z18.5.2 A potential failure by the other Party to comply with POPIA in respect of the activities of the Parties under or in connection with this contract, it shall, to the extent permitted by law, promptly notify the other Party and provide such information as it shall reasonably request in that regard.

Z18.6 If a Data Subject makes a written request to either Party to exercise any of their rights under POPIA, the receiving Party shall respond to that request in accordance with POPIA. To the extent the request concerns Processing of Shared Personal Information undertaken by the other Party, the receiving Party shall:

Z18.6.1 Promptly and without undue delay forward the request to the other Party; and

Z18.6.2 Cooperate and provide reasonable assistance in relation to that request to enable the other Party to respond in accordance with POPIA.

Z18.7 Each Party acknowledges that the other Party may disclose Shared Personal Information to any Regulator or law enforcement authority with jurisdiction to request access to the Shared Personal Information.

Z18.8 Neither Party discloses or otherwise makes available the Personal Information to any third party (including sub-contractors, but excluding its authorised employees who require access to such Personal Information strictly in order for the Parties to carry out their obligations pursuant to this contract), unless a Party has provided, to a requesting Party, its prior written consent to do so, and the requesting Party has submitted to the other Party (consenting Party), to its satisfaction, a copy of a written contract or undertaking that the requesting Party has entered into with a third party for the protection of Personal Information of the Data Subjects or unless there is an applicable exemption in terms of the law to process or further process the personal information.

Z18.9 The requesting Party indemnifies and holds harmless the consenting Party and its staff, successors, cessionaries, delegates, and assigns, from any and all losses, costs, expenses and damage, as well as penalties and fines arising from the requesting Party's non-compliance with the provision of any relevant legislation applicable to Personal Information or data protection, as well as damage to the consenting Party's reputation and costs of compliance as directed by the Regulator, including but not limited to publication of the data breach.

## **Z19 Security Clearance/ Criminal Checks**

These clauses are not only, but are especially, applicable for accessing critical infrastructure in terms of the Critical Infrastructure Protection Act, 2019 (previously referred to as National Key Points), but may include other sites, and/or where persons are rendering a service or have given notice of intention to render a service to an organ of state, which service may (1) give him or her access to classified information and intelligence in the possession of the organ of state; or (2) give him or her access to or information concerning areas designated as critical infrastructure.

Z19.1 The Contractor and its subcontractors implement risk and security management processes and measures to mitigate any threats against any premises, installations or sites, systems, or information of the Employer with only persons with criminal verification record security clearance certificates being given access after verification of these and identifying documents by the Employer's security system.

Z19.2 The Contractor provides, at the Contractor's cost, to the Employer, criminal verification record security clearance

certificates for each person the Contractor or its subcontractors requires to access any premises, installations or sites, systems, or information of the Employer, with copies of their identifying documents, such as passports, before allowed such access by the Employer. The Employer's refusal to allow access to premises, installations or site/s, systems or information is at the Employer's sole discretion and is not a compensation event.

**Z19.3** The criminal verification record security clearance certificates provided are to have been issued by a service provider which is to be a reputable screening company accredited by the South African Police Services, are to be no older than four weeks since issue and valid for as long as each person is required to access premises, installations or sites, systems or information. The Employer may require updated certificates and identifying documents every 26 to 52 weeks, subject to safety and security concerns and the risk rating of the works or services undertaken and/or premises, installations or sites, systems or information.

**Z19.4** If any such criminal verification record security clearance certificates is cancelled, withdrawn, invalidated, amended, or expires, or a criminal conviction is noted against any person requiring access, even if an appeal against the criminal conviction has been noted, the Service Manager may instruct the Contractor to ensure that such person leaves the premises, installations or site/s and is blocked from systems and information and the giving of this instruction is not a compensation event.

**Z20 Aggregate Liability for penalties**

Total aggregate liability for clauses X7 and X17 shall be limited to 5% of the Contract Price and later amended or modified if applicable.

**Z21 SDL&I**

The Contractor shall offer a bond in lieu of retention of monies.

## C1.2 Contract Data

### Part two - Data provided by the *Contractor*

#### Notes to a tendering contractor:

- a. Please read both the NEC3 Engineering and Construction Contract (April 2013) and the relevant parts of its Guidance Notes (ECC3-GN)<sup>2</sup> in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 (April 2013) Guidance Notes.
- b. The number of the clause which requires the data is shown in the left-hand column for each statement however other clauses may also use the same data
- c. Where a form field like this [    ] appears, data is required to be inserted relevant to the option selected. Click on the form field **once** and type in the data. Otherwise complete by hand and in ink.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

| Clause   | Statement                                                                                                                                                                                   | Data                                                                                         |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 10.1     | The <i>Contractor</i> is (Name):<br>Address<br>Tel No.<br>Fax No.                                                                                                                           |                                                                                              |
| 11.2(8)  | The <i>direct fee percentage</i> is<br>The <i>subcontracted fee percentage</i> is                                                                                                           |                                                                                              |
| 11.2(18) | The <i>working areas</i> are the Site and                                                                                                                                                   |                                                                                              |
| 24.1     | The <i>Contractor's</i> key persons are:<br>1 Name:<br>Job:<br>Responsibilities:<br>Qualifications:<br>Experience:<br>2 Name:<br>Job<br>Responsibilities:<br>Qualifications:<br>Experience: | CV's (and further key persons data including CVs) are appended to Tender Schedule entitled . |

<sup>2</sup> Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see [www.ecs.co.za](http://www.ecs.co.za)

|          |                                                                 |                                                                                                                                                                                |
|----------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11.2(3)  | The <i>completion date</i> for the whole of the works is        |                                                                                                                                                                                |
| 11.2(14) | The following matters will be included in the Risk Register     |                                                                                                                                                                                |
| 11.2(19) | The Works Information for the <i>Contractor's</i> design is in: |                                                                                                                                                                                |
| 31.1     | The programme identified in the Contract Data is                |                                                                                                                                                                                |
| <b>B</b> | <b>Priced contract with bill of quantities</b>                  |                                                                                                                                                                                |
| <b>A</b> | <b>Priced contract with activity schedule</b>                   | <p>As per price schedule<br/><b>(in figures)</b></p> <p><b>(in words), excluding VAT</b></p>                                                                                   |
| 11.2(20) | The <i>activity schedule</i> is in                              |                                                                                                                                                                                |
| 11.2(30) | The tendered total of the Prices is                             |                                                                                                                                                                                |
|          |                                                                 |                                                                                                                                                                                |
|          | <b>Data for Schedules of Cost Components</b>                    | <p><i>Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).</i></p> |
| <b>A</b> | <b>Priced contract with activity schedule</b>                   | <b>Data for the Shorter Schedule of Cost Components</b>                                                                                                                        |

**PART 2: PRICING DATA**  
**ECC3 Option B**

| Document reference | Title                         | No of pages |
|--------------------|-------------------------------|-------------|
| C2.1               | Pricing assumptions: Option B |             |
| C2.2               | The <i>Bill of quantities</i> |             |

## • C2.1 Pricing assumptions: Option B

### How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract (ECC3) Option B states:

|                                     |             |                                                                                                                                                                                                                                                                        |
|-------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Identified and defined terms</b> | <b>11</b>   |                                                                                                                                                                                                                                                                        |
|                                     | <b>11.2</b> | (21) The Bill of Quantities is the <i>bill of quantities</i> as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.                                                                  |
|                                     |             | (28) The Price for Work Done to Date is the total of                                                                                                                                                                                                                   |
|                                     |             | the quantity of the work which the <i>Contractor</i> has completed for each item in the Bill of Quantities multiplied by the rate and a proportion of each lump sum which is the proportion of the work covered by the item which the <i>Contractor</i> has completed. |
|                                     |             | Completed work is work without Defects which would either delay or be covered by immediately following work.                                                                                                                                                           |
|                                     |             | (31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.                                                                                                                         |

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

### Function of the Bill of Quantities

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The Contractor Provides the Works in accordance with the Works Information". Hence the Contractor does not Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

### Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract Guidance Notes before preparing the bill of quantities or before entering rates and lump sums into the bill.

There is no general provision in Option B for payment for materials on Site before incorporation into the works. If secondary Option X14 Advanced payment has not been used then the tendering contractor may obtain the same effect by inserting appropriate items in the method related charges where the method of measurement allows, or alternatively making allowance in the rates of the bill of quantities for the financing of Plant and Materials until they are incorporated in the works.

When compensation events arise, the default position is that the Bill of Quantities is not used to calculate the cost effect of the event. Defined Cost and the resulting Fee is used and Defined Cost includes all components of cost which the Contractor is likely to incur, including so called P & G items. Rates and lump sums from the Bill of Quantities, or from any other source, may be used instead of Defined Cost and the Fee only if the Contractor and Project Manager agree. If they are unable to agree, then Defined Cost plus Fee is used.

## Measurement and payment

### Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

[add or delete as required]

| Abbreviation         | Unit                      |
|----------------------|---------------------------|
| %                    | percent                   |
| h                    | hour                      |
| ha                   | hectare                   |
| kg                   | kilogram                  |
| kl                   | kilolitre                 |
| km                   | kilometre                 |
| km-pass              | kilometre-<br>pass        |
| kPa                  | kilopascal                |
| kW                   | kilowatt                  |
| l                    | litre                     |
| m                    | metre                     |
| mm                   | millimetre                |
| m <sup>2</sup>       | square metre              |
| m <sup>2</sup> -pass | square metre<br>pass      |
| m <sup>3</sup>       | cubic metre               |
| m <sup>3</sup> -km   | cubic metre-<br>kilometre |
| MN                   | meganewton                |
| MN.m                 | meganewton-<br>metre      |
| MPa                  | megapascal                |
| No.                  | number                    |
| sum                  | Lump sum                  |
| t                    | tonne<br>(1000kg)         |

### General assumptions

1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.
2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.
3. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*.
4. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due.
5. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. Detail regarding the extent of the work entailed under each item is provided in the Works Information.

### Departures from the *method of measurement*

**Amplification of or assumptions about measurement items**

The following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.

## C2.2 the *bill of quantities*

Use this page as a summary page or as a cover page to the bill of quantities.

The Bill of Quantities (BoQ) is not required at this stage of the process and will be applicable during the task order stage.

## PART 3: SCOPE OF WORK

| Document reference | Title                                                  | No of pages |
|--------------------|--------------------------------------------------------|-------------|
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| C3.2               | <i>Contractor's Works Information</i>                  |             |
|                    | Total number of pages                                  | 45          |

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**PART 4: SITE INFORMATION..... 2**

## 1. Description of the works

### 1.1 Executive overview

This document provides technical requirements for engineering, procurement or fabrication or manufacture, construction which encompasses installation and commissioning, of:

a) Electrical system:

Inclusive of small power and lighting: power cables, conductors, luminaires/light fittings/ lamps, switchgear, earthing/bonding and all peripheral work to ensure ERE properties are fully functional electrically.

b) Control and instrumentation

Inclusive of all related instrumentation, wiring, wiring termination and controllers for Building Management systems such as PA system, Fire Detection System, Airconditioning controllers, Security, and access control, lift and escalators, energy monitoring and lighting controller for the work according to the requested work to be done.

c) Architectural

Architectural Works comprise supply and fit of all components that make up a functional building, this ranges from amending existing, new proposed additions, or repairing existing fabric entailing components like drywalling, brickwork, painting, plastering, tiling, ceiling work, flooring both internal and external and repairing and/or preparation, lighting, glazing and facades, doors and windows, ironmongery, sanding and sealing, roofing and cladding, waterproofing, plumbing and fixtures, rainwater goods.

d) Mechanical

The mechanical scope will cover HVAC, Fire Protection and Wet Services, supply of material construction testing balancing and commissioning of mechanical systems.

e) Civil

Incorporates trenching and earthworks (where applicable), equipment support structures/plinths installation/modification, demolition of existing structural components, timber Works (example roofing), masonry Works, steel Works, creation of openings, stormwater and drainage, waterproofing, road Works and structural repair Works.

### 1.2 Employer's objectives and purpose of the works

The requirement for Eskom Real Estates is to have in place a *Contractor(s)* for engineering (where required), construction Works who will carry out all project requirements as set out in this scope work. The *Employer* provides the following documentation to the *Contractor* for use as baseline for the Works:

- Relevant Eskom design base documentation, specifications, and standards.
- Construction drawings and layouts regarding the Works the Employer is to design which will yield *As-built* drawings.
- Detailed design reports, also under the Works the Employer is to design.

All *Employer* information and property made available to the *Contractor*, including the Works done by the *Contractor* for the *Employer*, is confidential and may not be disclosed to external parties without the *Employer's* consent. If there is any further information the *Contractor* requires for the Works, it is the *Contractor's* responsibility to inform the *Employer* timeously and ensure that the overall project schedule is not affected negatively.

