AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

PROJECT NAME AND NUMBER: DIA: 5160: ELEC: TRANSFORMER REPLACEMENT

TITLE OF PROJECT: CONTRACTOR APPOINTMENT FOR SUPPLY, DELIVERY, OFFLOAD, INSTALLATION AND COMMISSIONING OF EIGHTEEN (18) DRY-TYPE TRANSFORMERS AT KING SHAKA INTERNANTIONAL AIRPORT FOR A PERIOD OF TWO (02) YEARS.

NEC 3: ENGINEERING AND CONSTRUCTION CONTRACT (ECC)

Between **AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED**

Applicable at King Shaka International Airport (KSIA)

(Registration Number: 1993/004149/30)

and **CONTRACTOR NAME:**

(Registration Number: _____)

for **CONTRACTOR APPOINTMENT FOR SUPPLY, DELIVERY, OFFLOAD, INSTALLATION AND COMMISSIONING OF EIGHTEEN (18) DRY-TYPE TRANSFORMERS AT KING SHAKA INTERNANTIONAL AIRPORT FOR A PERIOD OF TWO (02) YEARS.**

Contents: **No of pages**

Part C1: Agreements and Contract Data

C1.1: Form of Offer and Acceptance

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of: **CONTRACTOR APPOINTMENT FOR SUPPLY, DELIVERY, OFFLOAD, INSTALLATION AND COMMISSIONING OF EIGHTEEN (18) DRY-TYPE TRANSFORMERS AT KING SHAKA INTERNANTIONAL AIRPORT FOR A PERIOD OF TWO (02) YEARS.**

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

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

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VAT IS:

(in words)…**……..**

.....
Rands;

(in figures) **R……**

THE OFFERED PRICES ARE AS STATED IN THE PRICING SCHEDULE

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 Bidder:		
	(Insert name and address of organisation)	
Name & signature of witness		Date

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. 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 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

Name & signature of witness	*(Insert name and address of organisation)*	Date	

Schedule of Deviations

1 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

2 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

3 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

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

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

	For the Employer	**For the Bidder**
Signature (s)		
Name (s)		
Capacity		
Name and Address	**Airports Company South Africa SOC Limited** Airports Company South Africa SOC Limited, Western Precinct Aviation Park OR Tambo International Airport 1 Jones Road Kempton Park Gauteng 1632	
Name & Signature of witness	*(Insert name and address of organisation)*	*(Insert name and address of organisation)*
Date		

Part C1.2a Contract Data

Part one – Data provided by the *Employer*

The Conditions of contract are selected from the NEC3 Engineering and Construction Contract, April 2013.

Each item of data given below is cross-referenced to the NEC3 Engineering Construction Contract which requires it.

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for Main Option	
	Main Option Dispute resolution Option	**B: Priced contract with Bill of Quantities** **W1: Dispute resolution procedure**
	Secondary Options (incorporating amendments)	**X2: Changes in the law** **X7: Delay damages** **X13: Performance Bond** **X18: Limitation of liability** **Z: Additional conditions of contract** of the NEC3 Engineering and Construction Contract, April 2013
10.1	The *Employer* is (Name)	Airports Company South Africa SOC Limited, King Shaka International Airport
	Address	1 Canelands Drive, Administration Office MSO Building King Shaka International Airport La Mercy 4407
	Telephone Fax	032 436 6000 032 436 6672
10.1	The *Project Manager* is	Pumelo Mpaka
	Address	1 Canelands Drive, Administration Office MSO Building King Shaka International Airport La Mercy 4407
	Telephone E-mail address	032 436 6304 pumelo.mpaka@airports.co.za
10.1	The *Supervisor* is	Sandile Dlamini

	Address	1 Canelands Drive, Administration Office MSO Building King Shaka International Airport La Mercy 4407
	Telephone Fax Email	032 436 9301 Sandile.Dlamini@airports.co.za
11.2	The *works* are	**SUPPLY, DELIVERY, OFFLOAD, INSTALLATION AND COMMISSIONING OF EIGHTEEN (18) DRY-TYPE TRANSFORMERS AT KING SHAKA INTERNANTIONAL AIRPORT FOR A PERIOD OF TWO (02) YEARS**
11.2	The following matters will be included in the Risk Register	• Availability of As Built information. • Access to Site • Site Constraints and Constructability • Material delivery long lead items • Weather conditions • Existing services • Project Program delay • Payment delay
11.2	The *Works Information* is in	Part C3 ‘Scope of Works’ section of this contract
11.2	The *Site Information* is in	Part C4 ‘Works Information’ section of this contract
11.2	The *boundary of the site* is	King Shaka International Airport (Airside and Restricted areas)
12.2	The *law of the contract* is the law of	the Republic of South Africa
13.1	The *language of this contract* is	English
13.3	The *period of reply* is	Seven (7) working days

3	**Time**	
31.2	The *starting date* is	Upon signing of the Contract by ACSA
11.2	The *completion date* is	24 months after signing of the Contract by ACSA
30.1	The *access date* is	One week after signing of the Contract by ACSA

31.1	The *Contractor* submits a first (preliminary) programme with the tender by the tender closing date	Two (2) weeks after the access date
32.2	The *Contractor* submits revised programmes at intervals no longer than	Four (4) weeks
35.1	The *Employer* is not willing to take over the works before the *completion date*	The *Employer* and Others will have access to the *works* during construction or prior to completion. Such access by the Employer and Others shall not relieve the *Contractor* from liability for the completion of the *works* in accordance with the Works Information and in terms of this contract.
4	**Testing and Defects**	
42.2	The *defects date* is	Twelve (12) months after Completion of the whole of the *works*
43.2	The *defects correction period* is	Two (2) weeks
5	**Payment**	
50.1	The *assessment interval* is	Four (4) weeks
50.1	The *currency of this contract* is the	South African Rand
51.2	The period within which payment is made is	Four (4) weeks
51.4	The *interest rate* is	The prime lending rate of the Nedbank Bank. as determined from time to time
6	**Compensation events**	
60.1	The *weather measurements* to be recorded for each calendar month are	the cumulative rainfall (mm) the number of days with rainfall more than 10 mm the number of days with minimum air temperature less than 0 degrees Celsius
60.1	The place where weather is to be recorded (on the Site) is	At the Construction Site Office and the records to be kept on site in a file clearly marked for this purpose
60.1	Assumed values for the ten-year return *weather data* for each *weather measurement* for each calendar month are:	

Month	Days	Month	Days
January	1	July	4
February	1	August	3
March	2	September	2
April	2	October	2
May	3	November	2
June	3	December	1

7	**Title**	No data required for this section of the *conditions of contract*
8	**Risks and Insurance**	

84.1	The *Employer* provides these insurances	Refer to the Insurance Clauses which is attached at the end of the Contract Data
84.2	The *Contractor* provides the insurance stated in	The Insurance Clauses which is attached at the end of the Contract Data. The insurances are in the joint names of the Parties and provide cover for events which are at the Contractor's risk from the starting date until the Defects Certificate or a termination certificate has been issued.
	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract for any one event is:	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993
9	**Termination**	No data required for this section of the *conditions of contract*
10	**Data for Main Options**	
B	Priced contract with Bill of Quantities	Refer to Contract Data Part C2: Pricing Data, Bill of Quantities as per tender submission
11	**Data for Option W1**	
W1.1	The *Adjudicator* is	The person appointed jointly by the parties from the list of adjudicators contained below
W1.2	The *Adjudicator nominating body* is	The current Chairman of Johannesburg Advocate's Bar Council
W1.4	The *tribunal* is	Arbitration
W1.4	If the *tribunal* is arbitration, the arbitration procedure is	The *arbitration procedure* is set out in The Rules for the Conduct of Arbitrations 2013 Edition, 7th Edition, published by The Association of Arbitrators, (Southern Africa)
W1.4	The place where arbitration is to be held is	Johannesburg, South Africa.
W1.4	The person or organisation who will choose an arbitrator	The *Arbitrator* is the person selected by the Parties as and when a dispute arises in terms of the relevant Z Clause, from the Panel of Arbitrators provided under the relevant Z clause if the arbitration procedure does not state who selects an arbitrator. The Arbitrator nominating body is the Chairman of the Johannesburg Advocates Bar Council.
12	**Data for Secondary Option Clauses**	
X7	**Delay Damages**	
	Delay damages of the *works* are	Amount per day is 0.05%, to the maximum of 10% of the Contract value

X13	**Performance bond**	
X13.1	The amount of the performance bond is	10% of the contract value. Pro-forma draft of a performance bond to be used is attached to this contract.
X16	**Retention**	
X18	**Limitation of Liability**	
X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to	Nil - Neither Party is liable to the other for any consequential or indirect loss, including but not limited to loss of profit, loss of income or loss of revenue
X18.2	For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to	The total cost of the incurred losses and or repairs to the damages caused.
X18.3	The *Contractor's* total liability to the Employer for defects due to his design which are not listed on the Defects Certificate is limited to	The total cost of the incurred losses and or repairs to the damages caused.
X18.4	The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to	The Contractor's total direct liability to the Employer for all matters arising under or in connection with this contract, other than the excluded matters, is unlimited and applies in contract, tort or delict and otherwise to the extent allowed under the law of the contract. The e excluded matters are amounts payable by the Contractor as stated in this contract for - Loss of or damage to the Employer's property, - Delay damages, - Defects liability, - Insurance liability to the extent of the Contractor's risks - loss of or damage to property (other than the *works*, Plant and Materials), - death of or injury to a person. - damage to third party property; and - infringement of an intellectual property right
Z	**The *Additional conditions of contract* are**	**Z1 – Z20**
	Amendments to the Core Clauses	

Z1	**Interpretation of the law**
Z1.1	**Add to core clause 12.3:** 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.
Z2	**Providing the Works:**
Z2.1	**Delete core clause 20.1 and replace with the following:** The *Contractor* provides the works in accordance with the Works Information and warrants that the results of the Works, when complete, shall be fit for their intended purpose
Z3	**Other responsibilities:**
Z3.1	**Add the following at the end of core clause 27:** The *Contractor* shall have satisfied himself, prior to the Contract Date, as to the completeness, sufficiency and accuracy of all information and drawings provided to him as at the Contract Date
Z3.2	The *Contractor* shall be responsible for the correct setting out of the *Works* in accordance with the original points, lines and levels stated in the *Works* Information or notified by the *Project Manager*, *Supervisor* or the *Employer*. Any errors in the positioning of the *Works* shall be rectified by the *Contractor* at the *Contractor's* own costs.
Z4	**Extending the defects date:**
Z4.1	**Add the following as a new core clause 46:** If the *Employer* cannot use the *works* due to a Defect, which arises after Completion and before the *defects date*, the *defects date* is delayed by a period equal to that during which the *Employer*, due to a Defect, is unable to use the *works*
Z4.2	If part of the *works* is replaced due to a Defect arising after Completion and before the *defects date*, the *defects date* for the part of the *works* which is replaced is delayed by a period equal to that between Completion and the date by when the part has been replaced
Z4.3	The *Project Manager* notifies the *Contractor* of the change to a *defect date* when the delay occurs. The period between Completion and an extended *defects date* does not exceed twice the period between Completion and the *defects date* stated in the Contract Data
Z5	**Termination**
Z5.1	**Add the following to core clause 91.1, at the second main bullet, fifth sub-bullet point, after the words "assets or":** "business rescue proceedings are initiated or steps are taken to initiate business recue proceedings"**.**
	Amendment to the Secondary Option Clauses
Z6	**Performance Bond**
Z6.1	**Amend the first sentence of clause X13.1 to read as follows:** The *Contractor* gives the *Employer* an unconditional, on-demand performance bond, provided by a bank which the *Project Manager* and the *Employer* have accepted, for the amount stated in the Contract Data and in the form set out in Annexure C.ii of this Contract Data.

Z6.2	**Add the following new clause as Option X13.2:** The *Contractor ensures* that the performance bond is valid and enforceable until the end of the *contract period.* If the terms of the performance bond specify its expiry date and the end of the *contract period* does not coincide with such expiry date, four weeks prior to the said expiry date, the *Contractor* extends the validity of the performance bond until the end of the *contract period.* If the *Contractor* fails to so extend the validity of the performance bond, the *Employer* may claim the full amount of the performance bond and retain the proceeds as cash security
Z7	**Limitation of liability:**
	Insert the following new clause as Option X18.6:
Z7.1	The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00
Z7.2	Notwithstanding any other clause in this contract, any proceeds received from any insurances or any proceeds which would have been received from any insurances but for the conduct of the *Contractor* shall be excluded from the calculation of the limitations of liability listed in the contract
	Additional Z Clauses
Z8	**Cession, delegation, and assignment**
Z8.1	The *Contractor* shall not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*, which consent shall not be unreasonably withheld. This clause shall be binding on the liquidator/business rescue practitioner /trustee (whether provisional or not) of the *Contractor*
Z8.2	The *Employer* may cede and delegate its rights and obligations under this contract to any person or entity
Z9	**Joint and several liability**
Z9.1	If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons, these persons are deemed to be jointly and severally liable to the *Employer* for the performance of the Contract.
Z9.2	The *Contractor* shall, within 1 week of the Contract Date, notify the *Project Manager* and the *Employer* of the key person who has the authority to bind the *Contractor* on their behalf.
Z9.3	The *Contractor* does not materially alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without prior written consent of the *Employer*.
Z10	**Ethics**
Z10.1	The *Contractor* undertakes:
Z10.1.1	not to give any offer, payment, consideration, or benefit of any kind, which constitutes or could be construed as an illegal or corrupt practice, either directly or indirectly, as an inducement or reward for the award or in execution of this contract;
Z10.1.2	to comply with all laws, regulations or policies relating to the prevention and combating of bribery, corruption and money laundering to which it or the *Employer* is subject, including but not limited to the Prevention and Combating of Corrupt Activities Act, 12 of 2004.

Z10.2 The *Contractor*'s breach of this clause constitutes grounds for terminating the *Contractor*'s obligation to Provide the Works or taking any other action as appropriate against the *Contractor* (including civil or criminal action). However, lawful inducements and rewards shall not constitute grounds for termination.

Z10.3 If the *Contractor* is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices, including but not limited to the making of offers (directly or indirectly), payments, gifts, gratuity, commission or benefits of any kind, which are in any way whatsoever in connection with the contract with the *Employer*, the *Employer* shall be entitled to terminate the contract in accordance with the procedures stated in core clause 92.2. the amount due on termination is A1.

Z11 Confidentiality

Z11.1 All information obtained in terms of this contract or arising from the implementation of this contract shall be treated as confidential by the *Contractor* and shall not be used or divulged or published to any person not being a party to this contract, without the prior written consent of the *Project Manager* or the *Employer*, which consent shall not be unreasonably withheld.

Z11.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the *Project Manager*.

Z11.3 This undertaking shall not apply to –

Z11.3.1 Information disclosed to the employees of the *Contractor* for the purposes of the implementation of this agreement. The *Contractor* undertakes to procure that its employees are aware of the confidential nature of the information so disclosed and that they comply with the provisions of this clause;

Z11.3.2 Information which the *Contractor* is required by law to disclose, provided that the *Contractor* notifies the *Employer* prior to disclosure so as to enable the *Employer* to take the appropriate action to protect such information. The *Contractor* may disclose such information only to the extent required by law and shall use reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed;

Z11.3.3 Information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time);

Z11.4 The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*

Z11.5 The *Contractor* ensures that all his Subcontractors abide by the undertakings in this clause.

Z12 *Employer*'s Step-in rights

Z12.1 If the *Contractor* defaults by failing to comply with his obligations and fails to remedy such default within 2 weeks of the notification of the default by the *Project Manager*, the *Employer*, without prejudice to his other rights, powers and remedies under the contract, may remedy the default either himself or procure a third party (including any subcontractor or supplier of the *Contractor*) to do so on his behalf. The reasonable costs of such remedial works shall be borne by the *Contractor*

Z12.2 The *Contractor* co-operates with the *Employer* and facilitates and permits the use of all required information, materials and other matter (including but not limited to documents and all other drawings, CAD materials, data, software, models, plans, designs, programs, diagrams, evaluations, materials, specifications, schedules, reports, calculations, manuals or other documents or recorded information (electronic or otherwise) which have been or are at any time prepared by or on behalf of the *Contractor* under the contract or otherwise for and/or in connection with the *works*) and generally does all things required by the *Project Manager* to achieve this end.

