C1.1 Forms of Offer and Acceptance

Offer
The employer, identified in the acceptance signature block, wishes to enter into a contract for the

MAINTENANCE OF HVAC ELECTRICALS, AND CONTROLS SYSTEMS FOR A PERIOD OF 60 MONTHS

The Contractor, identified in the offer signature block, has examined this document and addenda hereto as listed in the schedules, and by submitting this offer has accepted the conditions thereof.

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

The offered total of the Prices exclusive of VAT is	
Value Added Tax @ 15% is	
The total offered amount due inclusive of VAT is	
(in words)	

(The above amount should be calculated as per the guide provided in the Pricing Data [Subtotal F]. In the event of any conflict between the amount above and the Pricing Data [Subtotal F], the former shall prevail.)

for the Contractor

Signature . . . . . Date . . . . . .

Name . . . . . Capacity . . . . . .

(Name and address of organisation) . . . . . .

. . . . . .

. . . . . .

Name and signature of witness . . . . . signature . . . . . .

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

Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the Contractor'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 Contractor's offer shall form an agreement between the employer and the Contractor upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1: Agreements and contract data, (which includes this agreement)
Part C2: Pricing data and Price List
Part C3: Service information.
Part C4: Site information
and schedules, drawings and documents or parts thereof where so indicated.

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

The Contractor shall within two weeks after 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 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 Bidder receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the Bidder (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.

for the Employer

Signature . . . . . Date . . . .

Name . . . . . Capacity . . . . . .

Airports Company South Africa,
3rd Floor ACSA North Wing Offices
O R Tambo International Airport
Kempton Park
1627

Name of witness . . . . . signature . . . . . .

Schedule of Deviations

1 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

2 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

3 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

4 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

5 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

By the duly authorised representatives signing this agreement, the employer and the Contractor 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 tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Bidder 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 Bidder of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

C1.2 Contract Data

Precedence in interpretation of the contract:
In the event of any ambiguity, inconsistency or conflict between the General Conditions of Contract, Special Conditions, Pricing Data, Service information, or other, the order of precedence shall be as follows:

Firstly, the Contract Data (C1.2) and Conditions of Contract;

Secondly the Pricing data;

Thirdly, the Service information (C3) and Annexes thereto shall prevail;

Fourthly, the additional conditions of contract under these Z clauses

Lastly any schedules, drawings and other documents included with this agreement.

General Conditions of Contract

The General Conditions of Contract comprise the NEC3 Term Service Contract, April 2013, published by the NEC, and the following "Particular Conditions", which include amendments and additions to such General Conditions.

The following Particular Conditions amplify the General Conditions of Contract and highlight areas in that document that require specific attention.

Wherein in the contract it is stated no contract data is required accordingly the *conditions of contract* remain unaltered as per NEC3 Term Service Contract, April 2013.

C1.2a - Data provided by the *Employer*

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for main Option:	
		A: Priced contract with price list
	dispute resolution Option:	**W1: Dispute resolution procedure**
		X1: Price Adjustment for inflation
	and secondary Options:	**X2: Changes in the law**
		X17: Low service damages
		X18: Limitation of Liability (as amended in Option Z)
		X19: Task Order
		X20: Key performance indicators
		Z: Additional conditions of contract
	of the NEC3 Term Service Contract (April 2013)	
10.1	The *Employer* is:	**Airports Company South Africa SOC Limited (ACSA), Registration No 1993/004149/30, VAT no 4930138393, a juristic person incorporated in terms of the company laws of the Republic of South Africa**
	Address	**O. R. Tambo International Airport Private Bag X1 3rd Floor ACSA North Wing Offices OR Tambo International Airport 1627**
	Tel No.	**011 921 6911**
10.1	The *Service Manager* is:	**TBA**
	Address	
	Tel No.	
	e-mail	
11.2(2)	The *Affected Property* is	**O. R. Tambo International Airport**

11.2(13)	The *service* is	**Maintenance of HVAC Electricals and Control Systems at O.R. Tambo International Airport for a period of 60 months, as more fully set out in section C3 *Service Information*.**
11.2(14)	The following matters will be included in the Risk Register	**1. Risk of financial loss and/or injury of 3rd parties due to the proximity of the *service* (or of persons providing the *service*) to all airport users** **2. Risk of injury to contract personnel and all airport users due to lifting/moving of heavy objects** **3. Work in confined spaces** **4. Work with flammable and toxic gases** **5 Refer to Annexure E for more risks**
11.2(15)	The *Service Information* is in	**Part C3: Employer's Service Information and all documents and drawings and other specifications to which it makes reference**
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 for reply* is	**3 working days**
2	**The Contractor's main responsibilities**	**Detailed in Part C3 (Service Information)**
21.1	The *Contractor* submits a first plan for acceptance within	**8 weeks of the Contract Date**
3	**Time**	
30.1	The *starting date* is	**Upon signing of the contract by ACSA**
30.2	The *Service Period* is	**Sixty (60) months after signing of the contract by ACSA or when the amount in the Form of Offer has been expended, whichever occurs first**
4	**Testing and Defects**	**No data is required for this section of the *conditions of contract***
5	**Payment**	
50.1	The *assessment interval* is on the	**between the 1st and 15th day of each successive month.**
51.1	The *currency of this contract* is the	**South African Rand (ZAR)**
51.2	The period within which payments are made is	**30 days**

51.4	The *interest rate* is	**The prime lending rate of the Nedbank Bank, as determined from time to time.**
6	**Compensation events**	**No data is required for this section of the *conditions of contract.***
7	**Use of Equipment Plant and Materials**	**No data is required for this section of the *conditions of contract.***
8	**Risks and insurance**	
83.1	The *Employer* provides these insurances from the Insurance Table	**(i) Insurance against loss of or damage to the *services*, Plant and Materials comprising Contract Works Insurance, SASRIA Special Risks Insurance and Marine & Air Cargo insurance; and** **(ii) Insurance (Public Liability Insurance) against liability for loss or damage to property (except the *services*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with the contract;** **Note: The terms and other matters applicable to these insurances provided by the Employer (and to insurances generally) are detailed in the insurance schedule attached as section C1.5 to the *contract* ("the Insurance Schedule").**
83.1	The *Contractor* provides these additional insurances	**Professional Indemnity Insurance** **Note: The terms and other matters applicable to this insurance provided by the Employer are likewise detailed in section C1.5 to the *contract*.**
83.2	The minimum amounts of cover or minimum limits of indemnity required for the insurance table	**Refer to section C1.5 Insurance Schedule**
83.1	The *Employer* provides these insurances from the Insurance Table	**Refer to section C1.5 Insurance Schedule**
83.1	The *Employer* provides these additional insurances	**Refer to section C1.5 Insurance Schedule**
83.1	The minimum amount of cover for insurance against loss and damage caused by the *Contractor* to the *Employer*'s property is	**Refer to section C1.5 Insurance Schedule**
83.1	The minimum amount of cover for loss of or damage to Plant and Materials provided by the *Employer* is:	**Refer to section C1.5 Insurance Schedule**