### 1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

| Abbreviation | Meaning given to the abbreviation            |
|--------------|----------------------------------------------|
| • AFC        | Approved for construction                    |
| • A          | • Amperes                                    |
| • ACB        | • Air Circuit Breaker                        |
| • AFC        | • Approved for construction                  |
| • BESS       | • Battery Energy Storage System              |
| • BMS        | • Building Management System                 |
| • CCTV       | • Closed Circuit Television                  |
| • CMBS       | • Central Building Management System         |
| • DB         | • Distribution Board                         |
| • DC         | • Direct Current                             |
| • EAL        | • Eskom Academy of Learning                  |
| • ERIC       | • Eskom Research and Innovation Centre       |
| • ECM        | • Engineering Change Management              |
| • ECSA       | • Engineering Council of South Africa        |
| • ERE        | • Eskom Real Estate                          |
| • ERIC       | • Eskom Research and Innovation Centre       |
| • est.       | • Estimate                                   |
| • FDIA       | • Fire Detection Installers Association      |
| • FDS        | • Fire Detection System                      |
| • FACP       | • Fire Alarm Control Panels                  |
| • HID        | • High Intensity Discharge                   |
| • HMI        | • Human Machine Interface                    |
| • HVAC       | • Heating, Ventilation, and Air Conditioning |
| • kVA        | • Kilo Volt Ampere                           |
| • LDC        | • Leadership Development Centre              |
| • LED        | • Light Emitting Diode                       |
| • m          | • Meter                                      |
| • MCB        | • Miniature Circuit Breaker                  |
| • MCCB       | • Moulded Case Circuit breaker               |
| • MDR        | • Multi-disciplinary Review                  |
| • mm         | • Millimetre                                 |
| • MWP        | • Megawatt Park                              |
| • NEC        | • New Engineering Contract                   |

|         |                                                   |
|---------|---------------------------------------------------|
| • OEM   | • Original Equipment Manufacturer                 |
| • OBL   | • Outside Battery Limits                          |
| • PA    | • Public Address                                  |
| • PV    | • Photovoltaic                                    |
| • PVC   | • Polyvinyl Chloride                              |
| • RAC   | • Registered Asbestos <i>Contractor</i>           |
| • SABS  | • South African Bureau of Standards               |
| • SCPD  | • Short Circuit Protective Device                 |
| • SANS  | • South African National Standards                |
| • SWA   | • Steel Wire Armoured                             |
| • SANAS | • South African National Accreditation System     |
| • SCADA | • Supervisory Control and Data Acquisition        |
| • V     | • Volt                                            |
| • VMS   | • Video Management System                         |
| • VVVF  | • Variable Voltage Variable Frequency             |
| • PSIM  | • Physical Security Information Management system |

## 2 Management and start up.

### 2.1 Management meetings

The intention is that the Parties and their agents use the techniques of partnering to manage the contract by holding meetings designed to pro-actively and jointly manage the administration of the contract with the objective of minimising the adverse effects of risks and surprises for both Parties.

Weekly progress meetings are convened by the Project Manager and/or Supervisors to discuss the following:

- Risk Reduction
- Progress / Programming & Scheduling
- Project meetings Finances and

The following meetings are convened as and when necessary:

- Technical & Design Co-ordination
- Specialist Meeting
- Special purpose meetings

The *Contractor* notes that attendees have the necessary delegated authority to make decisions in respect of matters raised at such meetings.

Regular meetings of a general nature may be convened and chaired by the *Project Manager* as follows:

| Title and purpose                     | Approximate time & interval | Location                | Attendance by:                                              |
|---------------------------------------|-----------------------------|-------------------------|-------------------------------------------------------------|
| Risk register and compensation events | Weekly                      | On Microsoft Teams/MWP. | <i>Employer's and Contractor's Project management staff</i> |

|                                                                                                                                                                                            |                                                                          |                                              |                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------|
| Overall contract progress and feedback                                                                                                                                                     | Weekly                                                                   | On Microsoft Teams/MWP.                      | <i>Employer's and Contractor's Project management staff</i>                                          |
| Progress / Programming & Scheduling                                                                                                                                                        | Weekly                                                                   | On Microsoft Teams/MWP.                      | <i>Employer's and Contractor's Project management staff</i>                                          |
| Construction clarification meetings to evaluate resolutions to design related construction issues. This is inclusive of firming up construction drawings to being <i>As-Built</i> drawings | Ad-hoc                                                                   | On construction site                         | <i>Employer's design engineering team and Project manager. Contractor's Construction management.</i> |
| Construction progress and schedule review.                                                                                                                                                 | Weekly                                                                   | On Microsoft Teams/MWP/Mutually agreed site. | <i>Employer's and Contractor's Construction management, project management, and planners.</i>        |
| Commissioning Meeting.                                                                                                                                                                     | Daily (from commissioning start date to the end of commissioning period) | On Construction site                         | <i>Employer's and Contractors Commissioning Teams.</i>                                               |

Meetings are convened during working hours on Microsoft Teams/mutually agreed site.

Records of these meetings shall be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes and circulated by the person who convened the meeting for review and approval.

## 2.2 Documentation control

All documents supplied by the *Contractor* are subject to Eskom's acceptance. The language of all documentation is English.

The *Contractor* includes the *Employer's* drawing number in the drawing title block. This requirement only applies to design drawings developed by the *Contractor* and *Sub-Contractors*.

Drawing numbers are assigned by the *Employer* as drawings are developed.

All review documentation is submitted with transmittals. Any review information submitted without transmittals are considered rejected automatically.

The *Contractor* compiles a Master Document List (MDL) which contains a list of all documents issued for review, document number, document title, transmittal number, date of submission, overall document review status. The MDL is a live document; the *Contractor* issues an updated MDL within the progress report to the *Project Manager*.

*Documentation requirements:*

- Manufacturing: Quality Control Plans (QCPs), Inspection and Test Plans (ITPs), Material Specification sheets, Manufacturing methods and plans, etc.
- Construction: Construction/installation methods and plans, etc.

- Commission: System commissioning procedures, safety clearance documentation, pre-commissioning inspection reports, etc.
- Testing: All pre-commissioning tests, performance tests, acceptance testing and non-destructive testing, reports. All test procedures and methods can also be included here.
- Operating: Operating manuals and procedures.
- Maintenance: Maintenance manuals and procedures.
- Handover: All documents pertaining to the *Works* which could include all Manufacturing, Construction, Commissioning Testing, Operating and Maintenance documents (As-Built, As-Commissioned Documentation Package).
- Decommissioning: Decommissioning manuals and procedures (where applicable).
- Health and Safety: All necessary and regulatory health and safety procedures required for conducting the *Works*.
- Quality: Quality Control Plans (QCPs), Inspection and Test Plans (ITPs) and all other Standards, Processes and Procedures that are required to ensure technical integrity of Manufacturing, Construction, Commissioning Testing, Operating and Maintenance of the *Works*.
- Environmental: Environmental Impact Assessments (EIAs), Environmental Management Plans (EMPs) and all other regulatory Environmental documentation that are applicable when conducting the *Works*.

### 2.3 Health and safety risk management

The *Contractor* shall comply with the health and safety requirements contained in Annexure [REDACTED] to this Works Information.

In addition to the requirements of the laws governing health and safety, Eskom may have some additional requirements particular to the Works and the Working Areas for this contract.

The supplier/Contractor/tenderer is expected to comply to the following documents when working at/rendering a service to Eskom:

- Occupational Health and Safety Act 85 of 1993 and its Regulations (OHS Act)
- Disaster Management Act, no 57 of 2002.
- Safety, Health and Environmental requirements contained in the SHE Specification for Contractors.
- Eskom SHEQ Policy, Standards, Procedures, Guidelines, Specifications and Regulations as listed below:
  - Eskom Safety, Health, Environmental and Quality Policy: 32-727
  - Eskom Lifesaving Rules, Directive: 32-421
  - Eskom Procedure on Smoking: 32-36
  - Eskom Incident Management Procedure 32-95
  - Implementation of Occupational Hygiene management programme, Standard 240-42262670
  - Eskom Life Saving Rules, Directive: 240- 62196227
  - Eskom vehicle and driver safety management 32-93
  - Eskom vehicle specification 32-345
  - Eskom Contractor Health and Safety requirements standards 32-136
  - Employees' right of refusal to work in an unsafe situation 240-43848327
  - Eskom Waste Management Standard 32-245
  - Annexure B: Acknowledgement Form for Eskom SHE Rules and other Requirements

The Contractor requests all applicable Eskom procedures & requirements. The Contractor ensures safety awareness at all times through continuous training. The Contractor, at all times is responsible for the supervision of his employees, agents, Sub-Contractors and takes full responsibility and accountability for ensuring they are competent, compliant and aware of the legal requirements and other requirements and execute the Works accordingly.

The Contractor ensures that all statutory appointments and appointments required by any Eskom Regulations are made in writing and that all appointees fully understand their responsibilities and are trained and competent to execute their duties.

The Divisional/Regional Safety Risk Manager or his representative having jurisdiction over the Works must provide the relevant safety, health and environmental (SHE) criteria for incorporation into this Works Information. The SHE specification / scope must be signed off by the Divisional/Regional Safety Risk Manager or his representative confirming that the applicable safety criteria have been considered.

## **2.4 Environmental constraints and management**

The *Contractor* shall comply with the environmental criteria and constraints stated in Annexure \_\_\_\_\_. All waste introduced and/or produced on the Employer's premises by the Contractor for this contract is handled in accordance with the minimum requirements for the Handling and Disposal of Hazardous Waste in terms of Government Legislation as proclaimed by the Department of Water Affairs and Forestry and Employer's environmental requirements.

All environmental incidents are reported to the Employer within 24 hours of such occurrence. All environmental incidents occurring on the Project Site (or on any other places, if any, as may be specified under the Contract as forming part of the Site) are recorded, detailing how each incident was dealt with in an Environmental Incident register.

The Contractor shall construct and/or implement all the necessary environmental protection measures in each area before any production work will be allowed to proceed. The Employer may suspend the Works at any time in terms the Conditions of Contract should the Contractor, in the Employer's opinion, fail to implement, operate or maintain any of the environmental protection measures adequately.

The Contractor ensures that all goods, services or Works supplied in terms of the Contract comply with all applicable environmental legislations (National Environmental Management Act, 1998 [Act No 107 of 1998]). The Contractor is responsible for keeping the work area clean of any environmental waste.

The Contractor shall comply with all relevant applicable laws, environmental legislation and regulations, conditions of environmental approvals, environmental management plans, and Employers Policies and Procedures. The Contractor must submit an Environmental Policy demonstrating commitment to protection of the environment. The Environmental Policy shall form part of the SHE file submission. Upon the Employer's approval, the Contractor shall immediately implement the policy and any amendments and keep it in operation for the full duration of the Contract. The policy shall be communicated to all personnel and copies of the policy shall be prominently displayed at all places of work.

The Contractor shall determine and develop the aspects and impacts register related to the scope of work. All aspects of the planning, manufacturing, pre-construction, construction and operational phases shall be considered.

## **2.5 Quality assurance requirements**

The Contractor complies to the following documents when working at/rendering a service to Eskom:

- 240-12248652 - List of Tender Returnable/Quality Requirement Document
- 240-68099512 - FORM A: Tender & Contract Quality Requirements for QM 58 and Quality Requirements for ISO 9001 Standard
- 240-105658000 (QM 58) - Supplier Quality Management: Specification
- 240-109253698 - Contract Quality Plan (CQP)
- 240-109253302 - Quality Control Plan (QCP)/ Inspection and Test Plan (ITP)

After the acceptance of the construction drawings the Contractor submits the associated construction Method Statements and relevant QCP/ITP for acceptance and determination of intervention points prior to construction. Failure to comply with an accepted Method Statement/QCP or ITP may result the issuing of a NCR, rejection of the Works as well as the withholding of payment until the appropriate remedial actions have occurred.

## **2.6 Programming constraints**

The *Contractor* submits a single Project Implementation Plan (PIP) that incorporates the scope of work in its entirety.

The project key dates shall be incorporated into the program.

The *Contractor* ensures the project does not slip but rather invariably adheres to the stipulated completion timelines.

## **2.7 Contractor's management, supervision and key people**

The Contractor submits a detailed project-specific organogram. It shall be inclusive of the construction workforce, showing the staff complement, with telephone numbers and E-mail addresses of all key project personnel. Reporting structure of internal divisions as well external Sub-Contractors are also indicated on the organogram.

## **2.8 Invoicing and payment**

Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Project Manager's* payment certificate.

The *Contractor* shall address the tax invoice to Eskom Holdings SOC Ltd and include on each invoice the following information:

- Name and address of the *Contractor* and the *Project Manager*.
- The contract number and title.
- *Contractor's* VAT registration number.
- The *Employer's* VAT registration number 4740101508.
- Description of service provided for each item invoiced based on the Price List.
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT.
- (add other as required)

Add procedures for invoice submission and payment (e.g. electronic payment instructions)

## **2.9 Insurance provided by the *Employer***

Refer to the relevant clauses of the Contract. For all Employer Insurance related queries, contact:

- Cluster Manager
- Eskom Insurance Management Services
- Eskom Holdings SOC Ltd
- Megawatt Park
- 011 800 2714

## **2.10 Contract change management**

The Employer instructs changes to the scope at any time, each instruction sets out the change and the date on which it becomes effective; and is issued to the Contractor in writing to be valid.

## **2.11 Provision of bonds and guarantees**

The form in which a bond or guarantee required by the *conditions of contract* (if any) is to be provided by the Contractor. It is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

The *Employer* may withhold payment of amounts due to the Contractor until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the Contractor by the Project Manager to receive and accept such bond or guarantee. Such withholding of payment due to the Contractor does not affect the Employer's right to termination stated in this contract.

## **2.12 Records of Defined Cost, payments & assessments of compensation events to be kept by the Contractor**

The Contractor shall maintain accurate records of all cost related documents, in the event that the Project Manager may request such records.

## **2.13 Training workshops and technology transfer**

Not applicable.

# **3. Engineering and the Contractor's design**

## **3.1 Employer's design**

### **3.1.1 Electrical Equipment, Systems Design and requirements**

The Contractor ascertains to obtain an Electrical Detailed Design report, and all its outputs, i.e. technical construction drawings encompassing wiring diagrams, cable routes (where required), and cable trench layouts prelude to the Works. Manufacture, factory testing, supply, delivery to site, installation, commissioning, testing, handing over in complete working order, a new equipment according to clauses 3.1.1.1 - 3.1.1.8 of this report and the detailed. The Contractor shall ensure that all peripheral work, necessary to fulfil electrical scope such as cable splicing, cable termination etc, is carried out to ensure the completeness of the Works.