Z13 Liens and Encumbrances

Z13.1 The *Contractor* keeps the Equipment used to Provide the Services free of all liens and other encumbrances at all times. The *Contractor,* vis-a-vis the *Employer,* waives all and any liens which he may from time to time have, or become entitled to over such Equipment and any part thereof and procures that his Subcontractors similarly, vis-a-vis the *Employer,* waive all liens they may have or become entitled to over such Equipment from time to time

Z14 Intellectual Property

Z14.1 Intellectual Property (“IP”) rights means all rights in and to any patent, design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works.

Z14.2 IP rights remain vested in the originator and shall not be used for any reason whatsoever other than carrying out the *works.*

Z14.3 The *Contractor* gives the *Employer* an irrevocable, transferrable, non-exclusive, royalty free licence to use and copy all IP related to the *works* for the purposes of constructing, repairing, demolishing, operating and maintaining the works

Z14.4 The written approval of the *Contractor* is to be obtained before the *Contractor*'s IP made available to any third party which approval will not be unreasonably withheld or delayed. Prior to making any *Contractor*'s IP available to any third party the *Employer* shall obtain a written confidentiality undertaking from any such third party on terms no less onerous than the terms the *Employer* would use to protect its IP

Z14.5 The *Contractor* shall indemnify and hold the *Employer* harmless against and from any claim alleging an infringement of IP rights (**“the claim”**), which arises out of or in relation to:

Z14.5.1 the *Contractor’s* design, manufacture, construction or execution of the Works

Z14.5.2 the use of the *Contractor’s* Equipment, or

Z14.5.3 the proper use of the Works.

Z14.6 The *Employer* shall, at the request and cost of the *Contractor*, assist in contesting the claim and the *Contractor* may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it.

Z16 Dispute resolution:

Z16.1 Appointment of the Adjudicator

An *Adjudicator* is appointed when a dispute arises, from the Panel of Adjudicators below. The referring party nominates an Adjudicator, which nomination is either accepted or rejected by the other party. In the instance of a rejection of the nominated *Adjudicator,* the referring Party refers the appointment deadlock to the Chairman of the Johannesburg Bar Council, who appoints an *Adjudicator* listed in the Panel of Adjudicators below

The Parties appoint the *Adjudicator* under the NEC3 Adjudicator's Contract, April 2013

Panel of Adjudicators

Name	Location	Contact details (phone & e mail)
Adv. Ghandi Badela	Gauteng	+27 11 282 3700 ghandi@badela.co.za
Mr. Errol Tate Pr. Eng.	Durban	+27 11 262 4001 Errol.tate@mweb.co.za
Adv. Saleem Ebrahim	Gauteng	+27 11 535-1800 salimebrahim@mweb.co.za
Mr. Sebe Msutwana Pr. Eng.	Gauteng	+27 11 442 8555 sebe@civilprojects.co.za
Mr. Sam Amod	Gauteng	sam@samamod.com
Adv. Sias Ryneke SC	Gauteng	083 653 2281 reyneke@duma.nokwe.co.za
Mr. Emeka Ogbugo (Quantity Surveyor)	Pretoria	+27 12 349 2027 emeka@gosiame.co.za

Z16.2 Appointment of the Arbitrator

An *Arbitrator* is appointed when a dispute arises from the Panel of Arbitrators below. The referring party nominates an Arbitrator, which nomination is either accepted or rejected by the other party. In the instance of a rejection of the nominated *Arbitrator,* the referring Party refers the appointment deadlock to the Chairman of the Johannesburg Bar Council, who appoints an *Arbitrator* listed in the Panel of *Arbitrators* below

Panel of Arbitrators

Name	Location	Contact details (phone & e mail)
Adv. Ghandi Badela	Gauteng	+27 11 282 3700 ghandi@badela.co.za
Mr. Errol Tate Pr. Eng.	Durban	+27 11 262 4001 Errol.tate@mweb.co.za
Adv. Saleem Ebrahim	Gauteng	+27 11 535-1800 salimebrahim@mweb.co.za
Mr. Sebe Msutwana Pr. Eng.	Gauteng	+27 11 442 8555 sebe@civilprojects.co.za
Mr. Sam Amod	Gauteng	sam@samamod.com
Adv. Sias Ryneke SC	Gauteng	083 653 2281 reyneke@duma.nokwe.co.za
Mr. Emeka Ogbugo (Quantity Surveyor)	Pretoria	+27 12 349 2027 emeka@gosiame.co.za

Z17 Notification of a compensation event

Z17.1 Delete "eight weeks" in clause 61.3 and replace with "four weeks". Delete the words "unless the event arises from the Project Manager or the Supervisor giving an instruction, issuing a certificate, changing an earlier decision or correcting an assumption.

Z18 BBBEE Certificate

Z18.1	The *Contractor* shall be expected to annually present a compliant BEE Certificate. Failure to do adhere to these requirements shall be considered a material breach of the conditions of this Contract, the sanction for which may be a cancellation of this Contract.

Z19	**Communication**
Z19.1	**Add a new Core Clause** 14.5 and 14.6 to read as follows: The *Project Manager* requires the written consent of the Employer if an action will result in a change to the design, scope, and Works information that is 5% or more
Z19.2	The *Project Manager* requires the written consent of the Employer if an action will result in the Completion Date being extended by more than 30 days.

Z20	**Delegation**
	As stipulated by Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993 as amended the *Contractor* agrees to the following:
Z20.1	As part of this contract the *Contractor* acknowledge that it (mandatory) is an employer in its own right with duties as prescribed in the Occupational Health and Safety Act No 85 of 1993 as amended and agree to ensure that all work being performed, or Equipment, Plant and Materials being used, are in accordance with the provisions of the said Act, and in particular with regard to the Construction Regulations

PART C1.2b CONTRACT DATA

PART TWO – DATA PROVIDED BY THE *CONTRACTOR*

Clause	Statement	Data
10.1	The Contractor is (Name): Address: Telephone No. Fax No.	
11.2	The *working areas* are	Only the Site Area. See C4 'Site Information'
24.1	The *Contractor's Key people* are:	**CV's to be appended to Tender Schedule**
	Name: Job: Responsibility: Qualifications: Experience:	
	Name: Job: Responsibility: Qualifications: Experience:	
	Name: Job: Responsibility: Qualifications: Experience:	

Name:

Job:

Responsibility:

Qualifications:

Experience:

Name:

Job:

Responsibility:

Qualifications:

Experience:

11.2	The *completion date* is	24 months after signing of Contract by ACSA
11.2	The following matters will be included in the Risk Register	• Existing Services • Access to Site • Delay in supply of material and/or equipment • Progress of the works against the program • Travelling public and ACSA stakeholders • Material delivery lead items • Existing services • Project Program delay • Payment delay • Load shedding schedule
11.2	The *Works Information* is in	Part C3 ‘Scope of Works’ section of this contract
31.1	The programme identified in the	Program schedule as per tender submission

Part C1: Agreements and Contract Data

C1.3: Form of Guarantee

PRO FORMA FOR PERFORMANCE BOND

PERFORMANCE BOND

[TO BE REPLICATED ON BANK'S LETTERHEAD]

Brief description of contract……..

Name and address of Beneficiary.....

…….. (whom the contract defines as the Contractor).

We, the undersigned ..... and..... in our capacities as Guarantor's.....…….. of …….. **(Registration Number: ….)** (hereinafter called "the Bank") have been informed that …… hereinafter called the 'Principal') is your Contractor under such contract, which requires him to obtain an irrevocable, unconditional performance security.

At the request of the Principal, we ……..(name of bank) hereby irrevocably undertake to pay you, the Employer, any sum or sums not exceeding in total the amount of ……(the "Guaranteed Amount") upon receipt by us of your first written demand stating that such an amount (or lesser amount) as may be claimed is due and payable to the Employer.

This guarantee constitute an irrevocable, unconditional, non-negotiable and non-transferable undertaking to pay in accordance with the above, subject to the proviso that this Letter will not be interpreted as extending the Bank's liability to anything more than the Guaranteed Amount.

Notwithstanding anything to the contrary herein contained, the Bank's obligation shall be construed as principal and not as accessory to the contract and shall not be delayed or discharged by the fact that a dispute exists between the Employer and the Contractor.

We undertake to pay you such Guaranteed Amount upon receipt by us, within such period of 14 days of your first written demand stating that such an amount (or lesser amount) as may be claimed is due and payable to the Employer.

The guarantee shall be governed by and construed in accordance with the laws of the Republic of South Africa

Signed at _____ on _____20….

For:
Registration Number:

_____

Name & Position

As witnesses:

1. _____

2. _____

PART C1: AGREEMENTS AND CONTRACT DATA

C1.4: OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH & SAFETY ACT (ACT 85 Of 1993) & CONSTRUCTION REGULATION 5.1(k)

OBJECTIVES

To assist Airport Company South Africa (ACSA) in order to comply with the requirements of:

1. The Occupational Health & Safety (Act 85 of 1993) and its regulations and
2. The Compensation for Occupational Injuries & Diseases Act (Act 130 of 1993) also known as the (COID Act).

To this end an Agreement must be concluded before any contractor/ subcontracted work may commence

The parties to this Agreement are:

Name of Organisation: **AIRPORTS COMPANY SOUTH AFRICA** **King Shaka International Airport**
Physical Address: **Airport Company South Africa** **1 Canelands Drive, Administration Office MSO Building** **King Shaka International Airport** **La Mercy** **4407**

Hereinafter referred to as "Client"

Name of organisation:
Physical Address

Hereinafter referred to as "the Mandatary/ Principal Contractor"

MANDATORY'S MAIN SCOPE OF WORK

GENERAL INFORMATION FORMING PART OF THIS AGREEMENT

1. The Occupational Health & Safety Act comprises of SECTION 1-50 and all unrepealed REGULATIONS promulgated in terms of the former Machinery and Occupational Safety Act No.6 of 1983 as amended as well as other REGULATIONS which may be promulgated in terms of the Act and other relevant Acts pertaining to the job in hand.
2. "Mandatary" is defined as including as agent, a principal contractor or a contractor for work, but WITHOUT DEROGATING FROM HIS/HER STATUS IN HIS/HER RIGHT AS AN EMPLOYER or user of the plant
3. Section 37 of the Occupational Health & Safety Act potentially punishes Employers (PRINCIPAL CONTRACTOR) for unlawful acts or omissions of Mandataries (CONTRACTORS) save where a Written Agreement between the parties has been concluded containing arrangements and procedures to ensure compliance with the said Act BY THE MANDATARY.
4. All documents attached or refer to in the above Agreement form an integral part of the Agreement.
5. To perform in terms of this agreement Mandataries must be familiar and conversant with the relevant provisions of the Occupational Health & Safety Act 85 of 1993 (OHS Act) and applicable Regulations.
6. Mandatories who utilise the services of their own Mandatories (contractors) must conclude a similar Written Agreement with them.
7. Be advised that this Agreement places the onus on the Mandatary to contact the CLIENT in the event of inability to perform as per this Agreement.
8. This Agreement shall be binding for all work the Mandatary undertakes for the client.
9. All documentation according to the Safety checklist including a copy of the written Construction Manager appointment in terms of construction regulation 8, must be submitted 7 days before work commences.

THE UNDERTAKING

The Mandatary undertakes to comply with:

INSURANCE

1. The Mandatary warrants that all their employees and/or their contractor's employees if any are covered in terms of the COID Act, which shall remain in force whilst any such employees are present on the Client's premises. A letter is required prior commencing any work on site confirming that the Principal contractor or contractor is in good standing with the Compensation Fund or Licensed Insurer.
2. The Mandatary warrants that they are in possession of the following insurance cover, which cover shall remain in force whilst they and /or their employees are present on the Client's premises, or which shall remain in force for that duration of their contractual relationship with the Client, whichever period is the longest.
    a. Public Liability Insurance Cover as required by the Subcontract Agreement.
    b. Any other Insurance cover that will adequately makes provision for any possible losses and/or claims arising from their and /or their Subcontractors and/or their respective employee's acts and/or omissions on the Client's premises.

COMPLIANCE WITH THE OCCUPATIONAL HEALTH & SAFETY ACT 85 OF 1993

The Mandatary undertakes to ensure that they and/or their subcontractors if any and/or their respective employees will at all times comply with the following conditions:

1. All work performed by the Mandatary on the Client's premises must be performed under the close supervision of the Mandatary's employees who are to be trained to understand the hazards associated with any work that the Mandatary performs on the Client's premises.
2. The Mandatary shall be assigned the responsibility in terms of Section 16(1) of the OHSAct 85 of 1993, if the Mandatary assigns any duty in terms of Section 16(2), a copy of such written assignment shall immediately be forwarded to the Client.
3. The Mandatary shall ensure that he/she familiarise himself/herself with the requirements of the OHSAct 85 of 1993 and that s/he and his/her employees and any of his subcontractors comply with the requirements.
4. The Mandatary shall ensure that a baseline risk assessment is performed by a competent person before commencement of any work in the Client's premises. A baseline risk assessment document will include identification of hazards and risk, analysis and evaluation of the risks and hazards identified, a documented plan and safe work procedures to mitigate, reduce or control the risks identified, and a monitoring and review plan of the risks and hazards.
5. The Mandatary shall appoint competent persons who shall be trained on any Occupational Health & Safety aspect pertaining to them or to the work that is to be performed.
6. The Mandatary shall ensure that discipline regarding Occupational Health & Safety shall be strictly enforced.
7. Any personal protective equipment required shall be issued by the Mandatary to his/her employees and shall be worn at all times.
8. Written safe working practices/procedures and precautionary measures shall be made available and enforced and all employees shall be made conversant with the contents of these practises.
9. No unsafe equipment/machinery and/or articles shall be used by the Mandatary or contractor on the Client's premises.
10. All incidents/accidents referred to in OHSAct shall be reported by the Mandatary to the Provincial Director: Department of Labour as well as to the Client.
11. No user shall be made by the Mandatary and/or their employees and or their subcontractors of any of the Client's machinery/article/substance/plant/personal protective equipment without prior written approval.
12. The Mandatary shall ensure that work for which the issuing of permit is required shall not be performed prior to the obtaining of a duty completed approved permit.
13. The Mandatary shall ensure that no alcohol or any other intoxicating substance shall be allowed on the Client's premises. Anyone suspected to be under the influence of alcohol or any other intoxicating substance shall not be allowed on the premises. Anyone found on the premises suspected to be under the influence of alcohol or any other intoxicating substance shall be escorted off the said premises immediately.
14. Full participation by the Mandatary shall be given to the employees of the Client if and when they inquire into Occupational Health & Safety.

FURTHER UNDERTAKING

1. Only a duly authorised representative appointed in terms of Section 16.2 of the OHS Act is eligible to sign this agreement on behalf of the Mandatary. The signing power of this representative must be designated in writing by the Chief Executive Officer of the Mandatary. A copy of this letter must be made available to the Client.
2. The Mandatary confirms that he has been informed that he must report to the Client's management, in writing anything he/she deems to be unhealthy and /or unsafe. He has versed his employees in this regard.
3. The Mandatary warrants that he/she shall not endanger the health & safety of the Client's employees and other persons in any way whilst performing work on the Client's premises.
4. The Mandatary understands that no work may commence on the Client's premises until this

procedure is duly completed, signed and received by the Client.