83.1	The minimum amount of cover for insurance in respect of loss of or damage to property (except the *Employer*'s property, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) arising from or in connection with the *Contractor*'s Providing the Service for any one event is:	**Refer to section C1.5 Insurance Schedule**
83.1	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 and the *Contractor's* common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R [●] ([●] Rands)**
9	**Termination**	There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.
10	**Data for main Option clause**	
A	**Priced contract with price list**	
20.5	The *Contractor* prepares forecasts of the final total of the Prices for the whole of the *service* at intervals no longer than	**4 weeks.**
11	**Data for Option W1**	
W1.1	The *Adjudicator* is	**The person selected from the ICE-SA list of Adjudicators by the Party intending to refer a dispute to him** **[ICE-SA is a joint Division of the South African Institution of Civil Engineering and the Institution of Civil Engineers (London) (see www.ice-sa.org.za) or its successor body]**
W1.2(3)	The *Adjudicator nominating body* is:	**The Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the Institution of Civil Engineers (London) (see www.ice-sa.org.za) or its successor body**
W1.4(2)	The *tribunal* is:	**arbitration**
W1.4(5)	The *arbitration procedure* is	**The latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body**
	The place where arbitration is to be held is	**Johannesburg, South Africa**

	The person or organization who will choose an arbitrator	**The Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body**
12	**Data for secondary Option**	
X1	**Price Adjustment for inflation**	**The index referred to in this clause shall be deemed to refer to the CPI index on the *starting date*. Price adjustment for inflation shall only take place on contract anniversary**
X2	**Changes in the law**	**No data is required for this secondary Option**
X13	**Performance bond**	
X13.1	The amount of the performance bond is	**Refer to section C1.4 Forms of Sureties**
X17	**Low service damages**	**As per the Service Information (C3) – Annex G section 6**
X17.1	The *service level table* is in	**The Service Information, Annex G**
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 of the Prices**
X18.3	The *Contractor*'s liability for Defects due to his design of an item of Equipment is limited to	**The total of the Prices**
X18.4	The *Contractor*'s total liability to the *Employer*, for all matters arising under or in connection with this contract, other than the 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 limited to the total of the Prices and applies in contract, tort or delict and otherwise to the extent allowed under the law of the contract.** **The excluded matters are amounts payable by the Contractor as stated in this contract for:** - **Loss of or damage to the Employer's property,** - **Defects liability,** - **Insurance liability to the extent of the Contractor's risks** - **death of or injury to a person;** **infringement of an intellectual property right**

X18.5	The *end of liability date* is	**52 weeks after the end of the service period.**
X19	**Task Order**	
X19.5	The *Contractor* submits a Task Order programme to the *Service Manager* within	**5 days of receiving the Task Order**
X20	**Key Performance Indicators**	
X20.2	A report of performance against each Key Performance Indicator is provided at intervals of	**Three (3) months**

Z	**The *additional conditions of contract* are**

AMENDMENTS TO THE CORE CLAUSES

Z1 **Interpretation of the law**

Z1.1 **Add to core clause 12.3:** Any extension, concession, waiver, non-enforcement of any terms of the contract or relaxation of any action stated in this contract by the Parties, the *Service Manager*, the, 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 Service: Delete core clause 20.1 and replace with the following:**

Z2.1 The *Contractor* provides the *service* in accordance with the *Service* Information and warrants that the results of the *service*, when complete, shall be fit for their intended purpose.

Z3. **Other responsibilities: add the following at the end of core clause 27:**

Z3.1 The *Contractor* shall have satisfied himself, prior to the *starting date*, as to the completeness, sufficiency and accuracy of all information and drawings provided to him as at the *starting date*.

Z3.2 The *Contractor* shall be responsible for the correct setting out or carrying out of the *service* in accordance with the original points, lines and levels stated in the *Service* Information or notified by the *Service Manager*,. Any errors in the setting or carrying out of the *service* shall be rectified by the *Contractor* at the *Contractor's* own costs.

Z4. **Termination**

Z4.1 **Add the following to core clause 91.1, at the second main bullet, fourth sub-bullet point, after the words "assets or":** "business rescue proceedings are initiated or steps are taken to initiate business rescue proceedings".

Z4.2 **Add the following to core clause 91.8,** The *Employer* may terminate the Contract in the event that the *Contractor* is unable to maintain an average availability of 91% for a continuous period of twenty-four (24) weeks as measured by ACSA IMCS system (R22).

Z4.3 **Add the following to the Termination Table:** If the Employer terminates in terms of this clause 91.8, the procedures on termination are P1, P3 and P4 as stated in clause 92, and the amount due is A1 and A2 as stated in clause 93.

Z5 **Ambiguities and inconsistencies: Delete core clause 17 and replace with the following:**

Z5.1 If there is any ambiguity or inconsistency in or between the documents which are part of this contract, the priority of the documents is in accordance with the following sequence:

- Firstly, the Contract Data (C1.2) and Conditions of Contract;
- Secondly the Pricing data;
- Thirdly, the Service information (C3) and Annexes thereto shall prevail;
- Fourthly, the additional conditions of contract under these Z clauses
- Lastly any schedules, drawings and other documents included with this agreement.

Z5.2 The *Service Manager* or the *Contractor* notifies the other as soon as either becomes aware of any such ambiguity or inconsistency in or between the documents which are part of this contract. The *Service Manager* gives an instruction resolving the ambiguity or inconsistency. Notwithstanding any other provision of this contract, any such ambiguity, inconsistency and/or instruction does not automatically result in any increase to the *price list* or any delay to the end of the *service period*.

Z6 **Payment: Add the following at the end of core clause 51:**

51.5 The *Employer* does not pay interest to the *Contractor* on a late payment resulting from the *Contractor's* failure to provide the *Employer* with a correctly rendered VAT invoice within the period stated in clause 51.1 above.

51.5 The *Employer* is entitled to deduct from or set off against any money due to the *Contractor*

- any sum due to the *Employer* from the *Contractor* or
- any amount for which the *Contractor* is liable to pay to the *Employer* (whether liquidated or otherwise) arising under this contract.

AMENDMENTS TO THE SECONDARY OPTION CLAUSES

Z7. **Changes in Law: Add the following clause to secondary option X2 as X2.2:**

Z7.1 A change in law is defined as:

Z7.1.1 the adoption, enactment, promulgation, coming into effect, repeal, amendment, reinterpretation, change in application or other modification after the starting date of any law, excluding (i) the promulgation of any bill, unless such bill is enacted into the *law of the country*, and (ii) any such modification in law relating to any taxes, charges, imposts, duties, levies or deductions that are assessed in relation to a person's income;

Z7.1.2 any permit being terminated, withdrawn, amended, modified or replaced, other than (i) in accordance with the terms upon which it was originally granted, (ii) as a result of the failure by the *Contractor* to comply with any condition set out therein, or (iii) as a result of any act or omission of the *Contractor*, any subcontractor or any affiliate to the *Contractor*.

Z8. **Performance Bond: The following amendments are made to clause X13:**

Z8.1 **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 or insurer which the *Service Manager* has accepted in his or her discretion, for the amount stated in the Contract Data and in the form set out in Section C1.4 of this Contract Data.

Z8.2 **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 *service period.* If the terms of the performance bond specify its expiry date and the end of the *service 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 *service 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.

Z9 **Limitation of liability: Insert the following new clause as Option X18.6:**

Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss or damage of any kind is limited to R0.00.

Z9.2 Notwithstanding any other clause in this contract, any proceeds received from any insurance 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

Z10 **Cession, delegation and assignment**

Z10.1 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 final) of the *Contractor*.

Z10.2 The *Employer* may, on written notice to the *Contractor*, cede and delegate its rights and obligations under this contract to any person or entity.

Z11 **Joint and several liability**

Z11.1 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 this Contract.