#### **3.1.1.1 Power Cables and Conductors**

Neutral busbars shall be at least 50% of the cross-section of the phase busbar, whereas the earth busbar shall be as per table 6.25 of SANS-10142-1 standard.

The clearance between the phases and phase to earth busbars shall be more than 8mm whereas the creepage distance shall be more than 16mm.

Wiring encompassed in the distribution board shall be installed as per the Employer's designs and shall be as per the wiring diagrams on lighting distribution board assemblies' sheet 2 of 2 drawing number: 0.66/837.

Jumper cables' cross-sectional areas, where used, shall be commensurate with current carrying capacities as set out on SANS 10142-1 Tables 6.2.

The selected power cable extending from source (external power from distribution) to load (ERE property) shall either be terminated on a mini-substation or low-voltage board or equivalent to the property DB(s) and its specification is as follows: Copper 3 and 4 core PVC Insulated PVC bedded SWA PVC sheathed 600/1000 V cable, it shall be as designed and installed as per the Employer's preferred installation method. Its cross-sectional area/size and length is provided in the electrical design.

Low Voltage power cabling Employed by *Contractor* shall comply to the following requirements: The requirements of SANS 10142-1, SANS 1507, SANS 1339, and SANS 10198-1 shall be observed and adhered to.

All power supply cables offered shall carry valid product type tests in accordance with the relevant SANS standard.

A copy of all relevant type test reports and the required tender returnable documentation shall be submitted at the time of tender enquiry submissions. Where applicable for local type tested cables, the SANAS accredited product certification body mark scheme.

The power cable types are designated in accordance with Eskom standard cable codes detailed on the following drawing: 0.00/1310.

Power supply cable sheath shall be black with the appropriate cable trace colour reflecting on the cable sheath.

Cables outer sheath shall be legibly marked in accordance with respective cable standards (SANS 97, SANS 1339, SANS 1507, and SANS 1574).

Additional information to appear on the outer sheath: voltage level, cross-sectional area in  $\text{mm}^2$ , name of cable manufacturer and SABS specification to which the cable is manufactured, even if some portions of cable make-up deviate from the specification such as SANS 1507.

Regarding the fire performance requirements of cable, a provision is granted by the *Employer* to assess the applicable cable trace colour selection in the event of cable buried underground and the other part goes into an open-air environment. Should a greater chunk of power cable be buried and a smaller portion surfaces, the prevailing cable trace colour remains that of a one possessing a greater chunk. See electrical design.

The power supply cable shall be steel wire armoured for underground application, and portions surfacing above ground shall be supported in cable racks, trunking and supports where applicable. This is to provide mechanical support to electrical power cables.

Further low voltage power cable requirements, markings, cable layout, racking, laying, sleeve pipes, termination of cables and cores, cable route markers, transportation, storage, testing and commissioning, shall be according to **240-56227443 Generation Requirements for Control and Power Cables for Power Station Standard**.

### **3.1.1.2 Lighting**

The following standards shall be applicable to the emergency lighting installation: SANS 10114-2, SANS 1186-3, SANS 1464-22, SANS 10114-1, SANS 10400, SANS 10142-1 and OHS Act 85 of 1993.

Emergency lighting shall be provided to enable people to exit safely from an area by providing visual information on the direction and exit points and safety equipment.

High risk task area lighting shall be provided to enable people to safely shut down potentially dangerous equipment or processes during a failure of the main power supply.

Light fittings to be employed on ERE properties shall be as per lighting design and prior bulk installations, the *Contractor* shall submit a sample on all types for laboratory testing. Should the sample meet the minimum photometric requirements as set forth in the small power and lighting standard (240-55714363), the luminaires will be accepted for installation, however, should they flunk the standard, they will be rejected as failed.

The *Contractor* shall conduct, appointing a competent person, a post installation illumination survey according to SANS 10114 part 1 and 2 - Interior lighting - Artificial lighting of interiors and Emergency lighting, SANS 10098 part 1 and 2 - Public lighting - The lighting of public thoroughfares and the lighting of certain specific areas of streets and highways, and SANS 10389 part 1 and 2 - Exterior lighting - Artificial lighting of exterior areas for work and safety and Exterior security lighting. The minimum Illuminance levels measured in each respective area shall be presented in a tabulated format.

The *Contractor* to perform this survey as per the standard post project execution, compile a comprehensive illumination survey formal report as part of work execution and submit it to engineering and/or project management for review and acceptance.

The balance of the lighting requirements, interior lighting, exterior/security lighting, including photometric control units for lighting, switches, conduits etc, shall be as per **240-55714363 Eskom Generation Power Station Lighting and Small Power Installation Standard**.

#### **3.1.1.3 Socket outlets**

Only 16A three pin sockets (two pole and earthing contact type) shall be used, unless otherwise specified by the *Employer* on the design drawing.

Earth leakage protection on socket outlets is compulsory except where specified otherwise.

The anticipated load of a circuit that feeds socket outlet shall not be in excess of 5kW.

The balance of the requirements with regards to socket outlets for single phase systems including dimensions, ratings, positioning, form of power, shall be as per SANS 10142-1, and relevant parts of SANS 164.

#### **3.1.1.4 Distribution boards**

All Distribution Board assemblies:

- Shall comply with SANS 61439-4.
- Shall be in accordance with the types as specified, be constructed according to the detail design and DB standard drawings: 22.66/837 sheet 3 of 3, approved Eskom drawing.
- Shall have labels with KKS coding mounted on the main cabinet.
- Shall have centrally fitted door locks.
- Hinges shall be bolted internally.
- Doors shall have rubber seal around inside edge for water proofing.
- DBs shall be manufactured from steel and equipped with IP55 and IP65 ingress protection ratings for indoor and outdoor applications, respectively.
- For locations classified as hazardous (HAZLOC), DBs shall conform to SANS 10108.
- Metal work shall be protected against oxidation, corrosion and damage anticipated under site conditions, the final finish shall be "light orange" as per SANS 10142-1 and "signal red" for essential 230/400V Distribution Boards.

- Shall be equipped with front access.
- They shall be glanded from the bottom only i.e. cable entries are only from the bottom.
- DB's width is contingent on the number of circuits, this will be furnished in the detailed design.
- DB circuits loading shall be (as in the case of their design) evenly distributed across the three phases, the difference shall be, at most, 10%.

Any construction or standard of a distribution board proposed, as an alternative to the specified, shall have prior approval from the Employer.

All incomer breakers on three phase distribution boards shall be rated a minimum of 32A with a minimum fault current level of 10kA.

The distribution boards shall be appropriately IK rated, IK 05 for indoor use and IK 07 for outdoor use, as per IEC 62262, and shall be constructed to withstand electrical and thermal stresses.

The minimum thickness for the plate steel shall be 1.6mm. Cubicle doors shall be positively drawn closed onto seals by means of padlock-lockable lever operated catches. Perforated foam type seals shall not be provided. The distribution board shall be provided with an internal equipment cover plate in accordance with SANS 10142-1. The cover plates shall not be used to keep components in position. The cover plates shall be provided with hinges for opening/closing and shall be provided with a square key lock.

All busbars, wiring, terminals etc, shall be insulated adequately and supported to withstand maximum current stresses.

Clearly engraved labels shall be mounted on or below every device. The wording of the labels shall be in English. Flush mounted boards shall be installed with the top of the board 2,0m above the finished floor level.

#### **3.1.1.5 Switchgear**

The circuit breakers shall be mounted within the distribution boards to give a flush front panel.

A circuit-breaker rated in accordance with the anticipated diverse load, and with a symmetrical short-circuit breaking capacity commensurate with the prospective symmetrical fault current shall be installed at the source end. See exact values on electrical design on *other*.

#### **MCCB requirements:**

- MCCB shall comply with SANS 556-1 and SANS 60947-2. The former SANS Standard takes precedence over the latter.
- MCCB shall be triple pole, with or without neutral air-break devices, assembled as an integral unit, mounted in a supporting and enclosing moulded case of insulation material.
- MCCB shall be fitted with flash barriers on the line side.
- Where neutral links are specified, these shall be of the bolted or withdrawable type, accessible from the front of the unit.
- The breaking capacity of the MCCB shall be at least 10 % greater than the prospective fault current at its point of installation of the supply system (reiterated with detail).
- MCCB's shall be provided with independent manual closing and tripping devices in accordance with SANS 60947-2.
- MCCB shall meet the specified safety integrity level (SIL) requirements as a minimum. A confirmation that safety requirement is met must be provided with tender submissions in the form of certification, datasheet, specification.
- Further MCCB requirements, including indication devices, MCBs, isolation, ratings, auxiliary contacts etc, shall be according to **240-56227516 LV switchgear and control gear assemblies and associated equipment for voltage up to and including 1000V AC and 1500V DC standard.**

#### **3.1.1.6 Trenching**

Trench depth or depth for cable burial, in the case of Low Voltage (LV) power cables, (where applicable) shall be 500 mm as selected from SANS 10142-1 installation method. The width shall be 450 mm. This is extremely crucial as it has a bearing on the derating factor(s) affecting the current load and eventually the electrical design.

#### **3.1.1.7 Earthing**

The Employer's system earthing of preference is TN-S system and therefore enforced.

All earthing *Works* for electrical installations shall comply to SANS 10142-1, earth rods SANS 1063 4.2.1, 240-56356396 Earthing and Lightning Protection Standard and 0.54/393.

#### **3.1.1.8 Certificate of Compliance**

Upon completion of the *Works*, full verification testing shall be carried out on the installation(s) and the Employer's representatives shall be invited to witness at the testing phase. At least 12 types, according to the installation rules, of tests shall be performed and recorded on the recording sheets.

Inspection and Testing of electrical installations are dealt with in the Electrical Installation Regulation (EIR) Regulation 7 *"Certificate of Compliance (CoC) – every installation shall, during erection and/or on completion and before being put into service, be inspected and tested to verify, as far as is reasonably practicable, that the requirements of the Regulations / Standards have been met"*.

SANS 10142-1 Clause 8 has the detailed methods of testing required. The tests shall be carried out in the sequence indicated. All measurements and test results shall be recorded on the Inspection and Test Report (ITR). Additional test recording sheets may be appended on the ITR where required.

A certificate of compliance shall then be tendered to the Employer's representative prior or during commissioning for review and submitted for acceptance as part of the handover packages at the completion of the *Works*.

### **3.1.2 Control and Instrumentation**

#### **3.1.2.1 General Requirements**

The *Contractor* shall be responsible for procurement/manufacture, supply, installation, testing, commissioning, of all equipment, instrumentation, controllers, wiring, and associated terminations for the following systems:

- Public Address (PA) System
- Fire Detection and Alarm System
- HVAC system Controllers
- Security and Access Control System
- Lifts and Escalators Control Interfaces
- Energy Monitoring system

All *Works* shall be executed in accordance with the approved project specifications, relevant SANS standards, and applicable Eskom standards as referenced in section 2.2.1.

#### **3.1.2.2 Installation and Integration**

The *Contractor* shall:

- Install all instrumentation, controllers, wiring, and cabling, including terminations
- Integrate subsystems with the BMS and existing site infrastructure
- Ensure all interface points are implemented as per the approved design
- Coordinate with other *Contractors* and stakeholders to avoid conflicts in system integration

All installation work shall be carried out following industry best practices and shall comply with relevant safety, environmental, and quality standards.

### **3.1.3 Mechanical**

**a. HVAC**

The *Contractor* to supply material as per design, the selected material shall be submitted to the employer for acceptance, the *Contractor* shall construct the HVAC equipment as per the design, the *Contractor* shall test balance and commission the HVAC equipment, the contractor shall meet all the requirement as outlined in Eskom document General Technical Specification for HVAC 240-102547991.

The scope will involve minor HVAC *Works* such as:

- Replacement of existing diffuser to new diffuser
- Repositioning of the diffusers
- Provision of compact/ single space HVAC equipment
- Adding controller or removing controllers
- Fresh air supply to single space
- Smoke extraction
- Fire damper
- Heat pumps
- Hot water boiler

**b. Applicable standards, specifications and guidelines to HVAC Works**

| Number        | Title                                                                                                                   |
|---------------|-------------------------------------------------------------------------------------------------------------------------|
| ASHRAE 15     | Safety Codes for mechanical refrigeration                                                                               |
| ASHRAE 62     | American Society of Heating Refrigeration and Air Conditioning Engineers. Ventilation for acceptable indoor air quality |
| ASHRAE 55     | Thermal environmental condition for human occupancy                                                                     |
| ASHRAE 52/76  | Standard test method for filters                                                                                        |
| ASHRAE G1     | Guideline for commissioning of air conditioning system                                                                  |
| 240-102547991 | Eskom General Technical Specification for HVAC Systems                                                                  |
| 240-143112846 | Heating Ventilation and Air Conditioning (HVAC) System Work Instruction                                                 |

**c. Fire Protection**

The *Contractor* to supply material as per design, the selected material shall be submitted to the employer for acceptance, the *Contractor* shall construct the fire protection equipment as per the design, the *Contractor* shall test balance and commission the fire protection equipment.

The scope will involve minor fire protection *Works* such as:

- Adjusting/moving of sprinkler within a space
- Providing of fire protection within a space such as gas system

**d. Applicable standards, specifications and guidelines to Fire Protection System**

| Number            | Title                                                       |
|-------------------|-------------------------------------------------------------|
| 240-54937450      | Fire Protection & Life Safety Design Standard               |
| 240-56737448      | Fire Detection and Life Safety Design Standard              |
| 240-56737439      | Fire Protection/Detection Assessment Standard               |
| ASIB 12th Edition | Twelfth edition rules for automatic sprinkler installations |

| Number     | Title                                                                     |
|------------|---------------------------------------------------------------------------|
| SANS 10287 | Design, installation, and maintenance of automatic fire sprinkler systems |

**e. Wet Services**

The *Contractor* to supply material as per design, the selected material shall be submitted to the employer for acceptance, the *Contractor* shall construct the protection equipment as per the design, the *Contractor* shall test balance and commission the fire protection equipment.