5. Non-compliance with any of the above clauses may lead to an immediate cancellation of the contract.

ACCEPTANCE BY MANDATARY

In terms of section 37(2) of the Occupational Health & Safety Act 85 of 1993 and section 5.1(k) of the Construction Regulations 2014,

I …….a duly authorised 16.2 Appointee acting for and on behalf of ……..(company name) undertake to ensure that the requirements and the provision of the OHSAct 85 of 1993 and its regulations are complied with.

Mandatary – WCA/ Federated Employers Mutual No…….

Expiry date …….

_____ _____

SIGNATURE ON BEHALF OF MANDATARY **DATE**

(Warrant his authority to sign)

_____ _____

SIGNATURE ON BEHALF OF THE CLIENT **DATE**

AIRPORT COMPANY SOUTH AFRICA

PART C1: AGREEMENTS AND CONTRACT DATA

C1.5: ACSA INSURANCE CLAUSES

AIRPORTS COMPANY SOUTH AFRICA

INSURANCE CLAUSES FOR AIRSIDE CONSTRUCTION CONTRACTS WHERE THE AWARDED CONTRACT VALUE DOES NOT EXCEED R150 MILLION, AND THE CONSTRUCTION PERIOD DOES NOT EXCEED 36 MONTHS, AND THE DEFECTS LIABILITY PERIOD DOES NOT EXCEED 24 MONTHS

Each Party shall be responsible for effecting and maintaining the relevant insurances as specified below and to the extent relevant to the Contract.

1. **Insurance Effected By The Employer (Principle Controlled Insurance ("PCI"))**

1.1 Notwithstanding anything elsewhere contained in this Contract and without limiting the obligations, liabilities or responsibilities of the Contractor in anyway whatsoever (including but not limited to any requirement for the provision by the Contractor of any other insurances) the **Employer** shall effect and maintain for the duration of the construction and maintenance periods of the Contract - as appropriate in the joint names of the Employer, the Contractor and where relevant Sub-Contractors the following insurances which are subject to the terms, limits, exceptions and conditions of the Policy:

a) Contract Works/Contractors Public Liability/ Removal Of Lateral Support Liability

Section 1 Of The Policy – Contract Works

Contract Works Insurance for the full value of the Works to provide cover against accidental physical loss of or damage to the Works, Temporary Works and materials intended for incorporation in the Works all being the subject matter of this Contract including to the extent provided for in the policy whilst in transit or temporarily stored at any premises en route to or from the Site (other than where this is a continuation of Marine Transit) within the territorial limits of the policy.

This insurance may specifically exclude any cost necessary to replace or rectify any of the property insured, which is in a defective condition due to defect in design, plan specification, material or workmanship.

This insurance contains the following limitations and warrantees ;

Open Trench Limitation

In respect of loss or damage to open trenches and pipes, conduits or cables laid therein, caused directly or indirectly by rain, inundation or flood, Insurers liability shall be limited in respect of the aggregate length of open trenches at any one time to 2,500 meters.

Exposed Layer Works (applicable to works involving paving, roadways, bulk earthworks and runways and

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taxiways)
In respect of loss or damage to Exposed Layer Works relating to paving, roadways and runways (including taxiways) caused directly or indirectly by rain, inundation or flood, Insurers liability shall be limited in respect of the aggregate length of Exposed Layer Works at any one time to 2,500 meters.

Section II of the Policy – Contractors Public Liability

Public Liability Insurance which provides indemnity against legal liability in the event of accidental death of or injury to persons and/or loss of or damage to property(other than the Works the subject matter of this Contract) arising from the execution of the Contract with a limit of indemnity of **R100,000,000** in respect of any one occurrence or series of occurrences consequent on or attributable to one source or original cause.

Section III of the Policy – Removal Of Lateral Support Liability

Removal Of Lateral Support Liability which provides indemnity against legal liability in the event of accidental death of or injury to persons and/or loss of or damage to property (other than the Works the subject matter of this Contract) arising out of or in connection with shock or vibration or the removal or weakening of or interference with support to property in the vicinity of the Contract Site and arising out of or in connection with the Insured Contract (but not in respect of tunneling works) and occurring during the Period of Insurance.

The Limit of Indemnity being limited to R50,000,000 attributable to one source or original cause

b. **Contract Works SASRIA** – Providing physical loss of or damage to the Works, Temporary Works and materials intended for incorporation in the Works as covered by the underlying Contract Works policy as noted in (a) above due to perils as covered in terms of the SASRIA Contract Works wording as issued by SASRIA SOC.

The Contract Works SASRIA cover excludes consequential or indirect loss or damage of any kind or description whatsoever.

The SASRIA Contract Works policy is limited to **R500,000,000 (Incl VAT)** in the aggregate during the policy period of insurance.

The Contract Works SASRIA policy wording can be obtained from the SASRIA website http://www.sasria.co.za/ which notes the covers and policy exclusions.

c) **Aviation Liability Insurance** which provides indemnity against legal liability in the event of accidental death of or injury to persons and/or loss of or damage to property (other than the Works the subject matter of this Contract) arising from the execution of the Contract with a limit of indemnity of **R2,000,000,000** in respect of any one occurrence or series of occurrences consequent on or to one source or original cause.

This insurance is in respect of liability relating to aircrafts.

d) **Design & Construct Professional Indemnity Insurance** which provides indemnity against legal liability to pay compensation as a result of any actual or alleged negligent act, error or omission in the performance of the Professional Duties of the insured and arising from the execution of this project. The limit of indemnity under this insurance shall be ***R25,000,000 in the aggregate during the annual policy period of insurance that ACSA effect such cover during the policy period from 1 April to 31 March during each policy period of insurance.**

****The limits of indemnity applies to all ACSA contracts as a whole and does not apply specifically to this contract. The aggregate limit could be exhausted by claims under other ACSA contracts and there is no guarantee that this insurance cover will provide sufficient cover to this specific contract should the aggregate limit be exhausted.***

The Policy only covers the rectification of the works and excludes all consequential losses.

Professional Duties do not include:

a) Labour and construction work which would normally be the responsibility of the building or engineering contractor.

b) Supervision of the construction works usually undertaken by a building or engineering contractor.

1. 2 The **Contractor** shall familiarise itself fully with the details of such insurance effected by the Employer. The Contractor shall comply to all the terms and conditions of the Employer arranged policies and the Contractor shall be deemed to be fully aware of all the conditions, limits, limitations, exclusions/exceptions and deductibles that are contained in the Employer arranged policies. Copies of the Employer arranged policies are obtainable on request from the Employer and if the Contractor is of the opinion that additional insurance is required, such shall be for the Contractors account.

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1.3 The Employer shall pay the premium in connection with the insurances effected by the Employer. The Employer is entitled to all return premiums, dividends, discounts, or adjustments in connection with the insurances effected by the Employer.

1.4 The Contractor shall not include any premium charges for this insurance except to the extent, which he may deem necessary in his own interests to effect supplementary insurance to the insurance effected by the Employer. The Employer reserves the right to call for full information regarding insurance costs included by the Contractor.

In the event that the Contractor purchases any insurances in addition to those indicated above, the premium and taxes, duties, etc. shall be borne entirely by the contractor.

1.5 Any further clarification of the scope of cover provided by the Policies arranged by the Employer should be obtained from the Employer.

1.6 The Contractor and/or any other party who obtains indemnity under the policies effected under 1.1 shall become liable for the deductibles (first amount payable) which are applicable in respect of each and every occurrence or series of occurrences attributable to one source or cause giving rise to loss or damage or indemnifiable liability. The deductibles applicable to the policies effected under 1.1 are as follows:

a) Contract Works/Contractors Public Liability/ Removal Of Lateral Support Liability

Unless stated otherwise in the Policy Extensions the Deductibles shall be as follows which will apply in respect of each and every occurrence or series of occurrences arising out of or in connection with any one event giving rise to loss or damage:

Section 1 Of The Policy – Contract Works

In respect of all loss or damage **R150,000** but increased to **R250,000** in respect of loss or damage arising out of or in connection with testing and commissioning.

Section 2 Of The Policy – Contractors Public Liability

R75,000 each and every claim in respect of Property Damage.

Section 3 Of The Policy – Removal Of Lateral Support Liability

R75,000 each and every claim.

b) **Contract Works SASRIA**

In respect of theft as a result of the SASRIA perils insured - **R25,000** each and every occurrence .

c) **Aviation Liability Insurance** ;

In respect of each and every loss or damage or injury – **R300 000.**

d) **Design & Construct Professional Indemnity Insurance**

a) In respect of contracts under R50 million at award – **R5,000,000.**
b) **In respect of contracts over R50 million at award – R10,000,000**

1.7 In the event of any occurrence which is likely to give rise to a claim under the insurance arranged by the Employer, the Contractor shall:

a) In addition to any statutory requirement or other requirements contained in the Contract immediately notify the Employer and the Employer's Insurance Brokers by telephone, mobile phone or email giving the circumstances, nature and an estimate of the loss or damage or liability. The Contractor must also complete the Claim Advice Form (Appendix "A").

The following persons/insurers must be advised immediately on the occurrence of a claim on site or even a possibility of a claim arising due to an incident occurring on site:

Airports Company South Africa :

Nokulunga Masiza

Tel: +27 (0)11 723 1400

M: +27 (0)79 512 0532

Nokulunga.Masiza@airports.co.za

Buhle Mnguni

D: +27 (0)11 723 1400
M: +27 (0)74 535 9075

Buhle.Mnguni@airports.co.za

b) Preserve damage and make it available for inspection by a representative of the Insurers.

c) Wherever possible, photographs of damage should be taken.

d) Inform the police authorities promptly in the event of loss or damage by theft, burglary or any malicious persons(s) for the purpose of recovering any property so lost, discovering the guilty person or persons, and having him, her or them duly prosecuted.

e) Advise the Insurers of any other insurance(s) which may cover the same loss, damage or injury, or any part thereof.

f) Give to the Insurers every assistance to enable the Insurers to settle or resist any claim against the Insured, or institute any proceedings;

g) On completion the Claims Advice Form, the form must be sent to the Employers Insurance Brokers for further action (the original may be emailed to the Employers Insurance Broker). (Please do not remove the Claims Advice Form out of this document. Rather photocopy the form and send the copy to the Employers Insurance Brokers).

h) The Employer and the employers Insurance brokers / Insurers or their appointed loss adjusters shall have the right to make all and any enquiry's on the Site of the Works or elsewhere as to the cause and results of any such occurrence and the Contractor shall co-operate in carrying out such enquiry's.

i) The Contractor, Project Managers and Consultants must allow free access to Insurers' assessors for the purpose of investigating and assessing the loss or damage.

j) **The Contractor must not proceed with the making good any off the loss without the prior authorisation of the Insurers.**

AIRPORTS COMPANY SOUTH AFRICA

k) The Contractor must keep separate records of the costs involved in making good any loss or damage and these records should be available at all times for inspection by Insurers. Such records should include inter alia the entire cost of labour, materials, transport and equipment.

l) Where required by the Employer, negotiate the settlement of claims with the Insurer or their appointed loss adjusters through the Employer's Insurance Brokers and shall obtain the Employer's approval of such settlement.

m) Once the amount of a claim is agreed by the Insurers and the Contractor, an "Agreement of Loss" form must be signed by the Contractor and if required this shall be counter signed by the Employer or the Project Managers.

n) The proceeds of such claim will, if required by the Employer, be paid net of any Deductible applicable under the policy by the Insurers to the Employer who on receipt thereof will arrange for payment to be made in terms of the Conditions of Contract. In the event that it is agreed by the Employer that such claims payment be made directly to the Contractor, the Contractor shall arrange for the Employer to endorse the "Agreement of Loss" to this effect.

2. Insurance Effected by the Contractor.

In addition to Clause 1.1 in respect of the insurances effected by the Employer the following Insurances to be effected by the Contractor :

2.1 Without limiting the Contractor's obligations, responsibilities and liabilities, the Contractor and Sub-contractor shall maintain at the Contractor's and Subcontractor's expense and where applicable provide as a minimum the following insurances:

a) **Insurance of Construction Plant and Equipment** (including tools offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the site for a sum sufficient to provide for their replacement.

The Employer shall be named as additional insured and a waiver of subrogation shall be provided to the Employer.

b) **Contractor's Common Law Liability/ Worker's Compensation Insurance**

The Contractor shall take out and maintain employer's liability insurance with a limit of indemnity of not less than **R20,000,000** and/or workmen's compensation insurance covering personal injury to or death of the employees of the Contractor engaged in connection with the Works to the minimum value required by applicable law.

The Contractor shall procure that its Subcontractors take out and maintain similar insurance in respect of its Subcontractor's personnel performing the Works.

In the event that a claim is made against the Employer in connection with such insurance, the Contractor shall indemnify and hold harmless the Employer against any such claim. The Employer shall be named as additional insured and a waiver of subrogation shall be provided to the Employer.

c) **Motor Vehicle Liability Insurance** comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability indemnity with a limit of indemnity of not less than **R5 000 000** for all owned, non-owned, leased and hired vehicles.

d) **Insurance For Buy-Down Cover Of Employer's Deductibles**

Should the Contractor believe that the Employer effected Contract Works, Public Liability and Design & Construct Professional Indemnity deductibles as noted in Clause 1.6 (a),(c) and (d) be considered to be unacceptable to the Contractor, then the Contractor must obtain Buy Down cover for these deductibles to a deductible considered by the Contractor as being acceptable in respect of the works being undertaken.

e) Where the Contract involves manufacturing and/or fabrication of the Works or parts thereof at premises other than at the Contract Site the Contractor shall satisfy the Employer that all materials and equipment for incorporation in the Works are adequately insured during manufacture and/or fabrication. In the event of the Employer having an insurable interest in such Works during manufacture or fabrication then such interest shall be noted by endorsement to the relevant Policies of Insurance.

Such insurance shall name Employer as an additional insured, and shall be primary to any insurance maintained by the Employer.

f) **Public Liability** insurances in excess of the Employers Public Liability insurances as stated under clause 1.1(a).

g) **Aviation Liability** insurances in excess of the Employers Aviation Liability insurances as stated under clause 1.1(c).

h) **Contractor's Professional Indemnity Insurance** in excess of the Employers Design & Construct Professional Indemnity insurances as stated under clause 1.1(d) and if applicable to cover the deductible that applies to the Employer effected insurance.

i) **Marine Cargo Insurance (If Applicable)**

Cover : Imports of cargo, equipment, goods, plant, machinery and materials ("**Insured Property**") to the site where the Permanent Works will be constructed.

Sum Insured: Not less than the value of the largest single cargo shipment, conveyance or the value in storage, whichever is the greater (CIF plus 10%).

Marine / Air Cargo Insurance covering the Insured Property against all risks of physical loss or damage while in transit by land, sea or air from country of origin anywhere in the world to the site where the Permanent Works will be constructed including loading, or vice versa, from the commencement of the time the insured items are loaded prior leaving the warehouse or factory for shipment to the said site.

The insured parties are the Employer, the Contractor and its Subcontractors, and all their personnel involved in the execution of any Works on the construction site.

j) **Miscellaneous Insurance**

Other insurance as is customary, desirable or necessary to comply with applicable Laws in the Country.

2.2 The insurances to be provided by the Contractor and his Sub-contractor shall be effected with Insurers and on terms approved by the Employer (which approval shall not be unreasonably withheld) and shall be maintained in force for the duration required (including any period of maintenance/defects liability period). The Contractor shall within twenty eight (28) days of commencement of the contract produce to the Employer the relevant Policy or Policies of Insurance.

2.3 In the event that the Contractor or his Sub-contractor receives any notice of cancellation or restrictive modification to the insurance provided to them they shall immediately notify the Employer in writing of such cancellation or restriction and shall advise what action the Contractor or his Sub-contractor will take to remedy such action.

If the Contractor fails to effect and keep in force the insurances referred to then the Employer may effect and keep in force any such insurances and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount paid by the Employer from any monies due or which may become due to the Contractor or recover same as a debt from the Contractor.