Z11.2 The *Contractor* shall, within 1 week of the starting date, notify the *Service Manager* and the *Employer* of the key person who has the authority to bind the *Contractor* on its behalf.

Z11.3 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*.

Z12. **Ethics**

Z12.1 The *Contractor* undertakes:

Z12.1.2 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;

Z12.1.2 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.

Z12.2 The *Contractor*'s breach of this clause constitutes grounds for terminating the *Contractor*'s obligation to Provide the Service in accordance with the procedures stated P2, P3 or P4 in core clause 92.2 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.

Z12.3 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, gratuities, 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.

Z13 **Confidentiality**

Z13.1 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 *Service Manager*, whose consent shall not be unreasonably withheld.

Z13.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the *Service Manager*.

Z13.3 This undertaking shall not apply to –

Z13.3.1 information disclosed to the employees of the *Contractor* for the purposes of the implementation of this contract. The *Contractor* undertakes to ensure that its employees are aware of the confidential nature of the information so disclosed and that they comply with the provisions of this clause;

Z13.3.2 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;

Z13.3.3 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);

Z13.4 The taking of images (whether photographs, video footage or otherwise) of the *services or Affected Property* or any portion thereof, in the course of providing the *services* or at the end of the service period requires the prior written consent of the *Service Manager*. All rights in and to all such images vests exclusively in the *Employer*.

Z13.5 The *Contractor* ensures that all his Subcontractors abide by the undertakings in this clause.

Z14 *Employer*'s Step-in rights

Z14.1 If the *Contractor* defaults by failing to comply with its obligations in terms of this contract and fails to remedy such default within two (2) weeks of the notification of the default by the *Service Manager*, the *Employer*, without prejudice to its other rights, powers and remedies under the contract, or at law may remedy the default either, itself or procure a third party (including any subcontractor or supplier of the *Contractor*) to do so on its behalf. The reasonable costs of the *Employer* exercising its step-in rights in respect of any subcontractor or supplier of the *Contractor* shall be borne by the *Contractor*.

Z14.2 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 Service *Manager* to achieve this end

Z15 Liens and Encumbrances

Z15.1 The *Contractor* keeps the Equipment used to Provide the Service 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 ensures 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

Z16 Intellectual Property

Z16.1 Intellectual Property ("IP") rights means all rights in and to any patent, design, copyright, trade mark, trade name, trade secret, other intellectual or industrial property rights, technical information and concepts, know-how, specifications, data, formulae, computer programs, memoranda, scripts, reports, manuals, diagrams, drawings, prototypes, drafts and any rights to them created during the performance of the service and include applications for and rights to obtain or use any such intellectual property whether under South African or foreign law.

Z16.2 IP rights remain vested in the originator and shall not be used for any reason whatsoever other than carrying out the *service.*

Z16.3 The *Contractor* gives the *Employer* an irrevocable, transferrable, non-exclusive, royalty free licence to use and copy all IP related to the *service* for the purposes of constructing, repairing, demolishing, operating and maintaining the *service* or *the Affected Property*.

Z16.4 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.

Z16.5 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:

Z16.5.1 the *Contractor's service*;

Z16.5.2 the use of the *Contractor's* Equipment, or

Z16.5.3 the proper use of the *Affected Property* on which the service is provided.

Z16.6 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.

Z17. **Dispute resolution: The following amendments are made to Option W1:**

Z17.1 **Under clause W1.3, in the fourth row of the first column of the adjudication table, the following words are added after the words "any other matter":** "excluding disputes relating to termination of the contract".

Z17.2 **The following clauses are added at the end of clause W1.3 as sub-clauses (12) and (13) respectively:**

Z17.2.1 "The Adjudicator shall decide the dispute solely on the written submissions of the parties. No oral submissions shall be heard during adjudication."

Z17.2.2 "Disputes relating to or arising from termination of the Contract shall not be determined by an adjudicator. Any such dispute shall be referred directly to the tribunal in accordance with the procedures set out in clause W1.4."

Z18 **Day:**

Z18.1 Any reference to a day in terms of this contract shall be construed as a calendar day.

Z19 **Safety:**

Z19.1 The *Employer*, *Service Manager* or any of his nominated representatives may stop any unsafe *service*. The *Contractor* does not proceed with the relevant service until the safety violation is corrected. This instruction to stop or not to start the *service* is not a compensation event.

Z19.2 As stipulated by section 37(2) of the Occupational Health and Safety Act No. 85 of 1993 (**OHS Act)** as amended the Contractor agrees to the following:

Z19.2.1 As part of the contract, the *Contractor* acknowledges that it is an *Employer* in its own right with duties as prescribed in the OHS Act, as amended and agrees to ensure that all work performed, or equipment and materials used, are in accordance with the provisions of the OHS Act.

Z19.2.2 The *Contractor* furthermore agrees to comply with the requirements set forth by the *Service Manager* and agree to liaise with the *Employer* should the *Contractor*, for whatever reason, be unable to perform in terms of the clause Z18.

Z19.3 The *Contractor* acknowledges that it is an *Employer* in its own right and is registered with duties as prescribed in the Compensation for Occupational Injuries & Diseases Act No. 130 of 1993.

C1.2 b - DATA PROVIDED BY THE *CONTRACTOR*

Clause	Statement	Data
10.1	The Contractor is (Name):	
	Company Registration Number	
	Company VAT Number	
	Address	
	Telephone no.	
	Fax No.	
11.2	The *working areas* are	See C3 'Service Information'
11.2(8)	**The direct fee percentage is:**	**……10%**
	The subcontracted fee percentage is:	**……10%**
24.1	The *Contractor's Key people* are:	**CV's to be appended to Resource Proposal (Annex F)**
1	**SITE MANAGER/SUPERVISOR**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
2	**Control Technician**	

	Name:	
	Qualifications relevant to this contract	
	Experience	
3	**Lead Electrician**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
4	**Electrician**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
5	**BMS, Controls and Data Analytics Engineer**	
	Name:	
	Qualifications relevant to this contract	

	Experience	
6	**Assistant**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
11.2	The following matters will be included in the Risk Register	1. 2. 3. 4. 5. 6.

C1.3 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 Organization: **AIRPORTS COMPANY SOUTH AFRICA** **O R Tambo INTERNATIONAL AIRPORT**
Physical Address: **Airport Company South Africa** **OR Tambo International Airport** **ACSA Building, 4th Floor**

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 OHS Act 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 use 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 duly 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 OHS Act 85 of 1993 and its regulations are complied with.

Mandatary – WCA/ Federated Employers Mutual No…….

Expiry date …….

_____	_____
SIGNATURE ON BEHALF OF MANDATARY (Warrant his authority to sign)	**DATE**
_____	_____
SIGNATURE ON BEHALF OF THE CLIENT AIRPORT COMPANY SOUTH AFRICA	**DATE**

C1.4 Forms of Securities

No performance bond or parent company guarantee is required in this contract

Pro forma Performance Bond – Demand Guarantee (for use with Option X13)*(to be reproduced exactly as shown below on the letterhead of the Bank providing the Bond / Guarantee)*

Airports Company South Africa SOC Limited
Reg. No 1993/004149/30 VAT no 4930138393
O R Tambo International Airport
Private Bag X1
3rd Floor ACSA North Wing Offices
OR Tambo International Airport
1627

Bank reference No.