The scope will involve minor wet services *Works* such as:

- Provision of potable water to a space
- Replacement of piping
- Replacement of valves
- Replacement of pipe accessories (flow meter, pressure gauges, NRV, and CRV)
- Replacement of pumps

**f. Applicable standards, specifications and guidelines to Wet Services System**

| Number        | Title                                                                                                                         |
|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| 240-56030558  | Centrifugal Pumps Specification                                                                                               |
| 240-56356376  | On-Site Commissioning for Low Pressure Systems Standard                                                                       |
| 240-101712128 | Standard for the internal corrosion protection of water systems Chemical Tanks and Vessels and Associated Piping with Linings |
| 240-105020315 | Standard for Low Pressure Valves                                                                                              |
| 240-123801640 | Standard for Low Pressure Pipelines                                                                                           |

**g. Performance and testing of equipment**

The contractor shall conduct performance and testing of mechanical equipment using mostly non-destructive testing methods and produce reports for test, testing shall include:

- Flow measurement (Air and Water)
- Temperature measurement
- Wall thickness measurement
- Pressure measurements
- Power Measurements
- Overall, AHU, CRAC unit, Pumps, Fan, Chiller, Colling Tower performance

Testing and report should be compliant to ISO 9000 & 9001 requirement

**3.1.4 Architectural Design Requirements**

The *Contractor* to supply material, components and fixtures to construct and as per the design, best practices and manufacturer specifications. In certain instances, the supplier may lead the design component to ensure quality and material limitations are within bounds of what is to be achieved. The *Contractor* may be requested to supply 2 to 3 samples that meet the requirements together with this the *Contractor* to supply data sheets supporting mentioned item, the selected material shall be submitted to the employer for acceptance.

The *Contractor* is required to provide, install, construct all components from designs and according to best practices and standards in the built environment together with specific Eskom standards. The *Contractor* to note that in certain instances key directives will advance over the below specifications when certain material specification and degree thereof and or combination of materials to ensure compliance of design is in adherence to Part T: Fire protection and or as per Local Authority Approval. The result of the *Works* and/or objective is to be compliant with all legislation and to ensure successful certificate of occupancy furnished by the local authority.

▪ **Drywalls:**

To be built up as non-loadbearing only, members to be galvanized steel framing consisting of 63.5mmx0.8mm studs with minimum 400mm or 600mm as maximum studs spacing together with top and bottom tracks, or as per manufacturer recommendation.

Boards to be classed for a privacy layer or where the need arises, this to be Higher density aerated gypsum core that is silicone impregnated and encased and firmly bonded with strong paper liners, these boards are to be "1 piece structured " and not layered by the *Contractor*, *Contractor* to source this directly from the manufacturer. The board thickness to be 12.5mm or 15mm in thickness. These boards to be specified as non-combustible. The *Contractor* to ensure full boards are used to ensure noise transfer is minimal thus min 3000mm and 3600mm height boards to be used.

Bathroom boards to be moist specified. Certain manufacturers provide a surface that only needs a primer and paint to finish, with prepped/tapered joints or edges using joint tape, filler and fixing screws. *Contractor* to ensure smooth finish between joints as per manufacturer installation.

Final drywall composition to be built up to be 12.5mm+63.5mm+12.5mm OR 15mm+63.5+15mm. Cavities to be filled with non-combustible self-supporting tested to SANS 10177 Glass wool cavity bat with thickness of 1200mmx600mmx63mm. Furthermore, the glass wool cavity bat needs to ensure that the bat is SANS 428 Fire classification - A/A1/1 and EN 13501 - A1-S1, D0 certified.

Fitment of batting needs to be snug fitted between studs with no gaps and needs to be floor to ceiling height in continuous lengths.

For "extension" or additions the drywalling needs to match existing and if they are layered with gypsum boards to be minimum of 9mm thickness, if no tapered boards are used with the same studs and spacing with bottom and top tracks this to ensure uniformity. The same specification for batting to be installed as above.

Routing needs to be internal and to be in minimum 20mm or 25mm conduits to ensure future cable work. The selection size will depend on run needs of spaces.

▪ **Brickwork:**

Bricks to be selected based on existing to match in size and colour to ensure uniformity when amending or for proposed new work as well as specified according to the exposure zone and or directive of design and in the absence of alternative, approach brickwork with;

- NFP for general masonry work above damp-proof level to be plastered.
- NFX for masonry exposed to damp or in contact with the ground like foundation walls, or manholes and/or for "fair" face work
- Burnt clay masonry units: SANS 227
- To be standard, imperial size is 222mm long x 106mm wide x 73~76mm high with a mass of between 3.0kg ~ 3.5kg but as first preference to match in size when additions occur
- Concrete masonry units: SANS 1215

Masonry walls to be as per SANS 10400-K and B, where any cutting or demolishing to be carried out, clear method statement and assessment to be provided for to ensure structural integrity and safety. Supporting floor elements are of cavity construction or have a nominal thickness of not less than 140 mm; the storey height

measured from floor to soffit of the floor above does not exceed 3,3m and design to ensure lateral support is sufficient. In accordance with SANS 10400-b, the imposed load in the following occupancy classes and zones as per section (d) offices for general use and offices with data-processing and similar equipment; does not exceed 3,0 kN/m<sup>2</sup> and other. Lintels shall be provided above all window and door openings in accordance with the requirements of 4.2.9.

Prior approval to be gained from the Employer before any work commences. All mortar should be class 'ii' that complies with the requirements of SANS 2001-CM1. The compliance to SANS is not limited to this specification only but to it as complete adherence to best practices and legislation.

- **General re-enforcement within brickwork:**

Brick force selection to be 2.8mm diameter wire in widths of 75mm, 150mm or 230mm for brickwork respectively, the brick widths to consider brick force width selection and to ensure no brick force is exposed outside of the mortar joints ensuring at least 15mm of cover is provided. Brick force to be continuous and to be rolled and free of any corrosion.

Where cavity walls are selected, ties to be specified according to the exposure zone, spacing to be according to SANS 10164 (2,5/m<sup>2</sup> or 600 mm vertical, 660 mm horizontal, staggered) and spacing around openings and construction joints to be <300 mm vertical

- **Doors – Timber:**

Application to be for commercial use and to be semi-solid/medium duty they ought to be double wood veneered (each side of door) door and mounted to natural anodised aluminium frame. For Fire Doors the appropriate class doors to be selected according to the fire rating, position and function.

Light Maple - Full veneer – or veneer to match and/or as per the client specification

Door heights and style to match that of existing to ensure uniformity

Single Leaf;

- 813mm Wide x 2032mm Height with 44mm thickness option or.
- 813mm Wide x 2400~2600mm Height with 44mm thickness option

Double Leaf;

- 1630mm Wide x 2032mm Height with 44mm thickness option or.
- 1630mm Wide x 2400~2600mm Height with 44mm thickness option

For exterior doors the appropriate exposure class to be selected and to be solid timber doors, where fire doors are selected this to be classed for the correct minute rating and position/location

- **Ceilings:**

Ceilings to adhere to fire resistance in minutes, tested to SANS 10177, for Airborne sound insulation rating to conform to SANS 717/10218, any deflection requirements as per South African Building Interior Systems Association (SABISA). Ceilings to have structural performance requirements to ensure the design and selection can safely support all anticipated loads, such as luminaires, smoke detectors, air grilles, wind loads, point loads, audio speakers, microphones, acoustic baffles and possible wayfinding and signage.

For existing work Ceiling tiles to match existing Lay-in style exposed grid suspended ceilings or gypsum board skimmed ceilings in commercial buildings.

For prozed work options of 600mmx600mm or 600mmx1200mm with all suspension, Cross and Tee fittings with 25mmx25mm shadow line/plaster trim cornice

Or,

Gypsum 9.4mm boards skimmed with shadow line 12.5mm minimum and maximum of 25mm x 25mm cornice as per below also known as plaster-trim

- **Cornices:**

25mmx25mm shadow line/plaster trim or 25x60~75mm High density polystyrene cornice cove cornices only for infill amendments that match or 25mmx75mm Gypsum cove cornices only for infill amendments that match.

- **Surface/Subfloor:**

25mm granolithic screed and or depending on application need of self-levelling screed with surface hardener of 3mm to 10mm to be applied with occupancy class traffic in mind.

- **Flooring:**

Floor surface integrity to be assessed, provision to be made for removal of loose substrate, surface prepped and filled with appropriate filling admixture, bonding agent followed by self-levelling screed that includes a surface hardener where necessary. *Contractor* to provide a surface free tripping hazard and to allow for any uneven surface to be smoothed and flattened to allow for appropriate laying of commercial grade flooring and adhesives,

- **Carpet Tiles:**

Flooring finish to match existing carpet tiles or in lack of, *Contractor* to provide 500mmx500mm with thickness of  $\pm$  7mm to 8.5mm, classed as: heavy commercial carpet tiles, to be made from stain-proof miracle fibre (polypropylene) with Resinbac/Nexbac backing with a Fire index 2 and 3 as per SANS 10177-4 respectively. Tiles to be laid in accordance with SANS 10186 fitting code of practice. To be installed in tessellated format. Tiles to be laid with adhesives as that, that are in accordance with the manufacturer's recommendations.

- **Tiles:**

Large format 1200x600 Vitrified tiles to be laid in accordance with a) ceramic wall and floor tiles: SANS 1449 b) porcelain tiles, fully vitrified: SANS 13006, all to be laid in accordance with SANS 10107

- **Linoleum:**

2.5mm thickness for commercial use, with appropriate adhesive, seams to be welded accordingly as per manufacturers details.

- **Vinyl:**

2.5mm thickness for commercial use, with appropriate adhesive, seams to be welded accordingly as per manufacturers details.

Where Linoleum or Vinyl flooring is selected, tiles may be opted for where the Employer specifies or where functional occupancy could dictate frequent replacement needs.

- **Specialised Areas:**

Gymnasiums

High impact areas to have heavy commercial type resistant and easy to clean flooring tiles to be 1000mmx1000mm and minimum thickness of 20mm, Flooring to be non-toxic, odour-free, anti-slip and stain resistant, possible floor hardener with leveller might be needed to repair and ensure level and hard surfaces. Other areas to have the same level of quality but to be 1000mmx1000mm with a thickness of 15mm high density rubber tiles with more compressibility for less impact needing areas. Rolled rubber flooring may be selected with the same level of specification but with minimum thickness of 10mm and to be in continuous roll length of minimum 5meters, ultimate selection to run length of space or area need.

Courts:

Flooring for courts to be sprung board design consisting either of Hevea rubber flooring or beech, all hardwood timbers to be machined to existing or new perimeters. For existing work, timbers to match. Repairs to the front playboard wall or "tin" might be needed, with correct plaster and finishing or composite panel or boarding and specialised coating for squash courts specifically. For plaster the faces to be plastered must be hard, strong,

clean and free of dust and other loose material. They should be as plane as possible: within  $\pm 3$  mm of planeness and verticality.

Possible waterproofing might be needed for moist area or problematic areas. A polymer emulsion, based either on styrene butadiene rubber or acrylic, may be included in mixes for the bonding coat, undercoat and finishing coat to assist in workability, shrinkage, surface hardness, adhesion and to minimize tendencies to crack. Minimum plaster thickness to be 20mm for new work, generally consisting of your bonding coat and your final work coat, for existing work possibly 7mm to 25mm and to be carefully built-up to adhere to adhesion integrity.

Isolated repairs may be done as well with correct cutting out of areas, dedusting and bonding methods etc. For refurbishment approach areas allowance to be made for sanding and resealing of boards will be needed and isolated wood infill areas, repainting or taping of game lines. Should frameless glazing be required, the same minimum requirements as above however with additional criteria for courts. Generally, this is seen as specialised *Contractor* work with specialised materials.

#### Studio Type:

Not too low impact areas, such as Pilates, aerobics and wellness spaces such as physiotherapy and occupational areas to be 22mm thick solid wood timbers in springboard design for certain functional areas and others to be laid on underlay as per general timber flooring. Certain high sweat or occupational areas and other might need vinyl or linoleum approach as specified above

- **Frameless Glazing panels (interior):**

Frameless glazing facades 2025mm in width x 3240mm height (floor to ceiling cut to size) Glazing to be minimum 8.38mm laminated sheets with clear PVB interlayer, all panels to be installed and to be manufactured to SANS.

8.38mm PVB Clear Laminate panels as minimum and/or specialist to advise superior design, height of panels to be floor to ceiling of 3240mm, to be confirmed on site. Each panel to be supported by 2 sides (Floor & ceiling) as a minimum. The necessary support structure to be designed to ensure its integrity. All panes to be butt jointed with no silicon or fil, A glass fin may be necessary to provide the support. Specialist to advise.

The performance of safety glazing material shall be in accordance with the requirements of SANS as a whole and specifically 1263-1 and 10137. The individual panes of safety glazing material shall be permanently marked by the installer in such a manner that the markings are visible after installation.

- **Roofing:**

#### Concrete roof tiles:

420mmx332mm tile sizes and or 437mm x 257mm tile sizes with minimum 1.5mmx1500mm wide under tile membranes that conform to Part T and all tiling and fixing to comply with SANS 10062 and 10400L code of practice.

- **Clay tiles:**

420mm x 332mm with minimum 1.5mmx1500mm wide under tile membranes that conforms to Part T and all tiling and fixing to comply with SANS 10062 and 10400L code of practice.