2.4 **Sub-Contractors.**

The Contractor shall:

a) ensure that all potential and appointed Sub-contractors are aware of the whole contents of these Insurance Clauses, and

b) enforce the compliance by sub contract agreement between the Contractor and Sub-Contractor and where applicable that the Sub Contractor effect similar insurance relating to the insurances required to be effected by the Contractor under Clause 2 (Contractor effected insurances).

APPENDIX A

CONTRACTORS CLAIMS ADVICE FORM - FOR ACSA INSURED CONTRACTS UNDER THE ANNUAL POLICY

Send to : Airports Company South Africa

10

APPENDIX A

CONTRACTORS CLAIMS ADVICE FORM - FOR ACSA INSURED CONTRACTS UNDER THE ANNUAL POLICY

Send to : Airports Company South Africa

E-Mail The Following People :

Nokulunga.Masiza@airports.co.za

Buhle.Mnguni@airports.co.za

*.....
.....
.....
.....
.....
.....

* (Please provide name of contracting company, site address, telephone numbers and e-mail address).

RE :ACSA CONTRACTORS : CAR/PL/PI : CLAIM

Date of loss: _____

Reported to site agent by: _____ Date: _____

Reported to Insurance Broker by: _____ Date: _____

Locality of Incident _____

How did the loss occur (cause) ? _____

Details and nature of loss or damage to Contract Works _____

Details of other property damaged _____

_____

Names and address of witnesses _____

Estimated cost of repairs (Separate records of all costs must be kept) R_____

Person whom assessor should contact _____

Telephone/Mobile Numbers of Contact Person_____

Email Address of Contact Person_____

PART C2: PRICING DATA

C2.1: Pricing Instructions

- All Prices are to be shown excluding VAT unless instructed otherwise by the *Employer* in Tender Data or in an instruction the *Employer* has given before the tenderer enters his Prices.
- If there is insufficient space in the Price List which follows, state in which document the Price List is contained.
- All prices are fixed and firm.
- There is no CPI escalation on the prices.
- Prices must include customs and duties for items procured oversea.

C2.2 Bill of Quantities

Part A: Preliminary and General					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Site establishment and removal, cleaning and rehabilitation after the completion of the works.	Sum	1	R	R
2	Provisional sum for Permits, General Security Awareness Training and Airside Induction Training, (Claim on proven cost)	Sum	Sum	R50 000.00	R50 000.00
3	Compile and submission of Health and Safety File document.	Sum	Once off	R	R
4	Original Equipment Manufacturer (OEM) Training for Electrical Maintenance staff	Sum	Sum	R	R

5	Materials and other Consumables costs	Sum	1	R	R
6	Provisional Sum for Electrical Wiring Cable Cost (Claim on proven cost)	Prov Sum	Prov Sum	R1 500 000.00	R1 500 000.00
7	As built Drawings and Manuals	Sum	1	R	R
8	FAT- Customer participation in Factory Acceptance Testing as described in the Scope of Supply. Exclude the cost of living, lodging and travel expenses for the customer representatives.	Sum	1	R	R
Total Part A: Excluding VAT					**R**

Part B: Equipment AS4 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Supply, delivery, and offload of 0.8MVA Dry-Type Transformers with Aluminium Windings, fitted with Perspex Inside to enable inspection without making a contact with live Busbars. (refer to the specifications on Part C3)	Each	2	R	R
2	Supply fully galvanized Extractor Fans including Control Units (refer to the specifications on Part C3)	Each	4	R	R
Total Part B: Excluding VAT					**R**

Part C: - Installation and Testing AS4 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Decommissioning of the existing 0.8MVA Oil-Type Transformers.	Each	2	R	R
2	Disposal: Buy-back cost or Revenue generated from disposal of the existing Transformers. Contractor to remove from site (Airport) at the contractor's cost. Provide a safe Disposal Certificates. Performance Bond guarantee to be released pending the submission of safe disposal certificates. This revenue generated will be subtracted from TOTAL Part C	Each	2	(-) R	(-) R
3	Preparation, rigging and installation work of the new 0.8MVA Dry-Type Transformers as per the scope of works in C3.1 of part 3.	Each	2	R	R
4	Cable Termination and modification on the existing Busbar sizes and ensure compatibility with the new Dry-Type transformers as per the scope of works in C3.1 of part 3	Each	2	R	R
5	Testing and issuing of the CoC as per the scope of works in C3.1 of part 3	Each	2	R	R

6	Decommissioning and Disposal of the existing Extractor Fans, perform Air-circulation assessment, install new Extractor Fans including control units and shall be linked on the existing Fire Detection System to ensure compliance with SANS 10139 & SANS 10400-T. In case of a fire alarm, the Extractor fans should shut off.	Each	4	R	R
7	Supply and delivery of paint, prepare floor and paint cement floor with durable grey, refer to the specification on C3.1 of part 3. (1.38)	m^2	24.84	R	R
8	Supply and delivery of paint, and paint Transformer room wall to match the existing colour and apply two coats.	m^2	85	R	R
9	Transformer marking or labelling using suitable material.	Each	2	R	R
10	Transformer Room Door markings (TRANSFORMER 1, TRANSFORMER2)	Each	2	R	R
Total Part C: Excluding VAT					**R**

Part D: Equipment AS3 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Supply, delivery, and offload of 0.15MVA Dry-Type Transformers with Aluminium Windings, fitted with Perspex Inside to enable inspection without making a contact with live Busbars. (referrer to specifications)	Each	2	R	R
2	Supply fully galvanized Extractor Fans including Control Units (refer to the specifications on Part C3)	Each	4	R	R
Total Part D: Excluding VAT					**R**

Part E: - Installation and Testing AS3 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Decommissioning of the existing 0.15MVA Oil-Type Transformers.	Each	2	R	R

2	Disposal: Buy-back cost or Revenue generated from disposal of the existing Transformers. Contractor to remove from site (Airport) at the contractor's cost. Provide a safe Disposal Certificates. Performance Bond guarantee to be released pending the submission of safe disposal certificates. This revenue generated will be subtracted from TOTAL Part E	Each	2	(-) R	(-) R
3	Preparation, rigging and installation work of the new 0.15MVA Dry-Type Transformers as per the scope of works in C3.1 of part 3.	Each	2	R	R
4	Cable Termination and modification on the existing Busbar sizes and ensure compatibility with the new Dry-Type transformers as per the scope of works in C3.1 of part 3	Each	2	R	R
5	Testing and issuing of the CoC as per the scope of works in C3.1 of part 3	Each	2	R	R
6	Decommissioning and Disposal of the existing Extractor Fans, perform Air-circulation assessment, install new Extractor Fans including control units and shall be linked on the existing Fire Detection System to ensure compliance with SANS 10139 & SANS 10400-T. In case of a fire alarm, the Extractor fans should shut off.	Each	4	R	R
7	Supply and delivery of paint, prepare floor and paint cement floor with durable grey, refer on the specification on C3.1 of part 3. (1.38)	m^2	24.84	R	R
8	Supply and delivery of paint, and paint Transformer room wall to match the existing colour and apply two coats.	m^2	85	R	R
9	Transformer marking or labelling using suitable material.	Each	2	R	R
10	Transformer Room Door markings (TRANSFORMER 1, TRANSFORMER2, MV ROOM)	Each	2	R	R
Total Part E: Excluding VAT					**R**
Part F: Equipment AS2 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Supply, delivery, and offload of 0.15MVA Dry-Type Transformers with Aluminium Windings, fitted with Perspex Inside to enable inspection without making a contact with live Busbars. (refer to the specifications on Part C3)	Each	2	R	R
2	Supply fully galvanized Extractor Fans including Control Units (refer specifications)	Each	4	R	R
Total Part F: Excluding VAT					**R**

Part G: - Installation and Testing AS2 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Decommissioning of the existing 0.15MVA Oil-Type Transformers.	Each	2	R	R
2	Disposal: Buy-back cost or Revenue generated from disposal of the existing Transformers. Contractor to remove from site (Airport) at the contractor's costs. Provide a safe Disposal Certificates. Performance Bond guarantee to be released pending the submission of safe disposal certificates. This revenue generated will be subtracted from TOTAL Part G	Each	2	(-) R	(-) R
3	Preparation, rigging and installation work of the new 0.15MVA Dry-Type Transformers as per the scope of works in C3.1 of part 3.	Each	2	R	R
4	Cable Termination and modification on the existing Busbar sizes and ensure compatibility with the new Dry-Type transformers as per the scope of works in C3.1 of part 3	Each	2	R	R
5	Testing and issuing of the CoC as per the scope of works in C3.1 of part 3	Each	2	R	R
6	Decommission and Disposal of the existing Extractor Fans, perform Air-circulation assessment, install new Extractor Fans including control units and shall be linked on the existing Fire Detection System to ensure compliance with SANS 10139 & SANS 10400 -T. In case of a fire alarm, the Extractor fans should shut off.	Each	4	R	R
7	Supply and delivery of paint, prepare floor and paint cement floor with durable grey, refer on the specification on C3.1 of part 3. (1.38)	m^2	24.84	R	R
8	Supply and delivery of paint, and paint Transformer room wall to match the existing colour and apply two coats.	m^2	85	R	R
9	Transformer marking or labelling using suitable material.	Each	2	R	R
10	Transformer Room Door markings (TRANSFORMER 1, TRANSFORMER2)	Each	2	R	R
Total Part G: Excluding VAT					**R**

Part H: Equipment AS1 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Supply, delivery, and offload of 0.8MVA Dry-Type Transformers with Aluminium Windings, fitted with Perspex Inside to enable inspection without making a contact with live Busbars. (refer to the specifications)	Each	2	R	R

2	Supply fully galvanized Extractor Fans including Control Units (refer to the specifications)	Each	4	R	R
Total Part H: Excluding VAT					**R**

Part I: - Installation and Testing AS1 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Decommissioning of the existing 0.8MVA Oil-Type Transformers.	Each	2	R	R
2	Disposal: Buy-back cost or Revenue generated from disposal of the existing Transformers. Contractor to remove from site (Airport) at the contractor's cost. Provide a safe Disposal Certificates. Performance Bond guarantee to be released pending the submission of safe disposal certificates. This revenue generated will be subtracted from TOTAL Part I	Each	2	(-) R	(-) R
3	Preparation, rigging and installation work of the new 0.8MVA Dry-Type Transformers as per the scope of works in C3.1 of part 3.	Each	2	R	R
4	Cable Termination and modification on the existing Busbar sizes and ensure compatibility with the new Dry-Type transformers as per the scope of works in C3.1 of part 3	Each	2	R	R
5	Testing and issuing of the CoC as per the scope of works in C3.1 of part 3	Each	2	R	R
6	Decommissioning and Disposal of the existing Extractor Fans, perform Air-circulation assessment, install new Extractor Fans including control units and shall be linked on the existing Fire Detection System to ensure compliance with SANS 10139 & SANS 10400-T. In case of a fire alarm, the Extractor fans should shut off.	Each	4	R	R
7	Supply and delivery of paint, prepare floor and paint cement floor with durable grey, refer on the specification on C3.1 of part 3. (1.38)	m^2	24.84	R	R
8	Supply and delivery of paint, and paint Transformer room wall to match the existing colour and apply two coats.	m^2	85	R	R
9	Transformer marking or labelling using suitable material.	Each	2	R	R
10	Transformer Room Door markings (TRANSFORMER 1, TRANSFORMER2)	Each	2	R	R
Total Part I: Excluding VAT					**R**

Part J: Equipment A2 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**

1	Supply, delivery, and offload of 2MVA Dry-Type Transformers with Copper Windings, fitted with Perspex Inside to enable inspection without making a contact with live Busbars. (refer to the specifications)	Each	2	R	R
2	Supply fully galvanized Extractor Fans including Control Units (refer to the specifications)	Each	2	R	R
Total Part J: Excluding VAT					**R**

Part K: - Installation and Testing A2 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Decommissioning of the existing 2MVA Oil-Type Transformers.	Each	2	R	R
2	Disposal: Buy-back cost or Revenue generated from disposal of the existing Transformers. Contractor to remove from site (Airport) at the contractor's cost. Provide a safe Disposal Certificates. Performance Bond guarantee to be released pending the submission of safe disposal certificates. This revenue generated will be subtracted from TOTAL Part K	Each	2	(-) R	(-) R
3	Preparation, rigging and installation work of the new 2MVA Dry-Type Transformers as per the scope of works in C3.1 of part 3.	Each	2	R	R
4	Cable Termination and modification on the existing Busbar sizes and ensure compatibility with the new Dry-Type transformers as per the scope of works in C3.1 of part 3	Each	2	R	R
5	Testing and issuing of the CoC as per the scope of works in C3.1 of part 3	Each	2	R	R
6	Decommissioning and Disposal of the existing Extractor Fans, perform Air-circulation assessment, install new Extractor Fans including control units and shall be linked on the existing Fire Detection System to ensure compliance with SANS 10139 & SANS 10400-T. In case of a fire alarm, the Extractor fans should shut off.	Each	4	R	R
7	Supply and delivery of paint, prepare floor and paint cement floor with durable grey, refer on the specification on C3.1 of part 3. (1.38)	m^2	53,5	R	R
8	Supply and delivery of paint, and paint Transformer room wall to match the existing colour and apply two coats of paint.	m^2	125	R	R
9	Transformer marking or labelling using suitable material.	Each	2	R	R
Total Part K: Excluding VAT					**R**

Part L: Equipment A1 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Supply, delivery, and offload of 2MVA Dry-Type Transformers with Copper Windings, fitted with Perspex Inside to enable inspection without making a contact with live Busbars. (refer to the specifications)	Each	5	R	R
2	Supply fully galvanized Extractor Fans including Control Units (refer to the specifications)	Each	4	R	R
Total Part L: Excluding VAT					**R**

Part M: - Installation and Testing A1 Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Decommissioning of the existing 2MVA Oil-Type Transformers.	Each	5	R	R
2	Disposal: Buy-back cost or Revenue generated from disposal of the existing Transformers. Contractor to remove from site (Airport) at the contractor cost. Provide a safe Disposal Certificates. Performance Bond guarantee to be released pending the submission of safe disposal certificates. This revenue generated will be subtracted from TOTAL Part M	Each	5	(-) R	(-) R
3	Preparation, rigging and installation work of the new 2MVA Dry-Type Transformers as per the scope of works in C3.1 of part 3.	Each	5	R	R
4	Cable Termination and modification on the existing Busbar sizes and ensure compatibility with the new Dry-Type transformers as per the scope of works in C3.1 of part 3	Each	5	R	R
5	Testing and issuing of the CoC as per the scope of works in C3.1 of part 3	Each	5	R	R
6	Decommissioning and Disposal of the existing Extractor Fans, perform Air-circulation assessment, install new Extractor Fans including control units and shall be linked on the existing Fire Detection System to ensure compliance with SANS 10139 & SANS 10400-T. In case of a fire alarm, the Extractor fans should shut off.	Each	4	R	R
7	Supply and delivery of paint, prepare floor and paint cement floor with durable grey, refer on the specification on C3.1 of part 3. (1.38)	m^2	95	R	R
8	Supply and delivery of paint, and paint Transformer room wall to match the existing colour and apply two coats.	m^2	273	R	R

9	Transformer marking or labelling using suitable material.	Each	2	R	R
Total Part M: Excluding VAT					**R**

Part N: Equipment MSP Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Supply, delivery, and offload of 1.6MVA Dry-Type Transformers with Copper Windings, fitted with Perspex Inside to enable inspection without making a contact with live Busbars.	Each	1	R	R
2	Supply fully galvanized Extractor Fans including Control Units (refer to the specifications)	Each	2	R	R
Total Part N: Excluding VAT					**R**