Date:

Dear Sirs,

Performance Bond – Demand Guarantee for [insert name of Contractor] required in terms of contract [insert Contractor's contract reference number or title]

1. In this Guarantee the following words and expressions shall have the following meanings:-

1.1	"Bank" means	[Insert name of Bank], [●] Branch, Registration No. [●]
1.2	"Bank's Address" means	[Insert physical address of Bank]
1.3	"Contract" means	the written agreement relating to the Service, entered into between the Employer and the Contractor on or about the [●] day of [●] 20[●] (Contract Reference No. [●]) as amended, varied, restated, novated or substituted from time to time;
1.4	"Contractor" means	[●] a company registered in accordance with the laws of [●] under Registration No [●].
1.5	"Employer" means	Airports Company South Africa SOC Limited, a company registered in accordance with the laws of the Republic of South Africa under Registration Number 1993/004149/30
1.6	"Expiry Date" means	the earlier of • the date that the Bank receives a notice from the Employer stating that all amounts due from the Contractor as certified in terms of the contract have been received by the Employer and that the Contractor has fulfilled all his obligations under the Contract, or • the date that the Bank issues a replacement Bond for such lesser or higher amount as may be required by the Employer.
1.7	"Guaranteed Sum" means	the sum of R[●], ([●] Rand)
1.8	"Service" means	Maintenance of HVAC Electricals And Controls Systems set out in the Section C3, Works Information

2. At the instance of the Contractor, we the undersigned _____ and _____, in our respective capacities as _____ and _____ of the Bank, and duly authorized thereto,

confirm that we hold the Guaranteed Sum at the disposal of the Employer as security for the proper performance by the Contractor of all of its obligations in terms of and arising from the Contract and hereby undertake to pay to the Employer, on written demand from the Employer received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.

3. A demand for payment under this guarantee shall be made in writing at the Bank's address and shall:

   - be signed on behalf of the Employer by a director of the Employer;
   - state the amount claimed ("the Demand Amount');
   - state that the Demand Amount is payable to the Employer in the circumstances contemplated in the Contract.

4. Notwithstanding the reference herein to the Contract the liability of the Bank in terms hereof is as principal and not as surety and the Bank's obligation/s to make payment:

   - is and shall be absolute provided demand is made in terms of this bond in all circumstances; and
   - is not, and shall not be construed to be, accessory or collateral on any basis whatsoever.

5. The Bank's obligations in terms of this Guarantee:

   - shall be restricted to the payment of money only and shall be limited to the maximum of the Guaranteed Sum; and
   - shall not be discharged and compliance with any demand for payment received by the Bank in terms hereof shall not be delayed, by the fact that a dispute may exist between the Employer and the Contractor.

6. The Employer shall be entitled to arrange its affairs with the Contractor in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the Contractor or any variation under or to the Contract.

7. Should the Employer cede its rights against the Contractor to a third party where such cession is permitted under the Contract, then the Employer shall be entitled to cede to such third party the rights of the Employer under this Guarantee on written notification to the Bank of such cession.

8. This Guarantee:

   - shall expire on the Expiry Date until which time it is irrevocable;
   - is, save as provided for in 7 above, personal to the Employer and is neither negotiable nor transferable;
   - shall be returned to the Bank upon the earlier of payment of the full Guaranteed Sum or expiry hereof;
   - shall be regarded as a liquid document for the purpose of obtaining a court order; and
   - shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the Courts of the Republic of South Africa.
   - will be invalid and unenforceable if any claim which arises or demand for payment is received after the Expiry Date.

9. The Bank chooses domicilium citandi et executandi for all purposes in connection with this Guarantee at the Bank's Address.

Signed at ---------- on this ..... day of ..... 20__

For and on behalf of the Bank

Bank Signatories(s) .....

Name(s) (printed)		
Witness(s)		
Bank's seal or stamp		

C1.5 Insurance Schedule

Summary of Terms and other Matters Applicable to Employer **Provided Insurance**

Part 1:

Notes to Schedule:

- The provision of insurance by the *Employer* does not limit the obligations, liabilities or responsibilities of the *Contractor* under this contract in any way whatsoever (including but not limited to any requirement for the provision by the *Contractor* of any other insurances).
- Unless specifically otherwise stated, capitalised terms in this schedule (other than *Employer*, *Contractor* and *works* where written in italics) have the meaning assigned to them in the relevant policy of insurance.
- This Insurance Schedule is a generic term sheet generally applicable to the Employer's projects. In the circumstances:
    - If this Insurance Schedule reflects the amount of any cover provided by the *Employer* to be higher than the amount required in the Contract Data, the *Employer*'s obligation under this Contract is limited to the lower amount; and
    - If this Insurance Schedule provides for any cover which is not stated to be provided by the *Employer* in the Contract Data, the *Employer*'s obligation under this Contract is limited to the cover stated in the Contract Data.
- **[**The terms governing the Employer provided policies of insurance are the terms detailed in the policies themselves. This schedule is merely a summary of the key terms. It is the responsibility of the tenderer to obtain copies of the policies and satisfy itself of the actual terms as required by the tenderer.**]**

Part 2:

ACSA Maintenance Contracts Insurance Clause.
Insurance Affected by the Employer.

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

a) **PUBLIC LIABILITY Insurance** – which will provide indemnity against the insured parties legal liability in the event of accidental death of or injury to third party persons and/or accidental loss of or damage to third party property arising directly from the execution of the contract with a limit of indemnity of **R 100 million** in respect of all claims arising from any one occurrence or series of occurrences consequent on or attributable to one source or original cause. The policy will be subject to a Deductible of **R25 000** for Property Damage claims only but **R250 000** where Loss or Damage involves Aircraft.

(i) The Employer shall pay any premium due in connection with the insurance affected by the Employer.

(ii) The Contractor shall not include any premium charges for this insurance except to the extent that 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.

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

(iv) In the event of any occurrence which is likely to or could give rise to a claim under the insurances 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's Insurance Broker or the Insurers by telephone or telefax giving the circumstances nature and an estimate of the loss or damage or liability

(B) complete a Claims Advice Form available from the Insurance Brokers to whom the form must be returned without delay.

(C) negotiate the settlement of claims with the Insurers through the Employer's Insurance Brokers and shall when required to do so obtain the Employer's approval of such settlement.

The Employer and Insurers shall have the right to make all and any enquiries to the site of the Works or elsewhere as to the cause and results of any such occurrence and the Contractor shall co-operate in the carrying out of such enquiries.

(v) The Contractor will be liable for the amount of the Deductible (First Amount Payable in respect of any claim made by or against the Contractor or Sub-Contractors under the insurances effected by the Employer.
Where more than one Contractor is involved in the same claim the Deductible will be borne in pro-rata amounts by each Contractor in proportion to the extent of each Contractor's admitted claim.

(vi) Any amount which becomes payable to the Contractor or any of his Sub-Contractors as a result of a claim under the Contact Works Insurance shall if required by the Employer be paid net of the Deductible to the Employer who shall pay the Contractor from the proceeds of such payment upon rectification repair or reinstatement of the loss or damage but this provision shall not in any way affect the Contractor's obligations liabilities or responsibilities in terms of the Contract.
In respect of any amount which becomes payable as a result of a claim under any Public Liability Insurance the Contractor or his Sub-Contractors shall be required to pay the amount of the Deductible to the Insurer to facilitate settlement of such claim.

Insurance Affected by the Contractor.

Without in any way detracting from any requirements contained elsewhere in this contract the Contractor and Sub-Contractors shall where applicable, provide as a minimum the following:

(a) INSURANCE OF CONTRACTORS 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.