- **Roof sheeting:**

Pierced fixing inverted Box Rib/IBR profile sheeting with rib height of 37mm and sheet widths of 686mm and minimum thickness of 0.5mm, 0.53mm and 0.58mm and to be Galvanised with a minimum micron of 200 and or aluminium and zinc coated with a minimum micron of 150, sheets to be factory colour coated on side as a minimum and to be fixed with class 2 roofing screws as per manufacturer.

For more concealed options, a non-pierced sheeting profile may be selected with the same minimum coatings as above with appropriate specialized fixing.

- **Sisalation and insulation:**

To be selected in unison with the complete roof built up and its surrounding structure with its occupancy class in mind ensure compliance with Part T and SANS XA calculations.

Mineral wool with minimum 63~100mm x 600mm batts to withhold its structure and not collapse to be classed as non-combustible or with minimum 1.5mm strainer wires fixed wire to be specified according to exposure class and to be fixed to purlins.

▪ **Barge Boards:**

200mmx80mm or 10mmx150mm or 10~12mmx225mm Fibre Cement boards or 32mmx 220mm Timber with S5 grading.

▪ **Rainwater goods:**

75mmx110mm uPVC gutters with 75mmx75mm square uPVC downpipes or 75mm diameter downpipes and all its fixing, closing hardware. Certain areas where aluminium box gutters, downpipes are needed due to matching the same material specifications as per roof sheets above specified to be used. Generally, gutters to be 150mm and 75x100mm rectangular downpipes with same material hardware.

Both system types to be according to roof size and discharge rates calculations.

### **3.1.5 Civil and Structural Engineering Design**

All Civil and Structural designs are in accordance with the following *Employer's* Design Standards:

- 240-56364535: Architectural Design and Green Building Compliance Manual
- 240-56364545: Structural Design and Engineering Standard
- 240-107981296: Constructability Assessment Guideline
- 240-85549846: Standard for Design of Drainage and Sewerage Infrastructure

The above standards include compliance with:

- SANS 10100-1: The structural use of concrete (specifically Part 1: Design)
- SANS 10160 (All Parts): General Procedures and Loadings to be Adopted in the Design of Structures
- SANS 10162: The structural use of steel
- SANS 10163: The structural use of timber
- SANS 10164: The structural use of masonry
- SANS 10400 (All Parts): The application of the National Building Regulations

## **3.2 Parts of the works which the *Contractor* is to design**

### **3.2.1 Civil and Structural**

The *Contractors* design responsibilities, where applicable, are noted in Section 3.6.3.

### **3.2.2 Electrical**

Lifts (where required and applicable):

- a) Design, manufacture/procure, install and commission passenger lift, where required, according to SANS 50081-20 safety rules for the construction and installation of lifts - lifts for the transport of persons and goods. The *Contractor* shall ensure the lift complies with the following safety requirements and protective measures coupled with verification of the safety requirements and protective measures:

- Well, machinery spaces and pulley room.
  - Landing doors and car doors.
  - Car, counterweight and balancing weights.
  - Suspension means, compensation means, and related protection means.
  - Precaution against free fall, excessive speed, unintended car movement and creeping of car: inclusive of safety gear and its tripping means.
  - Guide rails.
  - Buffers.
  - Life machinery and associated equipment.
  - Electric installations and appliances.
  - Protection against electric faults, failure analysis, electric safety devices.
  - Controls – final limit switches – priorities.
  - Technical compliance and documentation.
  - Verification of design.
  - Examination and tests prior putting into service.
- b) Moreover, design rules, calculations, examinations and tests to lifts components shall conform to SANS 50081-50 safety rules for construction and installation of lifts – examination and tests.
- c) The general scope of *Works* will be for the *Contractor* to design, supply and install new equipment as follows: New gearless machine to be installed in the machine room, micro-processor controller, regenerative VVVF drive, shaft information equipment, VVVF car door operator, heavy duty car door, heavy duty landing door tracks and rails, electronic door protection, car operating panel, landing buttons and signalization, top of car inspection control unit, shaft and car lighting (existing lighting to conform to SANS1545), and electrical wiring;
- d) Furthermore: travelling cables, new energy efficient car lights and emergency lights, floor plate shall be non-slip diamond floor plate according to SANS, intercommunication system (5 way) to be installed, painting of surrounding areas upon request, safety and compliance reports: Annexure A and annexure B Compliance Certificates, Emergency Alarm System: heavy duty alarm siren for the top of the lift car and on all landing floors, Signals to be incorporated into landing button face plates on all landings: “Landing door left open”, “Car here signal”, “Car out of service”.

For the balance of the electrical requirements: The *Contractor* receives and accepts designs from the Employer and design output documentation such as SLDs for construction and then redlines the electrical schematics to yield *As-built* drawings

### **3.2.3 Controls and Instrumentation**

For new installations where no BMS or related subsystems currently exist, the appointed and qualified BMS *Contractor* shall be responsible for providing comprehensive and detailed system designs for the employer's review and approval. The scope of work shall align with the requirements discussed during clarification meetings and site visits. All designs must comply with the standards and procedures outlined in Section 2.2.1.

The *Contractor* further designs the required interfaces for the third-party systems where applicable.

For all the designs and new *Works*, the *Contractor* shall provide training to all relevant departments.

#### **3.2.3.1 Design and Engineering requirements**

The *Contractor* shall be fully responsible for the detailed design of all systems and components within the scope of work:

- Preparation of detailed system schematics and layouts
- Specification and selection of equipment and devices
- Integration of new systems with existing infrastructure
- Incorporation of all interfaces identified during site inspections, site walks, and clarification meetings

**The design shall ensure:**

- Full compliance with applicable regulatory and safety standards
- Seamless integration between subsystems and the overall Building Management System (BMS)
- Optimization of energy efficiency, reliability, and system performance
- Appropriate communication protocols are used during the execution of the work.

The *Contractor* shall submit design drawings, calculations, and specifications for review and approval prior to commencement of installation.

### **3.2.3.1.1 Power Supply Requirements**

The *Contractor* shall be responsible for the design, provision, connection, and testing of all power supplies required for the operation of the BMS and associated subsystems.

#### **▪ Power Source and Distribution**

Each subsystem shall be connected to a dedicated, stable power source from the designated DB (Distribution Board).

Power distribution shall include dedicated circuit breakers and labeling for all BMS components.

All panels, controllers, and servers shall be connected via isolators to allow safe maintenance and shutdown.

#### **▪ Uninterruptible Power Supply (UPS)**

The *Contractor* shall ensure critical subsystems are powered by a UPS backup to maintain uninterrupted operation during power outages.

The following systems must have UPS-backed power:

- Fire Detection and Alarm System
- Security and Access Control System
- PA System
- BMS Servers, Network Switches, and SCADA Workstations

UPS capacity shall provide a minimum of 30 minutes runtime at full load, unless otherwise specified.

#### **▪ Power Quality and Protection**

Install surge protection devices (SPDs) at critical panels and controllers.

Provide automatic changeover switches (ATS) where redundancy is required.

Ensure cable sizing and voltage drop calculations are performed according to SANS 10142 and Eskom specifications.

Sensitive electronics shall be protected with RCDs and voltage stabilizers if required.

#### **▪ Earthing and Bonding**

All controllers, panels, racks, and metallic enclosures shall be earthed and bonded per SANS standards.

Equipotential bonding between the BMS and power distribution shall be verified and documented.

#### **▪ Power Supply Labelling and Documentation**

All DBs, circuits, breakers, and panels powering BMS components shall be clearly labeled.

Submit power distribution drawings showing:

- Circuit IDs
- Cable sizes and lengths
- Protection ratings
- UPS connections
- Include these drawings in the final as-built documentation

### **3.2.3.2 Installation and Integration**

The *Contractor* shall:

- Install all instrumentation, controllers, wiring, and cabling, including terminations
- Integrate subsystems with the BMS and existing site infrastructure
- Ensure all interface points are implemented as per the approved design
- Coordinate with other *Contractors* and stakeholders to avoid conflicts in system integration

All installation work shall be carried out following industry best practices and shall comply with relevant safety, environmental, and quality standards.

### **3.2.3.3 Documentation and As-Built Deliverables**

The *Contractor* shall prepare, maintain, and submit the following updated documentation throughout the project lifecycle:

- Updated wiring diagrams and termination schedules
- Configuration and programming documentation
- Operation and maintenance (O&M) manuals
- Test reports and commissioning certificates
- Submit a Decommissioning Report including:
  - List of all decommissioned equipment
  - Final route of removed cabling and panels
  - Disposal certificates for hazardous electronic waste
  - Update as-built documentation to reflect the final system configuration after decommissioning.

### **3.2.3.4 Decommissioning Requirements**

Where existing equipment, controllers, cabling, or panels are rendered redundant by the new installation, the *Contractor* shall:

- Safely disconnect, remove, and dispose of all redundant equipment, devices, and cabling.
- Ensure all power supplies, circuits, and terminations are isolated and clearly labeled.
- Remove obsolete panels, junction boxes, and terminations from service.
- Ensure minimal disruption to operational systems during decommissioning activities.

### **3.2.3.5 Environmental and Regulatory Compliance**

All decommissioning work shall comply with:

- SANS environmental standards
- Eskom waste management policies
- National environmental regulations on electronic waste and hazardous materials disposal
- A Disposal Certificate shall be provided for any equipment containing hazardous materials.

### **3.2.3.6 Testing and Commissioning**

The *Contractor* shall perform full system testing and commissioning in accordance with approved procedures. This includes:

- Verification of correct installation and configuration
- Functional testing of each subsystem and integrated interfaces
- System performance validation and reliability tests

- Final acceptance testing witnessed by the Employer or its representative

### **3.2.3.7 Training and Handover**

Upon completion, the *Contractor* hands over the completed work which shall include all certificates, software licenses and warranties.

### **3.2.4 Architectural**

Specialized components like fire doors, frameless glazing, curtain walling and roof truss designs will be according to the designs of said supplier and or manufacturer or specialised fitter who will receive 'base' designs from the employer.

### **3.2.5 Mechanical**

Allowance of design of mechanical system HVAC, Water and Fire Protection on and as required bases, based on the concept design received from the employer, design shall meet requirement of the employer, as well as local and international standards as documented on section 3.4.1.3 of this document.

### **3.2.6 Security requirements**

The project includes requirements for an Integrated Physical Security System comprising a perimeter fence, non-lethal fence on top, Access Control Systems, CCTV System, Intrusion Pre-detection System, Alarm System, public address (PA) and interface to the PSIM System and IT infrastructure.

The *Contractor* shall design, supply, develop user documentation, perform testing, and deliver, install, and commission the Physical Security System and associated equipment (hardware/software etc.) at ERE campuses according to the associated technical specifications/standards.

The appointed *Contractor* for any Security System will be responsible for the following:

- Produce designs for the Integrated Security System. The designs must include details for the Access Control System, CCTV System, Intruder Detection System, Alarm System, Public Address System and PSIM System (including IT Infrastructure). The design must also cover the integration of these different systems into an Integrated Security System.
- Present the proposed designs to the ERE Security Team for acceptance.
- Installation and configuration of security LAN Infrastructure (Involving Eskom IT).
- Installation, configuration and commissioning of the CCTV System in totality on site as per Eskom Standard (240-91190304).
- Installation, configuration and commissioning of the Integrated Access Control System (IACS) in totality on site as per Eskom Standard (240-102220945).
- Installation, configuration and commissioning of an Intruder Detection System in totality on site as per Eskom Standard (240-91190304, 240-86738968 & 240-170000096).
- Installation, configuration and commissioning of an alarm system on site as per Eskom Standard (240-86738968).
- Installation, configuration and commissioning of Public Address System in totality on site as per Eskom Standard (240-170000098).
- Installation, configuration and commissioning of intrusion pre-detection system in totality on site as per Eskom Standard (240-170000691).
- Integration of newly installed systems/components such as Access Control System (ACS), CCTV System, Intruder Detection System, Alarm System, and Public Address System into an Integrated Security System (240-170000096) to interface with the PSIM system.
- Provide services as per Generic Technical Requirements for Physical Security Technologies Contracts 240-170000723.

- l. Installation and or upgrades as per Standard for Non-Lethal Energised Perimeter Detection System (NLEPDS) Electrical Components 240-78980848.
- m. Installation, configuration and commissioning of interfaces to the Physical Security Information Management (PSIM), including firewall configuration and Telecoms circuit commissioning, for data collection, incidents management, data correlation, controlling functionality (CCTVs, IACS systems, PA Systems, etc.) and provision of real-time dashboards and reports (refer to DEM2412993 & 2425114).
- n. Conduct FAT and SAT tests before commissioning the complete integrated system.
- o. Compile or update site as-built drawings with electrical and engineering details showing cable, fibre and network tracing.

### **3.3 Procedure for submission and acceptance of *Contractor's* design**

The *Contractor* submits all designs as per the requirements in Section 3.4.2 of this Functional Specification. The designs submitted are complete packages with all elements (drawings, calculations) included in order for the Employer to review as a whole. The Employer distributes the designs to his review teams. The Contractor receives a response from the Project Manager indicating either acceptance or rejection, with detailed comments. When a design is rejected, the Contractor engages with the *Employer* regarding the reasons for rejection, corrects the design and resubmits it.

The *Contractor* considers this review process in his planning. All designs must be reviewed, accepted and frozen before manufacturing and construction of the relevant plant item starts.

### **3.4 Other requirements of the *Contractor's* design**

Not applicable.

### **3.5 Use of *Contractor's* design**

Not applicable.

### **3.6 Design of Equipment**

During the construction phase the *Contractor* shall provide access and general area lighting to ensure that the *Contractor's* personnel can reach their place of employment/work safely.