Part O: - Installation and Testing MSP Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Decommissioning of the existing 1.6MVA Oil-Type Transformers.	Each	1	R	R
2	Disposal: Buy-back cost or Revenue generated from disposal of the existing Transformers. Contractor to remove from site (Airport) at the contractor's cost. Provide a safe Disposal Certificate. Performance Bond guarantee to be released pending the submission of safe disposal certificates. This revenue generated will be subtracted from TOTAL Part O	Each	1	(-) R	(-) R
3	Preparation, rigging and installation work of the new 1.6MVA Dry-Type Transformers as per the scope of works in C3.1 of part 3.	Each	1	R	R
4	Cable Termination and modification and ensure compatibility with the new Dry-Type transformers as per the scope of works in C3.1 of part 3	Each	1	R	R
5	Testing and issuing of the CoC as per the scope of works in C3.1 of part 3	Each	1	R	R
6	Decommissioning and Disposal of the existing Extractor Fans, perform Air-circulation, install new Extractor Fans including control units and shall be linked on the existing Fire Detection System to ensure compliance with SANS. In case of a fire alarm, the Extractor fans should shut off.	Each	2	R	R
7	Supply and delivery of paint, prepare floor and paint cement floor with durable grey, refer on the specification on C3.1 of part 3. (1.38)	m^2	56	R	R
8	Supply and delivery of paint, and paint Transformer room wall to match the existing colour and apply two coats.	m^2	90	R	R

9	Transformer marking or labelling using suitable material.	Each	1	R	R
Total Part O: Excluding VAT					**R**

Part P: Equipment ATNS Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Supply, delivery, and offload of 0.8MVA Dry-Type Transformers with Aluminium Windings, fitted with Perspex Inside to enable inspection without making a contact with live Busbars. (refer to the specifications)	Each	2	R	R
2	Supply fully galvanized Extractor Fans including Control Units (refer to the specifications)	Each	2	R	R
Total Part P: Excluding VAT					**R**

Part Q: - Installation and Testing ATNS Substation					
Item	**Description**	**UOM**	**QTY**	**Price per Unit**	**Total Price Excl. VAT.**
1	Decommissioning of the existing 0.8MVA Oil-Type Transformers.	Each	2	R	R
2	Disposal: Buy-back cost or Revenue generated from disposal of the existing Transformers. Contractor to remove from site (Airport) at the contractor's cost. Provide a safe Disposal Certificate. Performance Bond guarantee to be released pending the submission of safe disposal certificates. This revenue generated will be subtracted from TOTAL Part Q	Each	2	(-) R	(-) R
3	Preparation, rigging and installation work of the new 0.8 MVA Dry-Type Transformers as per the scope of works in C3.1 of part 3.	Each	2	R	R
4	Cable Termination and modification and ensure compatibility with the new Dry-Type transformers as per the scope of works in C3.1 of part 3	Each	2	R	R
5	Testing and issuing of the CoC as per the scope of works in C3.1 of part 3	Each	2	R	R
6	Decommissioning and Disposal of the existing Extractor Fans, perform Air-circulation, install new Extractor Fans including control units and shall be linked on the existing Fire Detection System to ensure compliance with	Each	2	R	R

	SANS 10139 & SANS 10400-T. In case of a fire alarm, the Extractor fans should shut off.				
7	Supply and delivery of paint, prepare floor and paint cement floor with durable grey, refer on the specification on C3.1 of part 3. (1.38)	m^2	18	R	R
8	Supply and delivery of paint, and paint Transformer room wall to match the existing colour and apply two coats.	m^2	42	R	R
9	Transformer marking or labelling using suitable material.	Each	2	R	R
10	Supply and install a labelling (word) for LV ROOM, MV ROOM, GENERATOR ROOM, TRANSFORMER ROOM doors.	Each	4	R	R
11	HV bushing with metal part	Each	9	R	R
12	Support insulators for Terminal	Each	9	R	R
13	Winding temperature indicator	Each	18	R	R
Total Part Q: Excluding VAT					**R**

PART R: King Shaka International Airport – Commissioning and Documentation					
Item	**Description**	**UOM**	**QTY**	**Rate per Unit**	**Total Excl. VAT.**
1	Commissioning and handover of all installed 2 MVA equipment including documentation.	Each	7	R	R
2	Commissioning and handover of all installed 1,6 MVA equipment including documentation	Each	1	R	R
3	Commissioning and handover of all installed 0,8 MVA equipment including documentation	Each	6	R	R
4	Commissioning and handover of all installed 0,15 MVA equipment including documentation	Each	4	R	R
5	Equipment familiarisation for ACSA maintenance team (26 Personnel)	Sum	Sum	R	R
SUB-TOTAL Excluding VAT: PART R: Commissioning and Documentation					**R**

DESCRIPTION	**TOTAL**
Part A: Preliminary and General	**R**
Part B: Equipment AS4 Substation	**R**
Part C: - Installation and Testing AS4 Substation	**R**

Part D: Equipment AS3 Substation	**R**
Part E: - Installation and Testing AS3 Substation	**R**
Part F: Equipment AS2 Substation	**R**
Part G: - Installation and Testing AS2 Substation	**R**
Part H: Equipment AS1 Substation	**R**
Part I: - Installation and Testing AS1 Substation	**R**
Part J: Equipment A2 Substation	**R**
Part K: - Installation and Testing A2 Substation	**R**
Part L: Equipment A1 Substation	**R**
Part M: - Installation and Testing A1 Substation	**R**
Part N: Equipment MSP Substation	**R**
Part O: - Installation and Testing MSP Substation	**R**
Part P: Equipment ATNS Substation	**R**
Part Q: - Installation and Testing ATNS Substation	**R**
Part R: King Shaka International Airport – Commissioning and Documentation	**R**
SUB – TOTAL S = (Part A to Part R)	**R**
Contingency (10% of Sub Total S)	**R**
Sub Total T (Tendered Amount Excluding Vat) (Sub-Total (S + Contingency))	**R**
Vat (15% of Sub-Total T)	**R**
***Total Tendered Amount (Sub-Total (T + Vat)) Form of Offer to be carried over to page 2 of this contract.**	**R**

PART C3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
C3.1	*Employer*'s Works Information	
C3.2	*Contractor*'s Works Information	

	Total number of pages	

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C3.1: EMPLOYER'S WORKS INFORMATION

1. Description of the *works*

The project comprises of the following:

The scope involves procurement of the services of a prospective bidder for the supply, delivery, offload, installation, commissioning, and testing of resin cast 18 x Dry Type Transformers with all accessories in replacement of the existing 18 x Oil Type Transformers and dispose accordingly.
The King Shaka international Airport is equipped with 18 x substations that contain Oil-type Transformers of varying capacities. These transformers are used for the purpose of electricity distribution. The Dissolve Gas Analysis conducted on these transformers since installation in 2009, reveal that these transformers experience high levels of moisture, some has high level of methane gas (CH4) or carbon dioxide (CO2), and mostly overheating at low loading factors. Some of the transformer's insulation has sagged. Transformer thermal problems can manifest as overheating of the paper-oil insulation or, in more severe cases, the melting of conductors and potential transformer explosions.

The current oil-filled transformers experience a continuous oil leak from time to time, even after several attempt to tightening and changing of gaskets. The rebuilding of some of the transformers did not stop the problems mentioned above. The batch of these transformer procured in 2009 have a similar performance level and found not suited for the coastal and high humidity environment. All the transformers in Substations requires replacement due to their poor performance and the results of the oil test, which indicate high levels of moisture and the presence of hydrogen (H_2), carbon monoxide (CO), and carbon dioxide (CO_2). Transformer oil is utilized for the purposes of cooling and insulating. Over time, oil can deteriorate because of factors such as oxidation, contamination, or degradation. Deteriorated oil may generate flammable gases, such as hydrogen (H_2), methane (CH4), or ethylene (C2H4), which can pose respiratory and fire risks.

The contractor shall be responsible for the maintenance of the 18 Dry-Type Transformers during the defects free period in line with the Original Equipment Manufacturer's specifications and Employer requirements. The NEC3 Term Service Contract, April 2013 general conditions shall apply.

1.1 Existing Equipment Information

The existing Transformers at KSIA

Transformer Quantity	Make	Model	Impedance	Amperes	Size	Location
2	ACTOM/ALSTOM	ONAN, Dyn11,11000/420 V	5.24%	41.99/1100	0.8MVA	AS1
2	ACTOM/ALSTOM	ONAN, Dyn11,11000/420 V	4.72%	787/206	0.15MVA	AS2
2	ACTOM/ALSTOM	ONAN, Dyn11,11000/420 V	4.73%	787/206	0.15MVA	AS3
2	ACTOM/ALSTOM	ONAN, Dyn11,11000/420 V	5.06%	41.99/1100	0.8MVA	AS4
5	ACTOM/ALSTOM	ONAN, Dyn11,11000/420 V	6.45%	104.97/2749	2MVA	A1
1	MATLAKSE	Dyn11, 1000/420			2MVA	A1
2	ACTOM/ALSTOM	ONAN, Dyn11,11000/420 V	6.44%	104.97/2749	2MVA	A2
1	ACTOM/ALSTOM	ONAN, Dyn11,11000/420 V	7%	83.98/2199	1.6MVA	MSP
1	MATLAKSE	Dyn11, 1000/420			1.6MVA	MSP
2	ACTOM/ALSTOM	ONAN, Dyn11,11000/420 V	5.23%	41.99/1100	0.8VA	ATNS
Total						**20**

KSIA Substation Information:

Substation	Type	Capacity	Location
AS 1	Indoor	0,8 MVA	Airfield
AS 2	Indoor	0,15 MVA	Airfield
AS 3	Indoor	0,15 MVA	Airfield
AS 4	Indoor	0,8 MVA	Airfield
A 1	Indoor	11 MVA	Landside
A 2	Indoor	2 MVA	Airfield
ATNS	Indoor	0,315 MVA	Landside
M 1	Indoor	15MVA	Landside
MSP	Indoor	1,6 MVA	Landside
Total			**9**

1.2 Scope of Supply and Works and Services

1.2.1 *The Contractor* will be appointed directly by *The Employer*, for the duration of this contract *The Employer* is Airports Company South Africa.

1.2.2 *The Works Information* covers design, material, construction, manufacture, inspection, testing, packing, delivery at site, offloading, installation, and commissioning of Dry-Type Transformers with all accessories as described in this specification.

1.2.3 *The Contractor* is to develop a project schedule, equipment list, cost projections, schematic drawings and produce factory acceptance test certifications after the award.

1.2.4 The operating service manual handbook must be submitted by *The Contractor* after commissioning in softcopy and hardcopy.

1.2.5 The operating manual is to include data sheets for all installed equipment or instruments, drawings package, equipment list, bill of quantities, quality assurance checklist from factory, test certifications, OEM documentation for maintenance, detailed installation report and personal details of personnel involved in installation.

1.2.6 *The Project Manager* must sign a delivery note accepting as-built drawings package and operating manual on-behalf of *The Employer*.

1.2.7 The space occupied by the existing Transformers cannot be changed or expanded. It is the responsibility of *The Contractor* to ensure that new transformers supplied meet dimensional requirements as per available space, ensure new transformers meet technical requirements for operation as per specification, ensure terminations and existing busbar sizes are compatible with the new Dry-type Transformers.

1.2.8 Any damage to goods being delivered during transportation is the responsibility of *The Contractor.*

1.2.9 Working tools, cleaning consumables and testing equipment is to be supplied by *The Contractor.*

1.3 Equipment delivery/Supply

1.3.1 The Contractor shall supply the Transformers with the specifications as per the table below under 1.5 STANDARDS AND CODES.

1.3.2 Whether called for specifically or not, all accessories (winding temperature indicator/transformer protection relay, temperature sensors, and rollers) required for normal operation of the equipment are deemed to be considered as a part of *The Contractor's Works Information*. Other than embedment in concrete any hardware required for mounting and installation of the transformers are within the *Works Information.*

1.3.3 It is not the intent to specify completely herein, all details of design and construction of the equipment. However, the equipment shall conform in all respects to high standard of engineering, design and workmanship and be capable of performing in continuous industrial operation up to the Original Equipment Manufacturer's (OEM's) guarantees in a manner acceptable to *The Employer*, who will interpret the meaning of the drawings and specifications and shall be entitled to reject any work or material which is not in full accordance with SANS 60076-11:2005 Ed. 1.

1.4 APPLICABLE CODES, STANDARDS, REGULATIONS AND SPECIFICATIONS:

1.4.1 The design, material, construction, manufacture, inspection, testing and performance of dry type transformers and associated equipment or accessories shall comply with all currently applicable statutes, regulations, and safety codes in the locality where the equipment will be installed, including but not limited to SANS 60076-11:2005 Ed. 1. Nothing in this specification shall be construed to relieve *The Contractor* of his/her responsibility. Where no standards are available, the supply items shall be of good quality and workmanship and backed by test results. Any supply items which are bought out by *The Contractor* shall be procured from approved Original Equipment Manufacturer acceptable to *The Employer.*

1.4.2 Equipment shall conform to the latest applicable standards and codes of practice as mentioned in this *Works Information*. In case of conflict between the standards, stringent specifications out of these standards shall govern, whereas in case of conflict between the standards and *Works Information*, requirements of this *Works Information* shall govern.

1.4.3 Other national standards are acceptable, if they are established to be equivalent to or superior to the listed standards. *The Employer* and *The Contractor* shall provide English version of standards and codes applicable.

1.4.4 The Dry type transformers shall conform to the currently applicable standards and codes of practice and reports as listed below:

1.5 STANDARDS AND CODES

No	Code No.	Title
1	OHS Act	Occupational health and Safety Act and Regulations (85 of 1993).
2	SANS 780: 2009	General transformer regulations
3	SANS 10142: Part 1 & Part 2	Wiring codes: Low Voltage Installations & Medium Voltage fixed installations.
4	SANS 876:2016	Cable terminations and live conductors
5	SANS/IEC 60076	Power Transformers
6	NRS 083-3	Secondary equipment installations and substation rooms
7	SANS 1973-1:2007	Low voltage switchgear requirements
8	SANS/IEC60439: Part 1 -5	NB: Part 2 for busbar trucking requirements
9	SANS 10198	The selection, handling, and installation of electric power cables of rating not exceeding 33kV
10	ISO 9001	International Standard for Quality Management
11	IEC: 216	Guide for determination of thermal endurance properties of electrical insulating materials.
12	IEC:270	Partial Discharge Measurements
13	IEC: 60551	Determination of transformer and reactor sound levels.

14	IEC: 60606	Application guide for power transformers
15	IEC: 60616	Terminal and tapping markings for power transformers.
16	IEC: 60726	Dry-type power transformers

1.6 TECHNICAL SPECIFICATION OF DRY TYPE TRANSFORMERS

No	Description	Technical Parameters
1.	**General Information**	
	Application/Designation	Distribution Transformer
	Service	Step Down Transformers & Step-up Transformers
	Type	Dry Type Transformer
	Installation	Indoor
	Degree of protection for transformers with enclosure as per applicable standard.	Indoor IP23 2mm Mild Steel Enclosure
	Applicable standards and codes	As listed subtitle No. 1.5 in *Works Information above*
2.	**Ratings Information**	
	Ratings	0.15MVA, 0.8MVA, 1.6MVA and 2MVA
	Rated primary voltage	11000V
	Rated no load secondary voltage	420V
	No. of phases	3-phase on HV 3-phase with neutral on LV
	Frequency	50Hz
	Vector Group	Dyn11
	Actual impedances	5.24%, 4.72%, 4.73%, 5.06%, 6.45% 6.44%, 7% and 5.23%
	Permissible tolerance on impedance	+/- 10%
	System fault current for 1 second duration	HV: 25kA (rms) LV: 50kA (rms)
	Type of cooling	ANAF
	NB: The cooling condition of forced air cooling is to be prioritised to ensure the output capacity increase by 50%. The substation where the Transformer will be located will be equipped with extraction fans for forced air out. However, the Dry-type Transformer is to have an embedded forced air-cooling system (ANAF).	