(b) Insurance in terms of the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as may be amended or in terms of any similar Workers Compensation and Unemployment Insurance enactment's in the Suppliers' or Sub Supplier's operational, manufacturing or assembly locations.

(c) Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability indemnity.

(d) Public Liability Insurance for an amount sufficient to cover the Contractors obligations in terms of the Deductible of **R25 000** or **R250 000** as stated above.

i. The insurances to be provided by the Contractor and his Sub-Contractors shall:

(A) be affected with Insurers and on terms approved by the Employer.
(B) be maintained in force for whatever period the perils to be insured by the Contractor are at risk (including any defects liability period during which the Contractor is responsible for the care of the Works)
(C) submit to the Employer the relevant Policy or Policies of Insurance or evidence acceptable to the Employer that such insurances have been affected.

ii. 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.

Sub-Contractors

The Contractor shall:

a) ensure that all potential and appointed Sub-Contractors are aware of the whole contents of this clause, and
b) enforce the compliance by Sub-Contractors with this clause where applicable."

C2.1 Pricing assumptions: Option A

The *conditions of contract*

How work is priced and assessed for payment

Clause 11 in NEC3 Term Service Contract, April 2013 (TSC3) core clauses and Option A states:

Identified and defined terms	11 11.2	(12) The Price List is the *price list* unless later changed in accordance with this contract. (17) The Price for Services Provided to Date is the total of the Price for each lump sum item in the Price List which the *Contractor* has completed and where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the *Contractor* has completed by the rate. (19) The Prices are the amounts stated in the Price column of the Price List. Where a quantity is stated for an item in the Price List, the Price is calculated by multiplying the quantity by the rate.

This confirms that Option A is a priced contract where the Prices are derived from a list of items of service which can be priced as lump sums or as expected quantities of service multiplied by a rate or a mix of both. Where it is contemplated that the Price List represents the type of work, quantity and cost thereof which may or not be selected by the Employer, it is important to ensure that service items listed do not create liability on a daily basis if that is not the intention. For example, if the service is maintenance of an installation on an ad hoc or call-off basis which may require the Contractor to be on standby but not permanently on the Affected Property, avoid listing service items which may be treated as preliminary and general (P&Gs) items, whether fixed or time-related such as contractual requirements, establishing on site, offices, storage, ablutions, water supplies, power supply, telecommunications. The Price List should align with the intention of the contract and selection of Option X 19 should be considered. If the Contractor is required to price P&G items ensure that the tender, contract and Price List provides clearly that daily charges are applicable only as necessitated by the specific activity and authorised by the Service Manager. Particular care should be taken when utilising SANS 1200 as a guide for tenderers or for preparing templates for Price Lists in tenders. Avoid referring to the Price List as the Activity Schedule.

Function of the Price List

Clause 54.1 in Option A states: “Information in the Price List is not Service Information”. This confirms that instructions to do work or how it is to be done are not included in the Price List but in the Service Information. This is further confirmed by Clause 20.1 which states, “The *Contractor* Provides the Service in accordance with the Service Information”. Hence the *Contractor* does **not** Provide the Service in accordance with the Price List. The Price List is only a pricing document.

Link to the *Contractor*’s plan

Clause 21.4 states “The *Contractor* provides information which shows how each item description on the Price List relates to the operations on each plan which he submits for acceptance”. Hence when compiling the *price*

list, the tendering contractor needs to develop his first clause 21.2 plan in such a way that operations shown on it can be priced in the *price list* and result in a satisfactory cash flow in terms of clause 11.2(17).

Preparing the *price list*

It will be assumed that the tendering contractor has read Pages 14, 15 and 76 of the TSC3 Guidance Notes before preparing the *price list*. Items in the *price list* may have been inserted by the *Employer* and the tendering contractor should insert any additional items which he considers necessary. Whichever party provides the items in the *price list* the total of the Prices is assumed to be fully inclusive of everything necessary to Provide the Service as described at the time of entering into this contract.

1 As the *Contractor* has an obligation to correct Defects (core clause 42.1) and there is no compensation event for this unless the Defect was due to an *Employer's* risk, the lump sum Prices and rates must also include for the correction of Defects.

2 If the *Contractor* has decided not to identify a particular item in the *price list* at the time of tender the cost to the *Contractor* of doing the work must be included in, or spread across, the other Prices and rates in the *price list* in order to fulfil the obligation to complete the *service* for the tendered total of the Prices.

3 There is no adjustment to lump sum prices in the *price list* if the amount, or quantity, of work within that lump sum item of service later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event. See Clause 60.1.

4 Hence the Prices and rates tendered by the *Contractor* in the *price list* are inclusive of everything necessary and incidental to Providing the Service in accordance with the Service Information, as it was at the time of tender, as well as correct any Defects not caused by an *Employer's* risk.

5 The Contractor does not have to allow in his Prices and rates for matters that may arise as a result of a compensation event. It should be noted that the list of compensation events includes those arising as a result of an *Employer's* risk event listed in core clause 80.1.

Format of the *price list*

(From page 76 of the TSC3 Guidance Notes)

Entries in the first four columns in the *price list* in section C2.2 are made either by the *Employer* or the tendering contractor.

If the *Contractor* is to be paid an amount for the item which is not adjusted if the quantity of work in the item changes, the tendering contractor enters the amount in the Price column only, the Unit, Expected Quantity and Rate columns being left blank.

If the *Contractor* is to be paid an amount for an item of work which is the rate for the work multiplied by the quantity completed, the tendering contractor enters the rate which is then multiplied by the Expected Quantity to produce the Price, which is also entered.

If the *Contractor* is to be paid a Price for an item proportional to the length of time for which a service is provided, a unit of time is stated in the Unit column and the expected length of time (as a quantity of the stated units of time) is stated in the Expected Quantity column.

C2.2 Price List

The following Activity Schedule is provided "as-is" for the benefit of the Bidder. ACSA (the Employer) cannot guarantee that it is complete in all respects. The Bidder is responsible for providing an Activity Schedule which is accurate, complete and in accordance with their proposal. Also, refer to C3 (Service information) for activities that need to be priced. Only items listed in this Activity Schedule may be billed to the Employer. All rates to exclude vat.

ACSA reserves the right to vary all the activities according to the rates given in this contract.

Part 1 - Activity Schedule

Item no.	Activity Description	Frequency	Quantity (per 12 months)	Amount (per single item)	Total (per 12 months)
Preliminary and General					
	Airport permits and parking fees – provisional sum	Once off	1	R1 800.00	R1 800.00
	Cloud BMS Licenses and Servers	Monthly	12	R50 000.00	R50 000.00
	Insurance (ACSA required for this contract)	Monthly	12		
	Inventory Management and Monthly reports	Monthly	12		
				Total Preliminary & General	R
Maintenance & Inspections of Water-Cooled Chillers					
	Compressor and oil pump				
	Daily Inspections	Dailly	365		
	Quarterly Preventative Maintenance	Quarterly	4		
	Control Panel				
	Monthly Preventative Maintenance	Monthly	12		
	Primary pump and motor				
	Daily Inspections	Dailly	365		
	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
				Total Maintenance & Inspections of Water-Cooled Chillers	
Maintenance & Inspections of Air-Cooled Chillers					
	Compressor and oil pump				
	Daily Inspections	Dailly	365		
	Quarterly Preventative Maintenance	Quarterly	4		
	Control Panel				
	Monthly Preventative Maintenance	Monthly	12		
	Primary pump and motor				
	Daily Inspections	Dailly	365		
	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
				Total Maintenance & Inspections of Air-Cooled Chillers	
Maintenance & Inspections of Air Handling Units					
	Fresh Air Intake Damper and Actuator				
	Daily Inspections	Dailly	365		
	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
	Filter pressure differential Indicator and or Transmitter				
	Weekly Inspections	Weekly	52		
	Cooling coil, 2/3 way actuated valves				
	Weekly Inspections	Weekly	52		