Each *Contractor* shall provide his own construction lighting with lighting levels in accordance with the OHS Act No. 85 of 1993. The luminaire installation and lighting level measurements shall be part of the routine safety inspections.

### **3.7 Equipment required to be included in the *works***

All equipment stipulated in detail designs and their outputs (Bill of quantities, drawings: layouts, schematics) of all disciplines, and all information in clause 3.1 *Employer's design*.

### **3.8 As-built drawings, operating manuals and maintenance schedules**

The *Contractor* will be required to submit for approval, redlined construction drawings (where required) as these will yield as-built drawings of the completed *Works*, on which details are provided in respect of as-built information, operating manuals & maintenance schedules, and equipment spares lists. This Section must be

read with requirements of clause 2.2 Document control and 1.2 *Employer's objective and purpose of the Works*.

## **4. Procurement**

### **4.1 People**

#### **4.1.1 Minimum requirements of people employed on the Site**

All Contractors personnel are subjected to access control conditions as per Eskom requirements.

- All workers employed on site comply with Eskom's health and safety standards. Workers are not allowed to be transported on the back of vans or bakkies.
- Workers are restricted to the area of activity in close proximity to the construction.
- The Contractor recruits within the immediate District Municipality for general labour/ skills to execute the project.

#### **4.1.2 BBBEE and preferencing scheme**

The Contractor is required to achieve or maintain BBBEE Level 4 rating in accordance to SD&L requirements.

#### **4.1.3 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)**

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Accelerated and Shared Growth Initiative - South Africa in accordance with and as provided for in the *Contractor's* ASGI-SA Compliance Schedule stated below

*[Insert the agreed ASGI-SA Compliance Schedule here]*

The *Contractor* shall keep accurate records and provide the *Project Manager* with reports on the *Contractor's* actual delivery against the above stated ASGI-SA criteria. [Elaborate on access to and format of records and frequency of submission etc.]

The *Contractor's* failure to comply with his ASGI-SA obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.

## **4.2 Subcontracting**

### **4.2.1 Preferred subcontractors**

The Contractor notifies the Project Manager in the event of using any Sub-contractor and provides the Project Manager with a list of all sub-contractors on the project. Subcontractors cannot subcontract work to another subcontractor. The choice of the proposed sub-contractor is subject to the Project Manager's approval before using the services of such subcontractor. The Subcontractor must be familiar with the required work and should submit CV's of past experience and have the necessary statutory accreditations.

The Contractor provides the Project Manager with the Health and Safety plans of all the sub-contractors on the project, before commencing the project.

### **4.2.2 Subcontract documentation, and assessment of subcontract tenders**

The Contractor uses the NEC subcontractor agreements. All subcontractor quotations for which provisional sums or budgets have been allowed, is first approved by the Employer or his representative with documentary proof. This is done well in advance of the planned scheduling of the work.

#### **4.2.3 Limitations on subcontracting**

As per Eskom requirements, subcontracting will be limited to 30% as far as possible. The Employer is notified where subcontracting exceeds the 30% threshold prior to commencement of the specific subcontracting works.

#### **4.2.4 Attendance on subcontractors**

The contractor attends to the activities of all subcontractors including direct subcontractors

### **4.3 Plant and Materials**

#### **4.3.1 Quality**

The Contractor will not use Plant or Materials which are generally recognised as being unsuitable or otherwise to be avoided for the purpose for which they are intended.

Only components of high reliability will be utilised, with a proven operating history, to enable the Plant to achieve required reliability and availability. Plant and Material design, engineering and manufacture will accord with the best modern practice applicable to high-grade products of the type to be furnished, so as to ensure the efficiency and reliability of the Works and the strength and suitability of the various parts for the Works.

Plant and Materials withstands ambient conditions and the variations of temperature arising under working conditions without distortion, deterioration or undue strains in any part.

All parts are made accurately, and where practicable, to standard gauges so as to facilitate replacement and repairs. Like parts are interchangeable.

No repair of defective Plant and/or Materials will be permitted without the Project Manager's Acceptance and any such repair, if accepted, will be carried out to the satisfaction of the Employer.

The Project Manager is free to specify hold and witness points during the installation and on-site testing stages of the project. The Contractor issues preliminary notification of such hold and witness points by fifteen working days advance notice to the Project Manager and confirms such hold and witness points at least seven working days prior to the activity.

Typical hold points are listed below:

- a. Design Review
- b. Factory Acceptance Test
- c. Delivery to Site
- d. Erection
- e. Site Acceptance Test
- f. All manuals and drawings (in the specified format)
- g. Commissioning

In addition to maintaining appropriate inspection and test records to substantiate conformance to requirements, the following records are safely stored for a minimum period of seven years following the final Completion of the Works:

- a. Construction, layout and component Acceptances
- b. Type and routine test certificates
- c. Construction drawings and Acceptance

After this period, the Contractor offers these records to the Employer (in writing) and obtains a disposal instruction.

Documentation regarding quality procedures is submitted within thirty days of Contract Award. The Employer will review and comment on the acceptability of these documents in a time frame as per the

requirements of the contract for contractual correspondence. If controlled copies of these documents have been submitted to the Employer, then the controlled copy numbers may be quoted in the submission.

The Contractor adheres to:

Vendor Document Submittal Schedule (the schedule to be issued to the Contractor by the Employer)

#### **4.3.2 Plant & Materials provided “free issue” by the *Employer***

None, all Plant and Materials are to be provided by the Contractor.

#### **4.3.3 Contractor’s procurement of Plant and Materials**

The Contractor is responsible for ensuring that all products are preserved in their appropriate manner as described in their specifications or in Eskom preservation, shipping and transportation procedures as applicable. The Contractor shall submit the preservation, shipping and transportation procedures to the Employer for review and acceptance. The Employer may choose to witness the packaging, loading and offloading of the products depending on their criticality, this will be indicated in the intervention points on the QCP / ITP document. The Contractor shall ensure that all storage requirements for products are properly implemented to preserve the products against adverse conditions, deterioration, damages, etc. Storage and preservation procedures for the different products must be submitted to the Employer for review and acceptance. The Employer may request to inspect the stored products at any given point during the storage period of the product. Requirements for preservation, shipping and transportation are addressed in 240-105658000

#### **4.3.4 Spares and consumables**

The Contractor provides as part of the tender proposal, a recommended parts list as well as a proposal for the execution thereof:

- a. The Employer is responsible for purchasing of recommended spares.
- b. The Contractor is responsible for ensuring that consignment spares are available in time of need.

Each recommended spare part is to be uniquely identified with a part number, which can be cross referenced to a part list and associated drawing. The Employer prefers that support from the OEM is available locally in South Africa.

#### **4.4 Tests and inspections before delivery**

The Employer carries out quality inspections at his own discretion. The Employer will inspect and approve stages of manufacture of all Plant and Materials necessary to ensure the correct quality of Plant and Materials as prescribed in the accepted project quality plan.

All inspections and testing are to be performed in accordance with the Quality Control Procedure (QCP) developed by the Contractor after Acceptance by the Employer.

The Contractor must provide facilities for inspection of all items of Plant and Materials at the place of the manufacture and this requirement must extend to all sub-contractors and suppliers if applicable. All material labour or assistance, tools, gauges, articles or apparatus that the Employer may require for the purpose of testing, gauging and inspection, must be provided by the Contractor. The Contractor must provide all such facilities for testing and the contract price must include for this.

The Employer reserves the right to reject items that do not conform to the Employer’s requirements. When the plant has passed the prerequisite tests the Employer will furnish to the Contractor a certificate or endorse the

Contractor's test certificate to that effect. Examination by the Employer does not relieve the Contractor from the responsibility of carrying out all tests which may be necessary to ensure the required standard of manufacture or from any obligations in terms of the contract.

The achievement of adequate standards during the tests at the place of manufacture, if performed, is only the first requirement. The final criterion will be performance onsite, and any of the requirement which proves defective due to bad workmanship or material must be replaced forthwith by the Contractor at his own cost on the instruction of the Employer.

The following tests are conducted by the Contractor and are to be witnessed by the Employer at the manufacturer's works or Contractor's premises as a minimum requirement:

- a. Visual inspection of the Plant and Materials
- b. Review of the certification requirements
- c. Inspection of paint work and corrosion protection.
- d. Verification that all components are delivered to the Contractor's premises.
- e. Verification that all power plugs is correct.
- f. Verification that components installed is correct.

#### **4.5 Marking Plant and Materials outside the Working Areas**

All Material paid for by the Employer is clearly labelled as being the Employer's property

#### **4.6 Contractor's Equipment (including temporary works).**

The Contractor provides the following in order to complete the works:

- a. All scaffolding required
- b. Any Equipment necessary to complete the works
- c. Lifting facilities

The Contractor supplies, installs, maintains and removes all temporary construction facilities and utilities necessary to Provide the Works.

#### **4.7 Cataloguing requirements by the Contractor**

Unique Identifier 240-1289988974 to be provided on request

## **5. Construction**

### **5.1 Temporary works, Site services & construction constraints**

The *Contractor* shall be responsible for the planning and arrangement of the site to ensure safe, secure and efficient progress of the *Works* throughout the entire project period.

#### **5.1.1 Employer's Site entry and security control, permits, and Site regulations**

Permits to enter the site are a requirement and the *Contractor* shall comply with the Site entry and permit requirements, prior to commencement of construction.

The *Contractor* shall be responsible to implement a secure site access control system for the entire site, laydown areas and *Contractor's* yards, to comply with the *Employer's* requirements.

#### **5.1.2 Restrictions to access on Site, roads, walkways and barricades**

1. The *Contractor* shall comply with the *Employer's* zero tolerance policy, to alcohol and substance abuse, and the *Contractor* shall be subjected to screening upon entry to the *Employer's* premises and Project Site.

#### **5.1.3 People restrictions on Site; hours of work, conduct and records**

2. It is paramount that the *Contractor* maintains records of his people on Site, including those of his Sub-*Contractors* which the Project Manager or Supervisor have access to at any time.

#### **5.1.4 Health and safety facilities on Site**

See clause 2.3

#### **5.1.5 Environmental controls, fauna & flora, dealing with objects of historical interest**

See clause 2.4

#### **5.1.6 Title to materials from demolition and excavation**

The Employer has ownership of property or asset rights to all materials from demolition and excavation. The Employer will decide on materials that are due for disposal, and materials that will be re-used including those that the Employer will decide to keep as spare items. However, excess rubble and materials from excavation the Employer will decide to dispose of, shall be disposed of according to Eskom Waste management standard in section 2.3 d) xi.

#### **5.1.7 Cooperating with and obtaining acceptance of Others**

Not applicable.

#### **5.1.8 Publicity and progress photographs**

Not application.

#### **5.1.9 Contractor's Equipment**

The *Contractor's* equipment and its inventory is his sole responsibility. The *Contractor* is responsible to maintain accurate records of all plant and equipment, including scaffolding, rigging equipment including slings (ensure test reports are readily available for Employer's review), cranes etc., which are brought on to the working areas. The *Contractor* controls and manages the access of such plant and equipment to the working areas.

#### **5.1.10 Equipment provided by the *Employer***

None.

#### **5.1.11 Site services and facilities**

The *Employer* will provide power and water connection points. The *Contractor* shall then provide everything else necessary to ensure completeness of the *Works*.

#### **5.1.12 Facilities provided by the *Contractor***

The *Contractor* shall provide everything necessary for his own use and to see the *Works* through.

#### **5.1.13 Underground services, other existing services, cable and pipe trenches and covers**

Prior to the commencement of *Works*, the *Contractor* is required to detect and identify the presence of any underground services in the area where the *Works* will be performed. The *Contractor* will provide the employer with evidence in a form of a report signed by competent personnel who performed or was part of the underground service detection for acceptance and approval to commence with the *Works*.

The *Contractor* shall note that although the drawings maybe prepared using available information for detailed designs, they show only the approximate positions of existing services where applicable.

The information is supplied in good faith but shall be used as a guide only and does not relieve the *Contractor* of his responsibility to exercise due caution when working in areas where existing services can reasonably be expected, nor his obligation to liaise with the authorities in this regard and the obtaining of the necessary work permits and wayleaves.

The *Contractor* shall be responsible for immediately notifying the *Employer* and the authorities concerned regarding any damage caused to public services and existing *Works*.

Should underground services be located, the *Contractor* shall be responsible to locate and safeguard any existing service he may encounter during construction. The *Contractor* shall be responsible for any damage to such existing services and *Works* in the execution of this contract and shall reimburse the Employer, authority or the owner concerned for any repairs required following damages due to the *Contractor's* negligence.

The *Contractor* will be required to map and provide a drawing with exact locations or positions of the service, the type of service that has been detected and the depth of burial of the service. This includes in service and out of commission services. This shall be presented to the employer preceding *Works* commencement.

The decision will be based on:

- Safety : Ensure that there is no danger posed by trenching in the area where there are services located.

- **Type of Service** : Check if the type of service requires ease of accessibility should there be a requirement to access the service and if the electrical cables installed will cause interference to the functioning of the service and vice-versa.
- **Depth of Burial** : If the service is buried deep enough to allow cables to be installed above it without significant risk.

The employer will communicate all decisions with the *Contractor* through the established communication channels.

#### **5.1.14 Survey control and setting out of the works**

The *Contractor* shall ensure that instruments used for survey work, checking, inspection, testing, commissioning, and performance monitoring are correctly calibrated and up to date, according to relevant standards. The *Contractor* shall submit the valid calibration certificates with method statements and test records.

#### **5.1.15 Control of noise, dust, water and waste**

The *Contractor* shall keep noise levels within reasonable norms (liaising with occupational hygienist for applicable dB levels), considering the context of the site location.

The *Contractor* shall control dust over the site of the *Works* having in place the necessary equipment available on site to control dust.