3.	**System Voltage**	
	Nominal system voltage	11000V
	Highest system voltage	12kV for 11kV winding 1.1kV for 420V winding
4.	**Neutral Earthing**	
	Transformer neutral earthing	LV winding: Effectively earthed. Note:1) Additional neutral bushing should be provided for neutral earthing. Note:2) Neutral CT shall be provided for REF protection. CT details shall be finalised during drawing approval stage.
5.	**Insulation Withstand Voltage**	
	Impulse (1.2/50 u-sec. wave)	HV winding: 75kV peak for 11kV winding
	One-minute power frequency	HV winding: 28kV for 11kV winding LV winding: 3.0kV
	Class of insulation	F (i.e., see NEMA standards) ~180°C
6.	**Temperature**	
	Reference Ambient Temperature (Design)	45°C
	Temperature rise by winding resistance at lowest tap (Max)	90°C
	Temperature on enclosure by thermometer (Max)	50°C
	NB: King Shaka International Airport is located near the coastal Durban. The average annual relative humidity is 79.1% and average monthly relative humidity ranges from 73% in June 2024 and 83% Maximum.	
7.	**Noise Level**	
	Permissible noise level	+/- 48dB
8.	**Tap Changing Links**	
	Taps required	Off-circuit full MVA rating at each tap
	Type	Bolted link (tinned copper links)
	Tapping on windings	HV
	Total tappings range	±2.5% & ±5.0%

	Switch Position	1,2,3,4 and 5
	Parallel operation	Momentary with similar transformer
9.	**Bushing/Support**	
	Voltage class	HV line end – 11kV LV line end / LV neutral – 1.1kV
	Impulse (1.2/50 u-sec. wave)	HV winding: 75kV peak
	One-minute power frequency	HV winding: 28kV LV winding / LV neutral: 3.0kV
	Minimum creepage distance	25mm/kV
10.	Surge Arrestor / Surge Divertor	3 nos. of Polymeric Zinc Oxide surge arrestors. (10kV, 10kA, line discharge class 2)
11.	**Minimum Clearance in Air**	
	HV phase to phase	230mm
	HV phase to earth	180mm
	LV phase to phase	25.4mm
	LV phase to earth	25.4mm
12.	**Terminal Connections**	
	HV line end terminal with HT cable box	Suitable for terminating 11kV x 2x 185sq.mm 3c PILC cable + 70sq.mm BEC + 12 core pilot, Bottom entry.
	LV line end terminal	Suitable for 4000A interleaved bus duct, Top entry.
	LV neutral busing	LV neutral bushings as specified in subtitle 1.18 below
	The Employer's earthing	2x 70sq.mm BEC conductor.
	Colour finish shade of enclosure interior /exterior	Str. Grey RAL7035 or Orange
	Cable/bus entry (Bottom, side, top)	Bottom and Top Entry
13	**Enclosure**	
	Details of enclosure material	Refer to subtitle no. 1.21 below
	Orientation of HT and LT termination compartments	*As required by site conditions.*

1.7 LIST OF ESSENTIAL SPARES TO BE SUPPLIED

No	Item Description	Quantity
1	HV bushing with metal part	For 9 Transformers
2.	Support insulators for Terminal	For 9 Transformers
3.	Winding temperature indicator	For 18 Transformers

1.8 EQUIPMENT CONSTRUCTION AND DESIGN DETAILS

1.8.1 This section covers the specification of Dry Type Transformers. The transformers shall be of dry type with cast resin encapsulated. The transformers will be located indoors and shall be suitable for site service conditions and the electrical system requirements as specified in this *Works Information.*

1.8.2 *The Contractor* can supply dry type cast resin transformers either with filled type technology (i.e., with mixing resin with quartz powder or unfilled technology (i.e., with chop strand mat).

1.8.3 Features for filled type of technology and unfilled type technology are mentioned below. *The Contractor* shall design, manufacture, supply, install and commission Dry-type Transformers as per specifications mentioned below:

1.9 GENERAL REQUIREMENTS OF FILLED TYPE OF TECHNOLOGY TRANSFORMERS

- For better compatibility of thermal expansion of resin and conductor, *The Contractor* shall use copper conductor for both LV and HV windings.
- LV winding shall be of foil winding type.
- The resin shall be of a manufacturer trusted by *The Employer* and the ratio shall be as per recommendations from industry standards.
- Quartz powder can be used as filler material.
- Quartz powder bags shall be stored in closed rooms. Bags shall be opened only in front of *The Employer's* inspector just before pouring into the resin chamber.
- Quartz powder shall be heated before being mixed with resin.
- Pre-heating shall be carried out for resin for 8 hours, the temperature between 80 – 100 deg. Celsius, Casting shall be carried for 2 hours, and curing shall be carried for 16 hours.
- High resistant insulation from trusted manufacturer shall be used.

1.10 GENERAL REQUIREMENTS OF UNFILLED TYPE OF TECHNOLOGY TRANSFORMERS

- For better compatibility of thermal expansion of resin and conductor, *The Contractor* can use Aluminium both LV and HV windings.
- LV winding shall be of foil winding type.
- Chopstrand mat (CSM) shall be used for strength for resin.
- The resin shall be of a manufacturer trusted by The Employer and the ratio shall be as per recommendations from industry standards.
- Pre-heating shall be carried out for resin for 8 hours, the temperature between 80 – 100 deg. Celsius, Casting shall be carried for 2 hours, and curing shall be carried for 16 hours.

- Fibre glass non treated tapes shall be used.

1.11 GENERAL CONSTRUCTIONAL FEATURES

1.11.1 All material used shall be of best quality and of the class most suitable for working under the conditions specified and shall withstand the variations of temperature and atmospheric conditions, overloads, over excitation, short circuits as per specified standards, without distortion or deterioration or the setting-up of undue stresses in any part and also without affecting the strength and suitability of the various parts of the work which they have to perform. Transformer shall be provided with suitable enclosure / cubicle. It shall be possible to withdraw the transformer from the enclosure after disconnecting the terminations without disturbing bus bars and cables.

1.11.2 All transformers supplied for system shall be identical. Further similar parts, particularly removable ones, shall be interchangeable.

1.11.3 Nuts, bolts, and pins used inside the transformer shall be provided with lock washers or locknuts.

1.12 TRANSFORMER CORE

1.12.1 The magnetic circuit shall be constructed from high grade cold-rolled non-ageing grain oriented low loss silicon steel laminations and shall be of 'Core' type. The core shall be painted with suitable resin to protect it against corrosion and other parts shall be hot dip galvanised. The lamination shall be free of all burrs and sharp projections. The lamination Grade shall be laser etched type and shall be subject to The Employer's approval.

1.12.2 The core shall be of Boltless type.

1.12.3 All steel sections used for supporting the core shall be non-magnetic. They shall be thoroughly shot, or sand blasted, after cutting, drilling, and welding.

1.12.4 The design of the magnetic circuit shall be such as to avoid static discharges, development of short circuit paths within itself or to the earthed clamping structure and production of flux component at right angles to the plane of laminations which may cause local heating.

1.12.5 The finally assembled core with all the clamping structures shall be free from deformation and shall not vibrate during operation.

1.12.6 The core clamping structure shall be designed to minimize eddy current loss and bolts shall not pass through the lamination for any purpose whatsoever. Fibre glass or equivalent tapes of adequate strength shall be used for clamping the core through an approved procedure.

1.12.7 The core shall be provided with lugs suitable for lifting the complete core and coil assembly.

1.12.8 The transformer core should be equipped with minimum of 15mm thickness cooling duct.

1.13 WINDINGS

1.13.1 Windings shall be of high conductivity Copper and Aluminium as per BoQ conforming to SANS 780. The conductors shall be transposed at intervals to minimize eddy currents and equalize the distribution of currents and temperatures along the windings. The insulation class for the windings shall be at least Class-F having high tensile and dielectric strength. Low voltage windings shall be of foil type. High voltage windings can be cross over coils or disc type coils separated from each other by keyed radial spacers.

1.13.2 Both HV and LV windings of one phase shall be separately cast on one rigid tubular coil co-axially arranged with no mechanical connection between their arrangements. The completed coil assembly shall be cast under vacuum into moulds, which forms the Insulation System. The coil shall be casted in epoxy resin with a fibre glass or super enamel covering on the conductor to form a compact tubular spool for achieving high mechanical strength.

1.13.3 Cooling ducts should be provided on LV and HV winding. HV winding cooling duct should be formed not more than 4 segments per layer to utilize more area for cooling.

1.13.4 The resin used for winding insulation shall be non-hygroscopic to prevent the penetration of moisture into windings. It should be possible to energize the transformer without pre-drying even after a long period of service interruption. The resin used shall be self-extinguishing and void free and shall be suitable for tropical climate and 100% air humidity.

1.13.5 The transformer shall be free of partial discharges at least up to 1.2 times of the rated voltage and shall be able to withstand short circuits as well as switching and atmospheric impulse voltages as specified.

1.13.6 The current density in case of copper winding shall be 2.2Amps/sq.mm.

1.14 TEMPERATURE SENSORS

1.14.1 Two sensing elements (RTDs) shall be provided in each phase. The RTDs shall be embedded at the hottest spot. The type of RTD shall be simplex and the material shall be platinum.

1.15 CORE AND COIL ASSEMBLY

1.15.1 The cast coils are inserted on to the core limbs. The resin cast spacer blocks, end blocks and separators are used as required. The end frames are then assembled.

1.16 EARTHING

1.16.1 All internal metal parts of the transformers shall be earthed at one point only. The magnetic circuit shall be connected to the clamping structure at one point only. The framework and clamping arrangements of core and coil shall be securely earthed by copper strip connection to the main frame and enclosure. Two earthing terminals shall be provided on the frame for external earthing. The terminals shall be suitable for the earthing conductor of size indicated in the Works Information.

1.16.2 Body earthing: Two Stainless steel earth pads of 20 mm thick and threads up to 15 mm shall be provided for terminating earth conductor.

1.17 TERMINATIONS

1.17.1 The HV side termination facility to be provided on transformers shall be suitable for terminating 2 x 185mm/3 C PILC/70mm BEC /12C PILOT (15m) cables (as per the transformer rating), size of which will be intimated during the drawing approval stage. The cable entry shall be from the bottom. Formation of delta on the HV side is in the scope of manufacturer.

1.17.2 Phase to phase and phase to ground clearances within the enclosure shall be such as to enable either the transformer or cable to be subjected separately to HV tests. Minimum clearances shall be as specified in data sheets.

1.17.3 The Busbars shall be sleeved with respective voltage insulation levels.

1.17.4 The bottom of HT cable box shall be 1 meter from the enclosure bottom plate. The height of HT connectors shall be 750 mm from gland plate.

1.17.5 Cable supports shall be provided from the roof to the cable box. Support arrangement will be approved during drawings approval stage.

1.17.6 Tinned Copper flat of size 50 x 6 mm or higher shall be provided at bottom of cable box for terminating cable armour earthing.

1.17.7 One neutral bushing shall be provided to facilitate leading the earth conductor down to the ground level. The terminal shall be suitable for connecting to two separate earthing pads. Suitable lugs shall be supplied by The Contractor for connecting the earthing conductors.

1.18 BUSHINGS / SUPPORT INSULATORS

1.18.1 Bushings or Support Insulators shall be designed and tested to comply with the applicable standards.

1.18.2 Bushings shall have non- ferrous and non-magnetic flanges and hardware.

1.18.3 Fittings made of steel or malleable iron shall be galvanised.

1.18.4 All bushings/support insulators shall be supplied with terminal connector clamp suitable for supporting the bushing terminal & The Employer's conductor as specified in data sheet.

1.18.5 Minimum air clearance and minimum creepage distances shall be as per data sheet.

1.18.6 Bushing/support insulators material shall be porcelain.

1.19 WINDING TEMPERATURE INDICATORS/TRANSFORMER PROTECTION RELAY WITH HEALTHINESS

1.19.1 A device for measuring the hot spot temperature of the winding shall be provided by *The Contractor*. Winding temperature indicators consisting of temperature sensing elements. The number of sensing elements shall also be provided as required.

1.19.2 Local indicating instrument with four adjustable electrically independent ungrounded contacts brought out to separate terminals for winding temperature high alarm and trip. One indicating instrument shall be provided for each phase. Contacts shall be suitable for DC voltage supplied by BTU units installed at King Shaka International airport.

1.19.3 A temperature scanner shall be provided by The Contractor for taking inputs from RTDs in all the phases. This scanner shall have an accuracy of ±1%. RTD or Scanner output shall be suitable for connection to SCADA inputs.

1.20 MARSHALLING BOX

1.20.1 The Contractor shall provide an external marshalling box and shall mount the winding temperature indicators in the marshalling box and shall marshal to it all the contacts/and winding temperature indicators required for the transformer. i.e., 3 no of sensor probes of each phase should connect to first temperature indicators and remaining three will be connected to send other temperature indicators.

1.20.2 The Contractor shall provide the interconnection cabling between the above equipment and the marshalling box. The winding temperature indicator shall be mounted in the marshalling box. The marshalling box shall have view window for temperature indicator. This interconnection shall be through wires in GI conduits or through armoured cables. The insulation for the wires or cables shall be consistent with the ambient temperature in the housing. Compression type brass cable

glands required for these interconnections shall be supplied by *The Contractor* and external connections at the marshalling box will be supplied by The Employer.

1.20.3 The marshalling box shall be mounted on the transformer housing. All doors covers and plates shall be provided with neoprene gaskets. Bottom of the marshalling box shall be at least 600 mm above floor level and provided with removable bolted, undrilled gland plate.

1.20.4 All contacts for alarm, Trip and indication circuits shall be electrically free, wired for auxiliary D.C. supply as specified and brought out to separate terminals at the terminal blocks in the marshalling box. Terminal blocks shall be of good quality from a recognised manufacturer. Terminals shall be rated for 10A. Wiring shall be with PVC insulated, stranded, copper conductors of sizes not smaller than 2.5 sq.mm for control with ring type lugs. Engraved identification ferrules, marked to correspond with the approved wiring diagrams shall be fitted to each wire. Ferrules shall be of yellow colour with black lettering.

1.21 ENCLOSURE FOR TRANSFORMERS

1.21.1 The core and coil assembly shall be enclosed on the four sides and as well as on the top by a sheet metal enclosure. The purpose of having the enclosure is to provide safety from live parts and prevent ingress of dust, vermin, and rodents. Sufficient louvers may be provided on the side enclosure for cooling purposes. The louvres should be covered with stainless steel wire mesh having holes that shall meet IP 33/23 protection. The enclosure should have structural steel framework with lockable hinged door on front and back of the transformer. Width of the back door shall be restricted to one metre. The doors shall be provided to facilitate the inspection of the transformers. Door should be gasketed.

1.21.2 The enclosure frame shall be fabricated using suitable mild steel structural sections or pressed and shaped sheet steel of thickness not less than 2.5 mm for hot rolled or 2 mm for cold rolled.

1.21.3 Frames shall be enclosed by sheet steel of thickness not less than 2 mm for hot rolled, levelled and free from flaws. Doors and covers shall be made of sheet steel of thickness not less than 2 mm for hot rolled. Stiffeners shall be provided wherever necessary.

1.21.4 All panel edges and door edges shall be reinforced against distortion by rolling, bending or by the addition of welded reinforcement members.

1.21.5 The complete structure shall be rigid, self-supporting, free from vibration, twists and bends and shall be suitable for connecting ventilation hood. At the top of enclosure flanged throat connection, suitably drilled with gasket shall be provided for connection with ventilation duct. Size will be furnished at drawing approval stage. A wire mesh shall be provided on the top of the enclosure where ventilation hood is to be connected. The type of wire mesh shall be stainless steel.

1.21.6 The enclosure shall be provided with a degree of protection not less than IP: 33/23 as per SANS/IEC 61439-1 with cooling fans.

1.21.7 The enclosure shall be provided with a metal sill frame made of structural steel channel section properly drilled for mounting the enclosure with the transformer along with necessary mounting hardware.

1.21.8 The Contractor shall ensure the arrangement and orientation of the LV and HV terminals, bus bars and cable termination such that whenever required, it shall be possible to draw out the transformer without disturbing either the bus bars or the cables.