	Quarterly Preventative Maintenance	Quarterly	4		
	Fan and drive System				
	Daily Inspections	Dailly	365		
	Weekly Inspections	Weekly	52		
	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
	Control Panel				
	Monthly Preventative Maintenance	Monthly	12		
	Total Maintenance & Inspections of Air Handling Units				
Maintenance & Inspections of Cooling Tower Plant					
	Fan				
	Daily Inspections	Dailly	365		
	Monthly Preventative Maintenance	Monthly	12		
	Tower piping				
	Daily Inspections	Dailly	365		
	Total Maintenance & Inspections of Cooling Tower Plant				
Maintenance & Inspections of Chilled water piping					
7	**Valves**				
8	Monthly Preventative Maintenance	Monthly	12		
	Instruments				
	Daily Inspections	Dailly	365		
	Weekly Inspections	Weekly	52		
	Total Maintenance & Inspections of Chilled water piping				
Maintenance & Inspections of Air duct system					
	Fire Dampers				
	Monthly Preventative Maintenance	Monthly	12		
	CO2 Sensors				
	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
	CO Sensors				
	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
	Indoor controllers and temperature sensors				
	Monthly Preventative Maintenance	Monthly	12		
	Diffusers and disc valves				
	Monthly Preventative Maintenance	Monthly	12		
	Total Maintenance & Inspections of Air duct system				
Maintenance & Inspections of Fan System					
	Fresh Air Fans				
	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
	Toilet/Ablutions Extraction Fans				
	Monthly Preventative Maintenance	Monthly	12		
	Smoke Extraction				
	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
	Total Maintenance & Inspections of Fan System				
Maintenance & Inspections of BMS and Field Instruments					
	BMS				
	Daily Inspections	Dailly	365		

	Monthly Preventative Maintenance	Monthly	12		
	Quarterly Preventative Maintenance	Quarterly	4		
	Total Maintenance & Inspections of BMS				
Maintenance & Inspections of Split units					
	Indoor unit				
	Quarterly Preventative Maintenance	Quarterly	4		
	Outdoor condenser				
	Quarterly Preventative Maintenance	Quarterly	4		
	Total Maintenance & Inspections of Split units				
Maintenance & Inspections of Data Analytics and Reporting					
	Data Analytics and Reporting				
	Monthly Preventative Maintenance	Monthly/Live	12		
	Total Maintenance & Inspections of Data Analytics and Reporting				
Total	**Sub-total A (Total Preliminary & General + Total Maintenance & Inspections)**				**R**

The above activity schedule is minimum work required and the contractor as the subject expect matter on these services they are bidding for **shall fill in any other activity with prices for "other" activities which they deem necessary to achieve the set out comes on availability ,reliability, maintainability, MTTR, MTBF, legislative and all other targets set in this contract. **Should an alternative not be presented, the offer will be deemed as the contractor's optimal proposal for which they will be liable for.***

**All rates for all activities including diagnostic and repair shall include all required tools, software, hardware and consumables (including all applicable specialized tools and software, hardware and consumables) Onus is on the contractor to price correctly).

***It is noted that the required labour resources and skills for this contract is not prescribed in detail. The contractor is fully responsible to ensure that labour resources remain adequate and competent in order to maintain required service levels, system performance levels and according to all applicable laws and regulations. The Tenderer shall also ensure that all required maintenance is catered for as per the Original Equipment Manufacturer in the pricing above.
****Low service damages will be applicable as per the Low **service damages table in this contract**

Labour rates and Mark-up
Any work not included under part 1 shall be deemed additional work or non-scheduled items and will be charged at the following rates:

Activity Schedule – part 2 (Labour rates and Mark-up - Breakdowns)

Any work not included under part 1 shall be deemed additional work or non-scheduled items and will be charged at the following rates:

*All rates to exclude vat. Subject to mutual agreement between ACSA and the Contractor, the number of staff allocated to the contract may be increased/decreased to cater for special needs that may arise from time to time.

Labour rates shall include all personnel insurance, holidays with pay, incentive bonuses.

Note: No labour shall be charged for travel or travelling. Labour time shall be calculated for the time spent on site.

Call out rate must include all required travelling and the **first hour on site**.

i) **LABOUR RATES:** ***(to be filled in)***

Item	Description	Normal hours(R/hour)	After hours (R/hou	
			Saturday	Sunday/public holiday
1	Site Manager			
2	Technician			
3	Technician assistant/ Semi-skilled labour			
4	Other specify:			
5	Other specify:			

Detail requirements regarding staff
The Contractor shall continuously ensure that all staff is suitable, able and competent for the duties required of them. Staff must have experience and applicable competencies as per OEM and all legislations in the maintenance and/or installation HVAC Equipment, HVAC electricals and Control systems. The Contractor shall continuously ensure that all staff is knowledgeable on all equipment relating to the HVAC Electricals and Control systems.

Note the following minimum below:

SITE MANAGER/TECHNICIAN

- The ability to prepare comprehensive reports, sign off all maintenance records and verify that the systems are safe and fit for use on monthly basis
- Should have working experience in the maintenance and/or installation of HVAC Electricals and Control systems or similar works

TECHNICIAN /TECHNICIAN ASSISTANT

- Properly trained and competent in category of work that he is required to perform.
- Should have working experience in the maintenance and/or installation of HVAC Electricals and Control systems or similar works.

Note the following minimum below as per standardised Mechanical resources per infrastructure:

Site Supervisor	• SAQA Acrredited Trade test Electrician/Control and Instrumentation • OHS Training certificate	• Min 3 years experience post trade test qualification • 2 years supervisory Experience • Min 2 years OHS experience	
Control Technicians	SAQA Accredited Control and or Instrumentation Trade test certificate OR N5 In controls and or Instrumentation	Min 3 years experience post trade test qualification and 2 years must be on the maintenance of Control panels, PLCs, SCADA, VSDs, sensors, Controllers and solid understanding of electronic communication protocols	
Lead Electrician	• SAQA Acrredited Trade test (Electrician) • Master Installation Electrician licence		• Registration with the Department of Labour as an Electrical Contractor
Electricians	• SAQA Acrredited Trade test (Electrician)		
assistants	Electrical N2		
Indepedet assurance Control Engineer (For adhoc Quartely system integrity assurance)	• BSC/BENG Electronic Engineering/Mechatronics + PrEng registration; or • BTECH Electronics Engineering/Mechatronics + PrTech		

ii) CALL OUT FEE

NOTE:

a) All rates for all activities including diagnostic and repair shall include all required tools, software, hardware and consumables (including all applicable specialized tools and software, hardware and consumables) Onus is on the contractor to price correctly).

b) All *call out* shall include all applicable travelling, all personnel insurance, holidays with pay, incentive bonuses etc. Labour laws and all applicable laws shall be followed by the contractor.

c) Call outs are not chargeable during hours technician/artisan/assistants or any applicable resource are on site.

d) Call outs are not chargeable during working hours' technician/ assistants are on site (08:00 – 17:00)

e) The contractor will be compensated according to the contractor's repair rate provided in the below table B and it is subject to discussion with the service manager due to proven factors that are beyond the contractor's control (some of the internal and external factors are listed in Annex T).

f) Call-out remuneration is applicable to activities falling out of preventative maintenance activities

that were supposed to be done by the contractor, thus ACSA will not pay for breakdown which are due to preventative maintenance negligence by the contractor.