The *Contractor* shall provide receptacles at the work sites and shall be responsible for disposal of refuse and waste generated by his staff.

#### **5.1.16 Sequences of construction or installation**

It shall be as prescribed in the approved method statement.

#### **5.1.17 Giving notice of work to be covered up**

The *Contractor* shall request, in writing, inspection of *Works* to be covered up, by submission of such request to the Project Manager, at least 24 hours in advance.

### **5.2 Completion, testing, commissioning and correction of Defects**

#### **5.2.1 Work to be done by the Completion Date**

On or before the Completion Date the *Contractor* shall have done everything required to provide the *Works* except for the work listed below which may be done after the Completion Date but in any case, before the dates stated. The *Project Manager* cannot certify Completion until all the work except that listed below has been done and is also free of defects which would have, in his opinion, prevented the *Employer* from using the *Works* and Others from doing their work.

|  | Item of work | To be completed by |
|--|--------------|--------------------|
|  | None         | None               |

#### **5.2.2 Use of the works before Completion has been certified**

The *Employer* may use any part of the *works* before Completion has been certified but if he does so he takes over the part of the *works* except if the use is for a reason stated in the Works Information.

### **5.2.3 Materials facilities and samples for tests and inspections**

The *Contractor* is to provide all the material samples, facilities, transportation and testing as specified. Where the *Employer* prefers to handle its sample testing, as in the case of lighting, see clause 3.3.1.12 regarding lighting samples, the *Contractor* shall avail the samples and also provide transportation for the samples to be tested.

### **5.2.4 Commissioning**

Conformity of the installation to the design documentation shall be assessed and adjudicated upon completion of the commissioning phase. All necessary test and calibration certificates to form part of the Operational Acceptance Testing document file.

The *Contractor* develops a commissioning procedure and submits it to the *Employer* for acceptance.

A PIP (Project Implementation Plan) is developed stating exact dates/timelines for the project from inception to completion.

The *Contractor* provides sufficient personnel for the satisfactory and timely commissioning of the equipment.

Before plant and materials are placed in service, the *Contractor* submits completion certificates that confirm the equipment and installation functions in a suitable and safe condition.

## **Testing and commissioning requirements**

### **Testing of electrical equipment.**

All power cables type tests and sample tests shall be in accordance with SANS 97, 1507, 1574 and 1339.

- All required test reports shall be submitted to the Employer together with Appendix B of 240-56227443 Generation Requirements for Control and Power Cables for Power Station Standard for approval.
- All routine tests shall be indicated on Appendix B and test certificates provided at delivery of cables.
- Site tests shall include, at minimum, insulation resistance, and conductor resistance for acceptance.
- Testing of switchgear shall be consistent with 240-56227516 LV switchgear and control gear assemblies and associated equipment for voltage up to and including 1000V AC and 1500V DC standard.

### **Commissioning of electrical equipment**

- The *Contractor* develops a commissioning procedure and submits to the Employer for review and acceptance.
- Electrical cable schedule template (240-56176097) and electrical termination schedule template (240-77302094) shall be used to capture cable installation information.

A certificate of compliance shall be submitted after completion of the *Works*, as per 3.1.1.8.

### **5.2.5 Start-up procedures required to put the *works* into operation**

Not applicable.

### **5.2.6 Take over procedures**

The *Employer* shall take over the facility after completion and only then shall normal operations commence.

#### **5.2.7 Access given by the *Employer* for correction of Defects**

The *Employer* shall grant access to the *Contractor* to return to site to correct a defect during the Defects Liability Period.

- The *Contractor* shall rectify any defects that become apparent during inspection, testing, commissioning, performance testing and after Completion & Hand over. Retest defective parts, and any associated interdependent systems, and demonstrate that the installation operates in accordance with the Contract Documents.
- *Contractor* shall submit without delay any record that indicates that any part of the installation inspected or tested does not comply with the Contract Documents and Test Protocols along with a method statement for the proposed remedial *Works* including measures to be taken to prevent any delay to the project programme.

#### **5.2.8 Performance tests after Completion**

- a. Upon completion of the actual installation *Works*, the *Contractor* shall undertake the following to verify the physical installation is completed according to the approved design:
  - Verify all parts facility are in line with the approved Final Design.
  - Verify the facility construction is according to the provisions of the Contract.
  - Verify all equipment and parts have been installed according to their manufacturers' installation manuals.
- b. Upon giving notice on readiness for Tests after Installation and prior to the commencement of Completion Inspection, the *Contractor* shall provide the redlined construction drawings to yield As Built Drawings as well as the Operation and Maintenance Manuals of the Plant to the *Employer* and *Employer's* representative. The completeness of the documentation will be reviewed by the *Employer* and *Employer's* Representative and accepted before commencement of the tests.
- c. Upon the successful completion of test, necessary completion test certificates will be issued by the *Employer*.
- d. Once the Completion tests are successfully performed, the *Contractor* shall provide the report to the *Employer* and the *Employer's* representative, for review and approval, including the following,
  - i. A report, signed by the *Contractor*, summarizing each test performed and their acceptance or rejection according to relevant standards and requirements
  - ii. Test raw data and processed data

#### **5.2.9 Operational maintenance after Completion**

None.

## **6. Plant and Materials standards and workmanship**

### **6.1 Investigation, survey and Site clearance**

With regards to implementing a design solution, the *Contractor* is required to take the actual measurements onsite before proceeding with design & manufacture of the *Works* as dimension accuracy remains the responsibility of the *Contractor*.

The *Contractor* shall check the condition and accuracy of all reference points and level beacons (where available) and satisfy himself that they have not been disturbed and are true with regard to position and level.

The *Contractor* shall employ a capable surveyor to set out the *Works* to the required lines and levels. The *Employer* shall be informed immediately should any discrepancy be discovered between the levels or dimensions obtained by the *Contractor* and those shown on the drawings.

The *Contractor* shall submit the method of setting out he proposes to employ to the *Employer*. Accurate control of line and level shall be provided by the *Contractor* at all stages of construction.

The *Contractor's* survey instruments and survey equipment shall be suitable for the accurate setting out of the *Works* and shall be subject to the approval of the *Employer*.

### **6.2 Building works**

See clause 3.1.4

### **6.3 Civil engineering and structural works**

#### **6.3.1 General**

- a) Engineering, manufacture, quality control, procurement, handling, shipment and transport to/from site, storage, offloading, construction and erection, finishing, installation, commissioning, testing, optimisation and handover of equipment, tools and materials for the *Works*.
- b) The *Contractor* carries out the civil, structural and building portion of the *Works* in accordance with the Occupational Health and Safety Act (85/1993): Construction Regulations, 2014 and the National Building Regulations.
- c) All *Works* are designed for constructability, reliability, and maintainability.
- d) The *Contractor* procures all construction material and equipment required to perform the *Works*.
- e) The *Contractor* identifies and includes all items required to form a complete, reliable, fit for purpose operating *Works*, which complies with the requirements as stipulated in this specification and as per the project specific designs.
- f) The *Contractor* provides all drawings (hard and soft copy), models, inspection/quality reports, construction records, commissioning test reports, and other documentation as required by the scope of *Works*.
- g) The *Contractor* submits all inspection and assessment reports required as per the Civil Inspection Manual, 240-99527377.
- h) The *Contractor* obtains from the Employer, dimensioned general arrangement drawings of the designed *Works* and detailed drawings of all components of the *Works*, sufficiently detailed for the preparation of maintenance and operating procedures.
- i) The *Contractor* obtains from the Employer, drawings and documentation as specified in the project specific scopes of work. Where applicable, based on the level and nature of the project, the *Contractor* will

produce fabrication drawings, construction drawings, as built drawings, maintenance and operating manuals for the fabrication and installation of the *Works*.

- j) Other Plant and Materials or items associated with this *Works* is utilised with prior approval from the *Project Manager*.
- k) The *Contractor* provides all the test equipment for testing, the sub-assemblies and the functional groups for site testing, commissioning and performance testing. The *Contractor* performs Factory Acceptance Testing (FAT) and Site Acceptance Testing (SAT) of the Plant and Materials where required.
- l) The *Contractor* designs and provides all falsework and formwork and any other necessary temporary *Works* for the safe execution of the *Works*.
- m) The *Contractor* takes all necessary precautions to ensure that none of the existing structures and services that are not in the scope of *Works* is damaged during any demolition required. In the event that structures and services which are not in the scope of work is damaged, the *Contractor* is liable to repair or replace the damaged items at their own cost.

### 6.3.2 Standards

The *Contractor* constructs and erects the civil and structural *Works* in accordance with the accepted design/proposal and takes cognisance of SANS 2001 and SANS 1200. In general, the following standards will be adhered to:

| <b>SANS 1200</b> | <b>Title</b>                                         |
|------------------|------------------------------------------------------|
| A                | General                                              |
| C                | Site Clearance                                       |
| D                | Earthworks                                           |
| DB               | Earthworks (Pipe Trenches)                           |
| DM               | Earthworks (Roads Subgrade)                          |
| GA               | Concrete (Small <i>Works</i> )                       |
| L                | Medium Pressure Pipelines                            |
| LB               | Bedding (Pipes)                                      |
| LC               | Cable Ducts                                          |
| LD               | Sewers                                               |
| LE               | Stormwater Drainage                                  |
| M                | Roads (General)                                      |
| ME               | Subbase                                              |
| MH               | Asphalt Base and Surfacing                           |
| MF               | Base                                                 |
| MJ               | Segmented Paving                                     |
| MK               | Kerbing and Channelling                              |
| MM               | Ancillary Road <i>Works</i>                          |
|                  |                                                      |
| <b>SANS 2001</b> | <b>Title</b>                                         |
| CC1              | Concrete <i>Works</i> (structural)                   |
| CC2              | Construction <i>Works</i> (minor <i>Works</i> )      |
| CM1              | Masonry walling                                      |
| CT1              | Structural timberwork (flooring)                     |
| CT2              | Structural timberwork (roofing)                      |
| EM1              | Cement plaster                                       |
| CS1              | Structural steelwork                                 |
|                  |                                                      |
| <b>Other</b>     | <b>Title</b>                                         |
| SANS 10400       | The application of the National Building Regulations |

|                    |                                                                                                     |
|--------------------|-----------------------------------------------------------------------------------------------------|
| SANS 10252. Part 2 | Drainage installations for buildings                                                                |
| SANS 121           | Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods |
| SANS 10064         | The preparation of steel surfaces for coating                                                       |
| SANS 10160         | Basis of structural design and actions for buildings and industrial structures                      |
| SANS 10162-1       | The structural use of steel Part 1: Limit-states design of hot- rolled steelwork                    |
| SANS 10162-2       | The structural use of steel Part 2: Cold-formed steel structures                                    |
| SANS 50025 series  | Hot rolled products of structural steels Parts 1-6                                                  |
| SANS 10145         | Concrete masonry construction                                                                       |

### 6.3.3 Works Related to Existing Infrastructure

Minor *Works* for other engineering disciplines (such as electrical and mechanical equipment) generally require civil support services or amendments to existing infrastructure. For such implementation the following is applicable:

- a) Floor mounted equipment is to be mounted onto concrete plinths, which protrudes at least 50mm (unless otherwise stated) above finished floor level. Vibration elimination rubbers are to be provided between mechanical equipment and the concrete plinth.
- b) All piping and cabling are to be mounted onto cantilever brackets or equivalent means with vibration elimination rubbers provided between any mechanical equipment and the brackets.
- c) Piping and cable trenches will be in accordance with SANS 1200 DB, LB and LC
- d) When utilising existing concrete plinths and equipment supports, a structural integrity assessment is to be carried out by the *Contractor* to verify that the existing structures are capable of supporting the intended replacement equipment prior to any installation *Works* commencing.
- e) The *Contractor* ensures that all openings created in the walls to accommodate pipe work and cabling are adequately sealed to ensure that the existing fire rating of the building is maintained.
- f) The *Contractor* ensures that all openings created on load bearing walls do not compromise the structural integrity of the aforementioned walls. The *Contractor* ensures that all openings created do not compromise or impact any steel reinforcement existing in the structural walls.
- g) With regards to hoisting and rigging of any equipment, the *Contractor* designs and provides the following in order to complete the *Works*:
  - All scaffolding required.
  - Any equipment necessary to complete the *Works*.
  - Lifting facilities.

The *Contractor* ensures that a complete QCP, risk assessment, method statement, ITP and temporary *Works* calculations accompanied by a rigging study, where applicable are submitted to the *Project Manager* for review and acceptance before the *Works* can commence.

- h) The *Contractor* supplies, installs, maintains and removes all temporary construction facilities and utilities necessary to provide the *Works*.
- i) Where space planning or architectural design requires changes to the vertical elements of a structure, assessment will be performed to ensure there are no load bearing elements prior to removal or demolition. The same is applicable to creation of new openings in walls (such as doors or windows) or slabs where an approved design verification and solution will be required prior to the commencement of any *Works*.

### 6.3.4 Concrete Repairs

Reinforced concrete work shall be in accordance with SANS 2001-CC1:2007; Concrete *Works* (structural).

Where existing structural concrete or newly placed concrete require repairs, a Method statement is to be prepared illustrating the extent of the repairs that would be required, procedure, materials and equipment which will be adopted and used to repair the defects identified in all structural concrete elements.

The following types of concrete defects should be covered by this method statement:

- Honeycombs, spalling and voids
- Cracks

### 6.3.5 Steelwork

Steelwork shall be in accordance with SANS 2001-CSI: 2005, Structural Steelwork.

The following parts of SANS 2001 and associated specification data have been amended or have had options selected:

4.1.1 The grade of structural steel if required shall be S355JR to SANS 50025 / EN10025-2

4.1.5 Structural fasteners are to be ordinary bolts and nuts of grade 8.8.

4.2.4.2/4.4.4.5 Attachments to facilitate erections may not remain part of the permanent structure.