1.21.9 A door switch with 2NO+2NC auxiliary contacts shall be provided. It will be used for providing interlock in the HV breaker circuit. Also, enclosure door shall be provided with Interlock. This interlock ensures that transformer enclosure door shall be opened only when respective feeder breaker in OFF condition.

1.21.10 Sheet metal shall be treated with 7 tank process before painting. Paint shall be made on the enclosure with finished structured RAL 7035.

1.22 Performance Requirements

1.22.1 Transformers shall operate without injurious heating at the rated kVA at any voltage within ±10% of the rated voltage of that tap.

1.22.2 Transformers shall be designed for 110% continuous over fluxing withstand capability. The continuous and short time over loading capacities shall be furnished in detail. Overloads shall be allowed within the conditions defined in the loading guide of the applicable standard.

1.22.3 Terminal bushings tap changers, or any other auxiliary equipment shall not limit such over loading.

1.22.4 The neutral terminal of windings with star connection shall be designed for the highest over current that can flow through this winding.

1.22.5 Every care shall be taken to ensure that the design and manufacture of the transformers shall be such as to reduce noise and vibration to the level obtained in good modern practice. The Contractor shall ensure that the noise level of the transformer, with its enclosure in position does not exceed 50 dB when measured in accordance with IEC-551.

1.22.6 The transformer shall deliver full power at all tapings.

1.22.7 The transformer is intended to operate in parallel with the standby transformer for a short period. The transformer shall be designed accordingly.

1.22.8 The transformers shall be designed such that when mounted inside its enclosure, it shall be capable of delivering its rated output with temperature rise within limits specified with natural air cooling and at an ambient temperature of 45°C outside the transformer cubicle. All other performance requirements as called for in this specification and as per the relevant standards and codes shall also be met with the conditions specified above.

1.22.9 Off circuit tap changing links (With tinned copper links) shall be provided with total tapping range of ±7.5% insteps of 2.5% each at HV side.

1.23 Acceptance Criteria

The Employer will accept the transformers meeting with following:

1.23.1 No load loss should not exceed the guaranteed value by 10% or more.

1.23.2 Load loss should not exceed the guaranteed value by 10 % or more.

1.23.3 Impedance value should not differ the guaranteed value by ±10% or more.

1.23.4 Winding temperature rise should not exceed the specified value of 90 °C.

1.23.5 Transformer should not fail on impulse test.

1.23.6 Transformer should not fail on partial discharge test.

1.23.7 Transformer should not fail on power frequency voltage withstand test or induced over voltage test.

1.23.8 All the bought-out item certificates will be verified, and test results shall not be varied as per respective standards.

1.24 INSPECTION AND TESTING

1.24.1 The equipment covered by this Contract shall be subjected to inspection and testing. The Contractor shall provide all services to establish and maintain quality of workmanship in his works and that of his Subcontractors to ensure the mechanical/electrical performance of components, compliance with drawings, identification and acceptability of all materials, parts, and equipment.

1.24.2 On award of the Contract, The Contractor shall prepare Quality Control Plan identifying the various stages of manufacture, quality checks performed at each stage and the Customer hold points. The document shall also furnish details of method of checking, inspection and acceptance standards/values and get the approval of The Employer or his representative before proceeding with manufacturing. However, The Employer or his representative shall have the right to review the inspection reports, quality checks and results of the manufacturer's in-house inspection department which are not Customer hold points, and The Contractor shall comply with the remarks made by The Employer or his representative on such reviews with regards to further testing, rectification, or rejection etc.

1.24.3 The Contractor shall perform his internal inspection/testing before offering the equipment for The Employer's inspection. Only after ensuring that his inspection/test results are satisfactory, The Contractor shall offer the equipment for The Employer's inspection. However, this clause is not applicable in case of such tests which are remained to be done only once in the lifetime of the equipment.

1.24.4 The minimum inspection requirements for all components/equipment shall conform to the design and fabrication requirements as defined in the Codes and Standards referred to in The Works Information document. The type of inspection shall be as prescribed in Quality Control plan and as agreed upon by The Contractor, and shall include, if applicable, inspection procedures prescribed by Codes and Regulations recognized by the governmental authority having jurisdiction over the installed goods.

1.24.5 Wherever required, getting approval of Government bodies under jurisdiction is the sole responsibility of The Contractor for his design, drawings, manufacturing, testing, and inspection by such bodies. In such cases approval by Government bodies under jurisdiction will not relieve The Contractor from his responsibility of making good of defective material or equipment or system. However, The Contractor shall keep The Employer/his representatives informed in writing of any approval or otherwise any comments of such Government bodies. The Contractor shall take the concurrence of The Employer or his representative before proceeding with rectification procedures as called by the Government bodies.

1.24.6 Approval or passing of any such inspection by The Employer or his authorized representative shall not, however, prejudice the right of The Employer to reject the equipment if it does not comply with the Specification when erected or give complete satisfaction in service.

1.24.7 The Contractor shall intimate to *The Employer* of any material being ready for testing. Such tests shall be to The Contractor's account except for The Employer's expenses. The Employer or his representative, unless the inspection of the tests is virtually waived, shall attend such tests within a reasonable period of the date on which the equipment is notified as being ready for test/inspection failing which, The Contractor may proceed with the tests which shall be deemed to have been made in the Employer's presence and The Contractor shall forward the duly certified copies of tests along with observation readings to The Employer in triplicate.

1.24.8 The Employer shall give notice in writing to The Contractor of any objection to any drawings and, all or any equipment and workmanship which in his opinion is not in accordance with the 'Contract'. The Contractor shall give due consideration to such objections and shall either make the modifications that may be necessary to meet the said objections or shall confirm in writing to The Employer giving reasons therein that no modifications are necessary to comply with the 'Contract'. However, The Employer has the final authority to accept or reject The Contractor's views. The equipment/material after rectification by The Contractor shall be offered to The Employer for his final inspection and acceptance without any additional cost to The Employer.

1.24.9 When the factory tests have been completed at The Contractor's or his Sub Contractor's Works to the satisfaction of The Employer, The Employer shall issue a certificate to this effect within fifteen (15) days after completion of tests, but if the tests are not witnessed by The Employer's representative, the certificate shall be issued within fifteen (15) days of the receipt of The Contractor's test certificate by The Employer provided the test results are satisfactory and conform to the specified parameters. Failure of The Employer to issue such certificate shall not prevent The Contractor from proceeding with the subsequent work. The completion of these tests or the issue of the certificate shall not bind The Employer to accept the equipment should it, on further tests after erection, be found not to comply with the 'Contract'.

1.24.10 In all cases where the 'Contract' provides for tests whether at the premises or Works of The Contractor or of any Sub-Contractor, The Contractor, except where otherwise specified shall provide free of charge such items as labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by The Employer or his authorized representative to carry out effectively, such tests of the equipment in accordance with the 'Contract' and shall give facilities to The Employer or to his authorized representative to accomplish testing.

1.24.11 The inspection by The Employer and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of The Contractor in respect of agreed quality assurance programme forming a part of the 'Contract'.

1.24.12 In the case of stage inspection, The Contractor shall proceed from one stage to another only after the component is inspected by The Employer or his representative and permission given to proceed further. The same procedure shall be adopted for any rectification /repairs suggested by The Contractor or his representative.

1.24.13 At all Customer hold points The Contractor shall compulsorily offer for inspection to The Employer and, if any waiver by The Contractor shall be obtained in writing for record purposes.

1.24.14 None of the equipment to be furnished or used in connection with the Contract shall be dispatched until shop inspection, satisfactory to The Employer or his representative has been made and specific Dispatch Instructions for the equipment is issued by The Contractor. However, such shop inspection shall not relieve The Contractor of his responsibility for furnishing the equipment conforming to the requirement of the Contract nor prejudice any claim, right or privilege which The Employer or his representative may have because of the use of defective or unsatisfactory items of the equipment. Should The Employer or his representative waive the right to inspect any item of the equipment, such waiver shall not relieve The Contractor in any way from his obligation under the Contract. In the event of The Employer on inspection revealing poor quality of goods, The Employer or his representative shall be at liberty to specify additional inspection procedures, if required, to ascertain The Contractor's compliance with the equipment Specifications.

1.24.15 All principal mill test reports, test certificates and test curves shall be supplied for all tests carried out including other records such as stress relieving charts, radiographic charts and other non-destructive testing records in accordance with the provisions of the Contract. The Employer or his representative shall reserve the right to call for certificates of origin and test certificates for all raw material and equipment at any stage of manufacture.

1.25 SUB-ORDERS

1.25.1 To ensure getting good quality product from Subcontractor, the main Contractor shall get the approval of The Employer by furnishing details of capability, experience, manpower, manufacturing facility, quality control facilities etc. of the Subcontractor before placement of order. The Employer may visit the Subcontractor 's works to evaluate their capacity and capability to do quality job to meet specification requirements. The sub- orders should highlight the inspection and quality control requirements stipulated in the main Works Information and all required quality checks and tests shall be conducted as per the Works Information.

1.25.2 To facilitate the inspection of bought-out materials and equipment, The Contractor shall submit for approval, three (3) copies of all sub-orders placed by him as soon as they are issued. Copies of any drawings referred to in the sub-order shall also be submitted, unless otherwise agreed by The Employer or his representative.

1.25.3 The sub-orders and drawings referred to above shall cover all components which are subjected to electrical and mechanical pressure or stress when the plant is in operation, and auxiliaries and spares which are to be directly dispatched to Site from the Subcontractor's Works.

1.25.4 All sub-orders shall clearly be marked with the main Contractor's name and The Employer's reference. They shall include a statement advising the Subcontractor that items being ordered will also be subject to inspection and test by The Employer or his representative.

1.25.5 It is important that all copies of sub-orders be clearly marked with the main Contractor's name and the name of The Employer and 'Contract' reference.

1.25.6 The Sub-Contractors are to comply with all the applicable requirements of this Works Information and with this Section. Orders issued by the Subcontractors are also to include the main Contractor's name on their sub-order in addition to the above-mentioned heading.

1.26 MATERIAL TESTS

1.26.1 In the event of The Employer or his representative being supplied with the particulars of tests which have been carried out for The Contractor by the suppliers of material, he may, at his own discretion, accept the same as proper evidence of compliance with the requirements of appropriate specifications for the materials**.**

1.26.2 In case the correlating test certificates are not available, The Contractor, at no extra cost to The Employer will get all the tests done to establish conformity of the material to its relevant code or specification.

1.27 TESTS AT MANUFACTURER'S WORKS

1.27.1 The tests at Works shall include electrical, mechanical and hydraulic tests in accordance with the appropriate clauses of Statutory Regulation, relevant Codes and Standards and in addition any test called for by The Employer or his representative to ensure that the equipment being supplied fulfils the requirements of the Works Information. The Contractor shall carry out all the shop tests and inspections specified in the following clauses in addition to those normally carried out by him/her. For equipment not covered by any code or specifically mentioned in this Works Information, the tests are to be agreed with The Employer. If considered necessary by The Employer or his representative, multipart assemblies shall be fully erected and tested in the works prior to packing and dispatch to the site.

1.28 ROUTINE TESTS

1.28.1 All routine tests shall be carried out on all equipment as per latest SANS and IEC standards in the presence of The Employer's representative.

1.28.2 The routine tests to be carried out by The Contractor shall include but not be limited to the following:

- Measurement of winding resistance for all windings at all taps, corrected to 120°C.
- Measurement of voltage ratio at all taps.
- Check the voltage vector relationship.
- Measurement of impedance voltage at all taps. This test shall be carried out on all taps before and after the impulse test on principal tap on the transformer which is subjected to impulse test.
- Short circuit impedance and load loss at all taps.
- Measurement of no-load loss and current at 90% 100% and 110% rated voltage and at rated frequency.
- Dielectric tests shall be done with enclosure (Separate source voltage withstand test (High Voltage test) and Induced overvoltage withstand test.
- Measurement of insulation resistance and polarization index.
- 2 kV power frequency withstand test (for one minute) on control wiring.
- Insulation power loss factor and capacitance for each winding and between windings.

1.28.3 Type Tests: -Type test validity shall be 5 years preceding the date of floating the tender.

1.28.4 Type tests in accordance with relevant SANS and IEC standards are to be carried out on both transformers. The Contractor shall quote type testing charges as separate item as called for in the schedules.

1.28.5 Type tests shall be carried out with all associated external components and fittings mounted on the transformer.

1.28.6 The type tests to be carried out by The Contractor shall include but not be limited to the following:

- Temperature rise test at lowest tap with enclosure and natural cooling.
- Lightning impulse voltage test shall be conducted on all three HV limbs as per the sequence mentioned below:
    - ✓ One reduced full impulse,
    - ✓ One 100 percent full impulse,
    - ✓ One or more reduced chopped impulses,
    - ✓ Two 100 percent chopped impulses, and
    - ✓ Two 100 percent full impulses.

1.29 TYPE TEST DESIGN VERIFICATION OF THE TRANSFORMERS

1.29.1 Supplier shall submit following design calculations for drawing approval for verification during stage inspections:

- ✓ Short Circuit withstanding capability calculations.
- ✓ Temperature rises calculations.
- ✓ Basic Insulation Level (BIL).

1.30 SPECIAL TESTS

1.30.1 In addition to the routine tests The Contractor shall carry out the following test on both the transformers:

- ✓ Partial discharge test (as per IEC: 270) Partial discharge should not exceed 10 pico coulombs at 1.1 times the maximum system voltage. The test shall be done after completing all dielectric tests.

1.30.2 The following tests shall be carried out on all transformers:

- ✓ Measurement of acoustic sound level (as per IEC:551)
- ✓ Measurement of zero-sequence impedance on three phase transformers (as per IEC:76).

1.30.3 Short Circuit Test (as per IEC: 60076): - The Contractor shall submit type test certificate for short circuit test on a similar rating transformer, along with the tender.

1.30.4 The Contractor shall furnish test certificates on fire resistant property as per SANS or international standards, tested at independent laboratories/test houses on similar transformers.

1.30.5 The Contractor shall carry out life evaluation test on Insulating materials for ageing characteristics.

1.31 RESISTANCE TEMPERATURE DETECTORS

1.31.1 The following tests shall be conducted on RTD's as routine tests:

- ✓ Calibration tests.
- ✓ Material tests.
- ✓ Continuity test.
- ✓ Insulation Withstand Test.

1.32 TEST CERTIFICATES

1.32.1 All routine and type test certificates including test records, performance curves, etc. shall be supplied according to the distribution schedule. All the tests shall be carried out in accordance with the provisions of this contract.

1.33 INSTALLATION AND/OR CONSTRUCTION

1.33.1 The Contractor will be required to install 18 Dry-type transformers within the same position and space of existing units as per location of the works. This means no additional space will be provided and existing termination cables or busbars must be measured by contractor to ensure compliant installation with standards mentioned in this Works Information.

1.33.2 The Employer will be responsible for switching operation during installation and this will be conducted in conjunction with various stakeholders to avoid disruption of normal airport operations. It might therefore not be feasible to work during the day; The Contractor is expected to ensure availability for overnight works after last flight and before early morning flight (i.e., 22:00pm to 03:30am).

1.33.3 The Terminal Transformer room is not perfectly ventilated and therefore it is within the Works Information to perform air circulation test, break the wall between the LV room and install louvers and extraction fan on the opposite wall of the Transformer room and compare to dry type transformers requirements (see relevant standard requirements).

1.34 COMMISSIONING OF THE WORKS

1.34.1 When installation stage is complete, The Contractor must submit operating manual to The Employer and as-built drawings within 7 days. An appointment date for commissioning must be arranged by The Contractor with 2 weeks after submitting operating manual and as-built drawings. During commissioning the following checks are to be done:

- ✓ Verification and calibration of oil (i.e. if applicable) and winding instruments
- ✓ Verification of functionality of cooling fan start signals, alarms and trip signals.
- ✓ Cooling equipment checks.
- ✓ Check control circuit cabling and auxiliary power cabling.
- ✓ Checking of pressure relief valve (i.e. if applicable)
- ✓ Checking of rapid rise pressure relay.
- ✓ Checking of tap changer over pressure switch.