Table B: Call outs + Labour

Description	Quantity / year	Call out fee	Total/ duration
Call out including first one (1) hour on site and travelling fee (Weekends or Public Holidays or After hours)	60		
***Total Call out Fee**			**R**
Sub-total B (*Total Call out Fee)			**R**

iii) SPARES and MARK -UP

***Spares** will be managed using ACSA's manual inventory management system.
The manual inventory management system will include but not limited to;

- Conducting and submission of monthly and quarterly stock count to the Service Manager by the contractor,
- Keeping up-to-date inventory cards by the contractor,
- Management of spares movement by the contractor,
- Keeping an up-to-date inventory file (purchase order and request, work order, delivery note, stock count records, etc.).
- Ensure safety and security of the storeroom by the contractor as per space given to them.
- The space for spare storage shall be allocated by ACSA to the contractor and can be a shared space as per space availability.
- Management of inventory by the contractor as per ACSA inventory procedure

Spares:

Description	Total (excluding VAT)
Subtotal C- provisional sum for spares	**R 800 000-00**

Mark-up (third party procured items/services)

Bidder to complete

Value of Item or Services	**Mark-up *(Contractor to fill in)*	Spares amount for budget purposes *Z*	Total mark-up values to be budgeted- (Contractor to fill in) = (*Z*x Y)
R0 - R2,000	%	R2 000.00	
R2,001 - R5,000	%	R5 000.00	
R5,001 - R10,000	%	R10 000.00	
R10,001 - R50,000	%	R50 000.00	
		Sub-total D (Third party Mark-up) (Note: Should be part of the form of offer and acceptance)	R

[b]Cost shall be net cost (excluding VAT) of parts delivered to site with all discounts deducted.

**The inserted amount *Z* are for budgeting purposes. The Total mark -up amount in the table is not guaranteed, but the mark-up will be applicable on third party quotations as per requirements of the system. Thus, the contractor will be held accountable to the mark-up filled in this table.*
***The mark-up will be applicable to the total of the third-party quotation not on a single line items in a quotation*.

Spares and sub – contractors work will be charged at cost plus mark-up. VAT shall not form part of mark-up calculations. Cost shall be net cost (excluding VAT) of parts supplied to site with all discounts deducted.

The spares list must be prepared based on tenderers best current spares prices (excl. VAT). The actual costs of spares will be reimbursed on submission of invoices and suppliers supporting documents.

Contract value
Below, the guide that must be used in estimating the contract value. This amount must be reported as the Contract Value in the corresponding schedules. Tenderers are reminded that this amount is for illustrative purposes only and that ACSA will not be under any obligation to expend the full or any portion of this amount. Monthly contract expenditure will be strictly calculated according to the Activity Schedule as provided above.

Maintenance of HVAC Electricals And Controls Systems at O.R. Tambo International for a period of 60 months

Description	Total (excluding VAT)
Sub-total A (Total Preliminary & General + Activity Schedule)	R
Sub-total B (*Call out fee)	R
Sub-total C (Spares provisional sum)	R 800 000.00
Sub-total D (Third party Mark-up)	R
***Total E- Total maintenance cost for 12 months**	**R**

CAPEX BOQ

Item No	Description	Qty	Unit Price	Total Price (Excl. VAT)
1	Supply and installation of a Chilled Water Actuator Valve	213		
2	Supply and Installation of VSDs for AHUs			
2.1	7.5 kW VSD	32		
2.2	3 kW VSD	21		
2.3	4 kW VSD	11		
2.4	5 kW VSD	1		
2.5	5.5 kW VSD	89		
2.6	11 kW VSD	28		
2.7	14 kW VSD	2		
2.8	15 kW VSD	14		
2.9	22 kW VSD	2		
2.10	0.75 kW VSD	1		
2.11	1.5 kW VSD	4		
2.12	11.5 kW VSD	1		
2.13	18.5 kW VSD	1		
2.14	2.2 kW VSD	5		
2.15	4.5 kW VSD	1		
3	Supply and Return temperature sensors	213		
4	Supply and Return Pressure sensors/transmitters	213		
5	Supply and configure the Air Handling unit Controller	213		
				R 11 666 667.00

***This project will be executed in the financial year 2024**

Expenditure over Five-year contract including CPI yearly price adjustments (As per Statistic SA)

Description	Total (excluding VAT)
Sub-Total E: year 1	**R**
Sub-Total F: year 2 (year 1 plus CPI escalation*)	**R**
Sub-Total G: year 3 (year 2 plus CPI escalation*)	**R**
Sub-Total H: year 4 (year 3 plus CPI escalation*)	**R**
Sub-Total I: year 5 (year 4 plus CPI escalation*)	**R**
Sub-Total J: (CAPEX Provisional sum)	**R 11 666 667.00**
5-year estimated contract value Sub-Total K	**R**

*Contract values will be increased/decreased per the current index stipulated in Statistic SA – Consumer Price Indices - all income groups. **6% escalation should be used for illustrative purposes.**
Sub Total I (i.e. Total maintenance cost for the duration of the contract) must be carried to the form of offer and acceptance

The values in this table/contract are not guaranteed, payment will be done as per approved work/activity done and assessments in this contract.

C3 Service Information

DESCRIPTION OF THE WORKS

Employer's objectives

The objective is to provide service of Maintenance of HVAC Electricals And Controls Systems at OR Tambo International Airport in a sustainable manner at the lowest operating and maintenance costs while ensuring compliance to general safety and aviation related legislation. The Contractor will be appointed directly by the Airports Company of South Africa.

The Contractor will provide Maintenance of HVAC Electricals and Control Systems at O.R. Tambo International Airport for a period of 60 months. The specifications and requirements in this document comprise the description of the Works. The Contractor will be appointed directly by the Airports Company of South Africa.

Onus is on the contractor to provide assurance that competent persons would be carrying out all tasks in accordance to all the applicable standards, OEM requirements, procedures, regulations and legislative requirements.

Scope of work (OPEX)

The *Contractor* will provide maintenance Services for HVAC Electricals And Controls Systems infrastructure which is located on the landside and airside of OR Tambo International Airport including the Western Precinct (Aviation Park Building). The specifications and requirements in this document comprise the description of the *Service (Annex I)*.

Scope of work (CAPEX)

1. Supply and installation of the valve actuators for chilled water, Wafer Type Butterfly Valve - Valve actuator AC/DC 24V, 10Nm, mod. the valves must be tested and commission after installation.
2. Supply and installation of VSDs as per table below, which must comply with the following minimum specification:
   Kw Rating: (Refer to table)
   Mains Supply: 380-480V
   Torque: Variable
   Output Voltage:0-100% of Supply Voltage
   Output Frequency:0-132Hz, 0-1000 Hz (Programmable)
   Switching on the output: Unlimited
   Type Enclosure: IP21/NEMA 1
   Sleep Mode for Effective Energy Utilisation
   Cascade Controller
   End of Curve Detection
   Auto Tuning of PI Controllers
   Real Time Clock
   Fire Mode
   High Ambient Temperature rating (50 Degree's Celcius)
   Precise Pulse Reference
   Onboard USB Port
   Early Warning System
3. Supply and installation of supply and return temperature sensors, and supply return pressure transmitters as per table below. The sensors/transmitters must be compatible to the current plant set-up.
   Temperature sensor minimum specification.