A suitable corrosion protection system is to be provided. Furthermore components/substrates/fasteners of dissimilar materials are to be isolated using washers/sleeves or other suitable means to separate the materials to avoid corrosion and or staining.

### 6.3.6 Sporting Facilities

In addition to the Eskom engineering standards and SANS standards, the *Contractor* is cognisant of the materials required for specialised sporting facilities such as (but not limited to) soccer, padel, tennis, squash, volleyball, netball and basketball courts.

In general:

- Designed foundation's, slabs and surface beds are placed on prepared compacted ground or material that is as per the approved geotechnical design and report.
- Compaction of said ground or materials is in accordance with the specified Mod AASHTO and requirements of the approved geotechnical design and report.
- Drainage is catered for surface, sub-surface and perimeter boundaries of sporting courts and facilities. Drainage is in accordance with the specific court installation guidelines.
- Concrete *Works* are in accordance with the approved designs, SANS 1200 GA Concrete (Small *Works*) and SANS 2001-CC1: 2012.
- Glass panels, where required, are in accordance with SANS 1263-1 is Safety and security glazing materials for buildings – Part 1: Safety performance of glazing materials under human impact.
- Artificial turf, where required, is in accordance the requirements to meet the warranty certification of AGSA (Artificial Grass Southern Africa) or similar. All AGSA profiles are UV coated and have a 12 Year warranty against colour change. (There is no detectable trace of lead in AGSA profiles according to California's Prop 65, which is the strictest standard for lead content of the world. Except for lead, other hazardous elements, and heavy metals, such as Cd, Hg and Cr can also cause health problems. AGSA profiles are free of all these hazardous substances and passed the tests for 73 substances of high concern, 8 kinds of heavy metals).
- All fencing, poles and steel *Works* are galvanised and suitable for outdoor use.

SBR Rubber and Silica Sand Infill used in sports fields/courts are in accordance with international safety standards, OHSa and sports federation standards, like those from FIFA.

#### **6.4 Electrical & mechanical engineering works**

3. See clauses 3.1.1.1 - 3.1.1.8 and electrical section under clause 3.2.

#### **6.5 Process control and IT works**

See clause 3.2.6

#### **6.6 Other [as required]**

None.

**7. List of drawings**

**7.1 Drawings issued by the *Employer***

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some drawings may contain both Works Information and Site Information.

| Drawing number | Revision | Title |
|----------------|----------|-------|
|                |          |       |
|                |          |       |
|                |          |       |

### C3.2 *CONTRACTOR'S* WORKS INFORMATION

None. This section could also be compiled as a separate file.

PART 4: SITE INFORMATION

| Document reference    | Title            | No of pages |
|-----------------------|------------------|-------------|
| C4                    | This cover page  | 1           |
|                       | Site Information | 2           |
| Total number of pages |                  |             |

## PART 4: SITE INFORMATION

### Site: EAL

Eskom Academy of Learning is a formal corporate training campus in Midrand, Gauteng, under the City of Johannesburg Metropolitan Municipality (Region A), part of Gauteng Provincial Government oversight.

### Regional Authority:

**Level** Authority / Contact Info

**District Municipality** City of Johannesburg Metropolitan Municipality (Gauteng Province)

**Local Municipality** Midrand falls under Region A of the City of Johannesburg

**Provincial Oversight** Gauteng Provincial Government (CoGTA framework applies)

**National Oversight** Eskom Holdings SOC Ltd (state-owned utility, headquartered in Johannesburg)

### Nearest Towns:

Nearest Towns: Midrand (central), Sandton (15 km south), Centurion (10 km north), Johannesburg CBD (25 km south).

Nearby Suburbs/Villages (3–30 km): Halfway House, Glen Austin, Noordwyk, Carlswald, Vorna Valley.

Larger Regional Centres (within 100 km): Pretoria, Johannesburg, Vereeniging, Rustenburg.

### Infrastructure:

- Utilities: Fully serviced by Johannesburg municipal water, electricity, and sanitation.
- Roads & Transport: Accessible via N1 highway, R562 (Olifantsfontein Road), and Dale Road. Gautrain Midrand Station is nearby, linking to Johannesburg and Pretoria.
- Air Access: Close to O.R. Tambo International Airport (~25 km southeast).
- Rail Access: Gautrain rapid rail system connects Midrand to Sandton, Pretoria, and Johannesburg.

### Environmental Context:

- Water & Pollution: Midrand lies within the Jukskei River catchment, part of the Crocodile River system. Urban runoff and industrial activity contribute to localized pollution.
- Latitude & Longitude: Approximately –25.9895° S, 28.1284° E (Midrand central coordinates).
- GPS Listing: Dale Road, Midrand, 1685, South Africa.

### Contact & Institutional Details

- Address: Dale Road, P/Bag X13, Midrand, 1685, South Africa.
- Phone: +27 (0)11 651 6161
- Website: [www.eskom.co.za](http://www.eskom.co.za)
- Facilities: Wheelchair accessible, dedicated parking, modern training and conference facilities.

**Summary: Eskom Academy of Learning is a corporate training college in Midrand, Gauteng, serving as Eskom's premier education hub. It is strategically located near Gautrain and major highways, under Johannesburg municipal jurisdiction, with oversight from Gauteng Province.**



#### Site: Eskom Megawatt Park (Sandton/Sunninghill, Gauteng)

Eskom Megawatt Park is a formal corporate headquarters complex in Sunninghill, Sandton, under the City of Johannesburg Metropolitan Municipality (Region E), part of Gauteng Provincial Government oversight.

- **Site:** Eskom Megawatt Park is Eskom's national headquarters, located in **Maxwell Drive, Sunninghill, Sandton, Gauteng, South Africa**.
- **Institution Type:** Corporate headquarters and operations centre for Eskom Holdings SOC Ltd.
- **Ownership:** Eskom Holdings SOC Ltd (state-owned enterprise).

#### Regional Authority:

- **District Municipality:** City of Johannesburg Metropolitan Municipality (DC42 equivalent, Gauteng metro).
- **Local Municipality:** Sandton/Sunninghill falls under **Region E** of the City of Johannesburg.
- **Provincial Oversight:** Gauteng Provincial Government (CoGTA framework applies).
- **National Oversight:** Eskom Holdings SOC Ltd (state-owned utility, headquartered here).

#### Nearest Towns & Suburbs:

- **Nearest Towns:** Sandton (CBD ~8 km south), Midrand (~12 km north), Fourways (~7 km west).
- **Nearby suburbs/villages (3–30 km):** Rivonia, Woodmead, Paulshof, Bryanston, Lonehill.
- **Larger regional centres (within 100 km):** Johannesburg CBD, Pretoria, Vereeniging, Rustenburg.

#### Infrastructure:

- **Utilities:** Fully serviced by Johannesburg municipal water, electricity, and sanitation.
- **Roads & Transport:** Accessible via **N1 Western Bypass**, Maxwell Drive, Rivonia Road. Gautrain Sandton Station nearby (links to Pretoria, Midrand, Johannesburg).
- **Air Access:** Close to **O.R. Tambo International Airport** (~30 km southeast).
- **Rail Access:** Gautrain rapid rail system connects Sandton to Midrand, Pretoria, and Johannesburg.

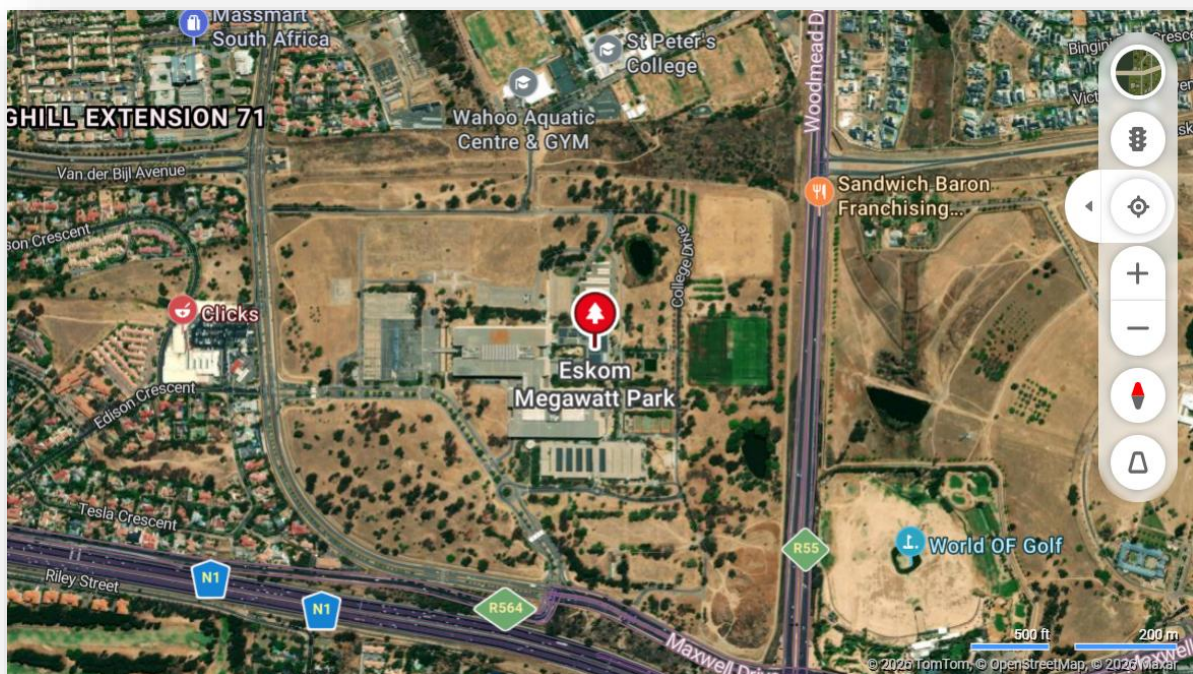
#### Environmental Context:

- **Water & Pollution:** Lies within the **Jukskei River catchment**, part of the Crocodile River system. Urban runoff and commercial activity contribute to localized pollution.
- **Latitude & Longitude:** Approx. **-26.0315° S, 28.0603° E**.
- **GPS Listing:** Maxwell Drive, Sunninghill, Sandton, Johannesburg, South Africa.

#### Contact & Institutional Details:

- **Address:** Maxwell Drive, Sunninghill, Sandton, Johannesburg, South Africa.
- **Phone:** +27 (0)11 800 8111
- **Website:** [www.eskom.co.za](http://www.eskom.co.za)
- **Facilities:** Office towers, boardrooms, national operations centre, corporate services.

**Summary:** Eskom Megawatt Park is the **strategic headquarters** of Eskom, located in Sandton/Sunninghill, Gauteng. It differs from the **Eskom Academy of Learning in Midrand**, which is focused on **training and workforce development**. Megawatt Park houses Eskom's executive leadership and national operations, while the Academy serves as the educational hub.



### Site Information: Eskom Research and Innovation Centre (ERIC)

Eskom Research and Innovation Centre is a formal research and development facility in Rosherville, Johannesburg South, under the City of Johannesburg Metropolitan Municipality, part of Gauteng Provincial Government oversight.

- **Site:** Eskom Research and Innovation Centre (ERIC) is Eskom's dedicated research, testing, and development hub, located in **Rosherville, Johannesburg South, Gauteng, South Africa**.
- **Institution Type:** Corporate research and development facility.
- **Ownership:** Eskom Holdings SOC Ltd (state-owned enterprise).

### Regional Authority

- **District Municipality:** City of Johannesburg Metropolitan Municipality.
- **Local Municipality:** Johannesburg South (Rosherville, Germiston area).
- **Provincial Oversight:** Gauteng Provincial Government (CoGTA framework applies).
- **National Oversight:** Eskom Holdings SOC Ltd (Research, Testing & Development business unit).

### Nearest Towns & Suburbs

- **Nearest Towns:** Germiston (~5 km east), Johannesburg CBD (~10 km northwest).
- **Nearby suburbs/villages (3–30 km):** Cleveland, Heriotdale, Rosettenville, Alberton, Bedfordview.
- **Larger regional centres (within 100 km):** Pretoria, Vereeniging, Rustenburg.

### Infrastructure

- **Utilities:** Fully serviced by Johannesburg municipal water, electricity, and sanitation.
- **Roads & Transport:** Accessible via **M2 freeway**, Avonsite Street, and Cleveland Road. Close to major freight and commuter rail lines.
- **Air Access:** ~25 km from **O.R. Tambo International Airport**.
- **Rail Access:** Johannesburg freight rail corridor nearby; passenger rail via Germiston and Johannesburg Park Station.

### Environmental Context

- **Water & Pollution:** Lies within the **Jukskei–Klip River catchment**, part of the Vaal River system. Industrial activity contributes to localized pollution risks.
- **Latitude & Longitude:** Approx. **–26.217° S, 28.118° E**.
- **GPS Listing:** Avonsite Street, Heriotdale, Rosherville, Johannesburg South, Gauteng, South Africa

### Contact & Institutional Details

- **Address:** Avonsite Street, Heriotdale, Rosherville, Johannesburg South, Gauteng, 2075, South Africa.
- **Phone:** **+27 (0)11 629 5111**
- **Website:** Eskom Research & Testing
- **Facilities:** Research laboratories, testing facilities, consulting offices, technical planning units. Wheelchair accessible, with dedicated parking.

**Summary:** The Eskom Research and Innovation Centre (ERIC) in Rosherville, Johannesburg, is Eskom's **scientific and technical hub**, supporting innovation, testing, and development for the utility. It differs from the **Academy of Learning (Midrand)** and **Megawatt Park (Sandton)** by focusing on **technical R&D and partnerships with universities and research institutions**, rather than training or corporate administration.