1.34.2 A checklist page prepared by The Contractor is to be used to tick each step of commissioning process by stakeholders and The Employer can issue a snag list to *The Contractor* after this process, of which The Contractor must fix within a period agreed between two parties. No payments are to be made by The Employer until all snags are completed and snag list signed off by The Project Manager.

1.34.3 When checks and visual snags are completed, the following tests are to be completed by The Contractor:

- ✓ Swept frequency response analysis (SFRA)
- ✓ Ratio, polarity, and vector group verification.
- ✓ Tan delta/Power Factor/Dielectric dissipation factor and capacitance tests on winding.
- ✓ Excitation/Magnetising current tests.

- ✓ Impedance/Leakage reactance test. (Compare to nameplate and factory tests)
- ✓ Zero sequence impedance tests
- ✓ Insulation resistance test on windings, core, and frame to earth (i.e., Megger)
- ✓ Current transformer testing.

1.34.4 The Contractor must submit test certificates to The Employer within two weeks after commissioning. The Employer is to pay maximum 75% the contract value before commissioning, as per cost projections and actual work completed in stages of the project. However, the remaining 25% will be paid to The Contractor 30 days after successful commissioning date and completion of snags (i.e., provided no faults occur in before 30 days is depleted).

1.35 QUALITY CONTROL AND REPORTING

1.35.1 The Contractor shall provide monthly reports and control documents in accordance with the contractors ISO 9001 certification, to manage the report process and action all aspects of the project programme.

1.35.2 The Contractor shall report to The Employer monthly with a monthly report. The updated documents and the issues raised from the reports will be fully discussed and raised to The Employer regarding the contract.

1.35.3 Compulsory project meeting is to take place every month until commissioning stage and at least three representatives from The Contractor must be present for both project progress meeting and risk meetings every month. QCP (Quality Control Plan) documentation must be submitted by The Contractor to The Employer before installation (i.e., from OEM) and after installation (i.e., by Contractor).

1.36 TRAINING

1.36.1 The Contractor shall provide necessary equipment training to The Employer’s electrical maintenance personnel after commissioning.

1.37 EXTENT OF THE WORKS

1.37.1 The Contractor will be fully responsible for meeting all requirements in this document regarding the works. In addition, all works will be carried out to the standard and compliance as required by the Original Equipment Manufacturer (OEM) and Maintenance and Engineering working procedures, as well as any applicable governing law and/or regulations.

1.37.2 Upon arrival at Employer’s premises at the pre-arranged time, the Contractor shall report to the Employer’s representative and Project Manager to conduct pre-inspection. When work is complete for the day, the contractor is to report to Project Manager and post-inspection of the works is to be conducted.

1.37.3 It should be noted that the amounts for access permits and training will be at the contractor’s cost and The Employer will reimburse the contractor.

1.37.4 The Contractor should, always stock any replacement parts necessary for the execution of the works. The Employer will arrange a storage area on site when required. The principle that applies to stockkeeping is that delays on the project programme due to parts and spares should be kept to a minimum. Therefore, all consumables that might be necessary for the execution of the works shall be made readily available by the contractor.

1.38 Floor and Wall Paint Specifications

- Good resistance to a wide range of chemicals and most solvents.
- Cures to a hard film with good adhesion and abrasion resistance.
- Provides an economical alternative to tiling in bathrooms, showers, kitchens, toilets, and low-cost housing.
- Suitable for surfaces that require frequent cleaning with solvents, detergents, or alkaline cleaners.

1.39 Extractor Fan Specification

No	Item Description	Required
1	No. of Poles	4
2.	Degree of Protection	IP 55 and up
3.	Current Rating	4,5A
4	Speed	1430r/min
5	Frequency	50Hz
6	PF	0.95

2. Contract Management

Management meetings

The Contractor shall be expected to attend meeting relating to operations, contract management and other issues that may arise from time to time. As far as is practicable, the Contractor will make all required personnel available for these meetings. The Contractor shall not submit claims for payment for staff attending any of these meetings.

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Project progress meeting and safety inspections	Weekly	King Shaka International Airport	*Contractor, Supervisor and Employer's safety officers*
Overall contract progress and feedback	Monthly	King Shaka International Airport	*Project Manager Contractor, Supervisor and Employer's safety officers*

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. 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 or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

Health and safety risk management

- The contractor shall have a toolbox meeting stating all the health and safety related issues and must be documented as such before any work can start.
- The Contractor shall comply with the health and safety requirements contained Part C1.4 to this Works Information.
- The contractor shall ensure that all personnel performing work have correct PPE.

Environmental constraints and management

The contractor to ensure that the design and his associated activities (installation, disposal of waste, noise, pollution etc.) complies with ACSA environmental policy. The contractor is required to report monthly on any environmental issues that affect the project or affected by project.

Quality assurance requirements

Within the period stated in the Contact Data, the *Contractor* submits his complete quality control and assurance system (with all quality control and assurance procedures and manuals) for review and acceptance by the *Employer*. The manual includes pro-forma checklists for all requirements of the *Contractor*'s quality control and assurance program and those called for in the Scope.

Acceptance by the *Employer* of the *Contractor*'s quality assurance programme, quality plans and/or inspection and/or test plans, or of those of his Subcontractors will not relieve the *Contractor* of his obligation to provide services which meet the requirements of the Contract.

Programming

The program is as per Tender submission. The first revised program shall be submitted within two weeks after the start date.

The *Contractor*'s Personnel

As per Tender submission

Insurance cover provided by the *Employer.*

As per Part C1.5

Provision of bonds and guarantees.

Without limitation to the Employer's rights under the Contract, 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.

Records of Defined Cost, payments & assessments of compensation events to be kept by the *Contractor.* The records should be filed by the contractor as hard copies and share with Project Manager on soft copy (emailed) without limitation to the Employer's rights under the Contractor.

Training workshops and technology transfer

The contractor shall be responsible for conducting an on-site training (or off-site training should the Contractor be in position of a training facility) on the maintenance, inspection, and maintenance features of the Dry-type Transformers to the ACSA maintenance team (ACSA maintenance staff and contractor employed by ACSA for the maintenance of medium voltage system. The training should aim at aiding the maintenance team to be able to independently conduct routine general Dry-type transformers safety inspection, set up the transformer at different tap changer depending on the requirement. The maintenance team will comprise of twenty-six (26) personnel.

3. Engineering and design of the *works*

Employer's design

The Employers' design is limited to the following:
Layout of the existing buildings and equipment

Parts of the *works* which the *Contractor* is to design[1]

The Contractor is responsible for the detail design of the following:

- See C3.2 below.

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

The contractor's design as well as Employer specification and installation requirements as per tender submission will be used for this project. The As built drawings to be prepared by the Contractor and submitted to the Project Manager for acceptance.

Use of *Contractor*'s design

The contractor to ensure adherence to the specification as per tender documents and built thee final product for purpose that is intended for.

Equipment required to be included in the *works*

The contractor may use any electrical equipment or tool to ensure the proper completion of works. The list of all tools to be used onsite to be presented as the part of safety file including the safe operating procedures for those tools.

As-built drawings, operating manuals, and maintenance schedules

The contractor to provide As-built drawings, operating manuals and maintenance as stated in the Bill of Quantities as the part of the hand-over documentation.

4. Procurement

Personnel:

Minimum requirements of people employed on the Site.

No Minimum requirements of people employed on the Site.

Subcontracting

Preferred subcontractors

No preferred subcontractor or supplier by Employer.

Limitations on subcontracting

The main contractor will be responsible for the subcontractor and must ensure that he complies to ACSA regulations and always have the correct PPE and comply to ACSA health and safety requirements.

Plant and Materials

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

Plant & Material storage and safeguard is the responsibility of the contractor. The contractor to clearly state the lead times on Contractor’s procurement of plant and materials.

Contractor’s procurement of Plant and Materials

Contractor to ensure that the material procured are compliant with the specification on the tender document, where possible the procurement preference should be given to Black owned suppliers

Tests and inspections before delivery

Factory Assessment Testing (FAT) shall be done between the OEM and the Contractor representing the employer. The Project Manager shall form part of the tests and be provided with testing schedule. A proof of Factory testing will be required prior the delivery of material.

Marking Plant and Materials outside the Working Areas

The contractor needs to state how the material will be marked once the deposit amount is paid. The contractor to indicate how the guarantee of the material delivery will be ensured once the deposit is paid upfront.

Contractor’s Equipment (including temporary works)

Contractor equipment and material to be safely secured at all times especially when not used on the airside.

5. Construction

Temporary works, Site services & construction constraints

Site establishment and equipment to be based on the airside. It will be a contractor's responsibility to provide a secure environment for their equipment. The contractor's personnel will be restricted to the contractors own established site and the agreed area of work. The contractor's personnel will not be permitted at the Airside/restricted areas without the necessary reflective jackets.

Employer's Site entry and security control, permits, and Site regulations.

An induction course must be attended by the contractor and all personnel who would be involved on site. The contractor to make his own arrangement for staff full medicals and schedule with the ACSA's project manager for the induction course. Security arrangements would be discussed at the induction meeting and should be strictly adhered to. It should be noted that ACSA premises complies to National Key Point Regulations, every person who conduct work at the airport will be subjected to security vetting. ACSA will not be held liable should one of the contractor members fail SAPS vetting process

The Contractor shall procure the services at King Shaka International Airport. All airside services are in restricted areas and access-controlled areas; accordingly, it is crucial for the Contractor to note that King Shaka International Airport is a National Key Point and governed as such.

(b) The Contractor shall be compensated for costs relating to Employer required permits.

(c) The Contractor must ensure that he/she is, at all times, familiar with the Employer's safety and security requirements relating to permits in order for no services to be delayed as a result thereof. This includes the permit application process (available to the Contractor upon request).

(d) The Contractor shall have no claim against the Employer in the event that a permit request is refused for reasons not attributable to the Employer.

(e) The following table is not all inclusive, but is provided for illustration purposes:

Permit	***Required by/for***	***Department***
AVOP – Airside Vehicle Operator permit	*All drivers of vehicles on airside*	*ACSA Safety*
Airside Vehicle Permit	*All vehicles that enter airside*	*ACSA Safety*
Basement Parking permit	*All vehicles allowed to enter the delivery basement*	*ACSA Parking*
Personal permit	*All persons employed on the airport*	*ACSA Security*
Cell phone permit	*All persons taking cell phones to airside*	*ACSA Security*
Lap top permit	*All persons taking lap top computers to airside*	*ACSA Security*

Camera permit	*All persons taking cameras or camera equipment to airside*	*ACSA Security*
Hot Works Permit	*All welding and/metal cutting services*	*ACSA Safety / Fire & Rescue*

(f) Proof of having attended the airside induction training course is required for all personal permit applications. Persons applying for an AVOP must provide proof of having attended an AVOP course. Fees are levied for these courses. Fees are further levied for all permit renewals and refresher courses - where applicable.

(g) Use of cell phones on airside is not permitted unless the user is in possession of an appropriate Airport permit for the device. Cell phone permit issuing authority lies with the ACSA Security department.

(h) The Contractor shall not be allowed to use two-way radios at on the Employer's Premises unless these radios are of the type as approved by the ACSA IT department and are intrinsically safe.

Restrictions to access on Site, roads, walkways and barricades

The Contractor shall protect the site properly and shall so arrange his operations that the minimum danger and inconvenience is caused to airport operations. For this purpose, he shall provide and maintain sufficient signs, lights, barriers, fencing and guarding as may be necessary or required.

People restrictions on Site; hours of work, conduct and records.

It is expected that contractors wear visible company uniform or reflector jackets with contractor name there-on when entering the premise as form of identification. Permits to be always displayed whilst on site.

Work will be conducted as a combination of day and night work to minimize the impact on operations. Work program to be submitted with the tender to ensure the manoeuvring area is clear of aircraft movements prior and during construction work.

Title to materials from demolition and excavation

Not applicable

Contractor's Equipment

Contractor to keep record of equipment on site, service history etc. and keep a copy on site.

Site services and facilities provided by the *Employer*

The Contractor shall be entitled to use such supplies of electricity and water as may be available on the Site for the purpose of the Works and at his own expense, shall provide any apparatus necessary for such use. The Contractor shall notify ACSA of any equipment or facility, which will be a consumer of electricity and water. The Contractor shall provide everything else necessary for Providing the Works

Facilities provided by the *Contractor.*

Facilities e.g., storage, site offices, vehicle, equipment provided by the contractor should be safeguarded by the contractor during the construction and be removed off site upon the completion of the contract.

Existing premises, inspection of adjoining properties and checking work of Others.

All operations required in connection with the Agreement shall, as far as the provisions of the Agreement permit, not unnecessarily or in an improper manner encroach upon the use of airport facilities.
The contractor is to take cognizance that the airport is used by others and other contractors may be on site for unrelated projects/services.

Site conditions and requirements

Safety measures to be adhered to according OHS Act. Adhere to ACSA airside safety requirements regarding equipment, vehicles, and personnel operating on the airside.
Full risk analysis on working on height, next to aircraft and airside and mitigation thereof to considered as part of safety file requirements.

Contractor to ensure that other Underground services, other existing services, cable and pipe trenches and covers are identified to prevent any disruption to these services due to contractor's activities.

Contractor to take necessary steps to control noise, dust, water and waste during his/her activities onsite.

Completion, testing, commissioning, and correction of Defects

Work to be done by the Completion Date

All work is to be done by the Contractor shall be completed by the Completion Date, save for the following: list project-specific exceptions and state by when the work should be completed.

The *Project Manager* cannot certify Completion until all the work except that listed above has been completed 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. 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. Any defect must be attended to as stipulated in the defect clause

Materials facilities and samples for tests and inspections

The contractor to present the product sample to the Project Manager prior the installation and submit the relevant factory test certificates.

Commissioning.

The contractor to submit the commission procedures and plan to the Project Manager for approval. The commissioning procedure and plans will be adhered to during commissioning.

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

The contractor to ensure that he complies with all ACSA security, safety, environmental and operational requirements prior to the commencement of works complete accordingly.

Take over procedures.

The works will be handed over partially or fully once commissioned and certified by Project Manager. The commissioning should be witnessed by both ACSA representative and the contractor representative.

Access given by the *Employer* for correction of Defects

The Project Manager arranges for the Employer to allow the Contractor access to and use of a part of the works which has been taken over if needed to correct a Defect. After the works have been put into operation, the Employer may require the Contractor to undertake certain procedures before such access can be granted. Performance tests after Completion

Performance tests after Completion

Contractor to ensure all necessary tests and calibrations are conducted and submit all reports to the *Employer.*

Operational maintenance after Completion Maintenance manuals and training will be provided by the contractor on completion of works.

6. Plant and Materials standards and workmanship

Investigation, survey and Site clearance

Contract to ensure that a thorough inspection and clearance is conducted prior commencement of work of any other services that might be impacted by contractor's activities.

Building works

Product specification and installation standard to be compliant with the standard stated above in the Scope of Works

Civil engineering and structural works

As per Scope of Work

Electrical & mechanical engineering works

As per Scope of Work

7. List of drawings

1.1. 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

Drawing number	Revision	Title

PART C4: SITE INFORMATION

C3.2 *CONTRACTOR*'S WORKS INFORMATION

Description of works

Document reference	Title	No of pages
	This cover page Site Information	
	Total number of pages	

Core clause 11.2(16) states

"Site Information is information which describes the Site and its surroundings and is in the documents which the Contract Data states it is in."

In Contract Data, reference has been made to this Part 4 of the contract for the location of Site Information.

Description of the Site and its surroundings

General description

The work will be carried out at King Shaka International Airport Airside and Landside.

Existing buildings, structures, and plant & machinery on the Site

Figure 1: King Shaka International Airport Satellite Photo

Other reports and publicly available information

KSIA is a national key point, and the contractor must read the national key point ACT to familiarise themselves with the regulations.