   Output 4 … 20 mA Range 0 … 50 °C
   Accuracy ±0.5 °C at 25 °C
   Supply 15 … 30 Vdc

   Pressure transmitter minimum specification.

   Output 3-wire, 0 … 10 Vdc
   Ranges (kPa) 0 … 100
   Accuracy Total of linearity,
   hysteresis and repeatability ±0.5% FS
   Zero-point residual voltage < 50 mV
   Supply 24 Vac/15 … 36 Vdc

4. Supply of the AHUs controller, that will be compatible to the AHUs listed as per table below.
   Interface RS485 half-duplex
   Baud rate: 2400 to 115200 bps
   2x Ethernet with built-in switch
   USB Host Interface
   Power supply 24 V AC/DC Housing
   Approved, self-extinguishing plastic (PC/ABS)
   Cooling: internal air circulation Environment

Operating temperature: -10°C to 50°C
Storage temperature: -40°C to 85°C
Relative humidity: 5% to 95%, no condensation

5. Ingress Protection Rating: IP40 – for indoor installation

International Land-side			
ACSA No.	**AHU No.**	**Rated Power [Kw]**	**Plant Room No.**
0008409	32	7.5	P1
0008422	22	11	P1
0019188	3	7.5	P1
0015593	2	15	P1
00605147	38	5.5	P1
0019056	20B	5.5	P1
0019387	27	5.5	P1
0019047	23	15	P1
0019313	20D	11	P1
0005131	20A	7.5	P1
0006051	4	11	P1
0006446	26	11	P1
0006550	20C	7.5	P1
0006511	5	5.5	P1
0006577	89	5.5	P4
0006082	82	5.5	P4
0005724	81	5.5	P4
0006483	90	5.5	P4
0032556	AHU 4	5.5	West Wing Roof
0032557	AHU 6	5.5	West Wing Roof
0001282		14	West Wing Roof
0001238		14	West Wing Roof
0032558	AHU 5	5.5	West Wing Roof
0001253		15	West Wing Roof
0001204		5.5	West Wing Roof
0002184	21	11	P2
0001202	25	15	P2
0001269	29	11	P2
0001245	24	22	P3
0001251	78	7.5	P3
0000532	30	22	P3
0001264	76	11	P3
0001208	28	7.5	P3

0001239	77	7.5	P3
0002141	121	5.5	P3
0001205	120	5.5	P3
0007526	104	7.5	P3
0007544		5.5	P3
0007550		4.5	P3
0006432	51	5.5	Lower Roof Plantroom 3
0006404	01	5.5	Lower Roof Pantroom 3
0007540		11.5	Lower Roof Pantroom 3
0005140	AHU5	2.2	Mezzanine
0005195	AHU7	2.2	Mezzanine
0007621	AHU28	3	Mezzanine
0007616	AHU29	3	Mezzanine
0005167	AHU27	2.2	Mezzanine
0005135	AHU8	0.75	Mezzanine
0005136	AHU9	2.2	Mezzanine
0005138	AHU10	2.2	Mezzanine
0005149	AHU6	3	Mezzanine
00051553	AHU11	3	Mezzanine
0006653	AHU12	3	Mezzanine
00057610	AHU13	3	Mezzanine
0007617	AHU15	4	Mezzanine
0007614	AHU16	3	Mezzanine
0005228	AHU1	3	Mezzanine
0005103	AHU2	3	Mezzanine
0005157	AHU3	3	Mezzanine
0030054	40/39	7.5	Taddo Plantroom,1st Floor
0030224	34/33	7.5	Taddo Plantroom,1st Floor
00301001	28/27	7.5	Taddo Plantroom,1st Floor
0031123	22/22	7.5	Taddo Plantroom,1st Floor
0031006	15/14	7.5	Taddo Plantroom,1st Floor
0007547	AHU22	5.5	International Deptures
0007564	AHU23	5.5	International Deptures
0007525	AHU21	11	International Deptures

0007524		7.5	International Deptures

International Air-side			
ACSA No.	**AHU No.**	**Rated Power [Kw]**	**Plant Room No.**
0008409	4	18.5	P1
0008422	1	4	P1
0019188	1	5.5	P1
0015593	1		Boarding Gate A-1
00605147	1	1.5	Boarding Gate 2
0019056	97	5.5	Boarding Gate 4
0019387	100	5.5	Boarding Gate 4
0019047	98	5.5	Boarding Gate 5
0019313	101	5.5	Boarding Gate 5
0005131	39	5.5	Surface Maintenance
0006051	1,2	5.5	Surface Maintenance
0006446	South Wing	4	Slow Lounge
0006550	Centre Point	4	Slow Lounge
0006511	North Wing	3	Slow Lounge
0006577	1,01	7.5	P1
0006082	1,02	5.5	P2
0005724	108	4	Arrival Carousel
0006483	20	4	Arrival Carousel
0006065	1	3	P8
0006078	2	5	P8
0006486	3	7.5	P9
0006035	2	15	P10
0007663	24	4	P7
0006528	25	4	P7
0007581	5.12	7.5	Roof
0007590	5.8	15	Roof
0007516	Roof	7.5	Roof
0005132	17	4	P8
0006588	18	4	P8
0006510	19	3	P8
0006596	21	3	P8
0006530	22	1.5	P8
0007666	23	1.5	P8
0005131	1	3	P6

Domestic

ACSA No.	AHU No.	Rated Power [Kw]	Plant Room No.
0001270	1	3	ACSA
0001288	2	3	ACSA
0001284	3	3	ACSA
0001271	4	3	ACSA
0001272	D8	3	ACSA
0008611	TEF2	5.5	Grid Line 3
0018596	TEF	1.5	Grid Line 3
0008621	FSV2	5.5	Grid Line 3
0008637	FSV4	5.5	Grid Line 3
0008662	FSV6	5.5	Grid Line 3
0008682	F2/A3	5.5	Grid Line 3
0008659		5.5	Grid Line 5
0008607	FSV5	5.5	Grid Line 5
0008650	FSV3	5.5	Grid Line 5
0008694	FSV1	5.5	Grid Line 5
0008646	F1/ASTE	5.5	Grid Line 5
0008645	M2/3	5.5	Main Plantroom
0008665	M1/2	5.5	Main Plantroom
0008699	M2/4	5.5	Main Plantroom
0008660	M3/1	5.5	Main Plantroom
0008624	L2/3	5.5	Main Plantroom
0008686	L3/2	5.5	Main Plantroom
0008601	L5/1	5.5	Main Plantroom
0008656	M5/2	5.5	Main Plantroom
0008612	M6/1	5.5	Main Plantroom
0008621	M7/4	5.5	Main Plantroom
0008657	M7/3	5.5	Main Plantroom
0008616	M8/1	5.5	Main Plantroom
0008691	M9/4	5.5	Main Plantroom
0008642	M9/2	5.5	Main Plantroom

0008693	M10/3	5.5	Main Plantroom
0008644	M10/4	5.5	Main Plantroom
0008635	M11/1.2	5.5	Main Plantroom
0008658	L10/4	5.5	Main Plantroom
0008623	L10/2	5.5	Main Plantroom
0008622	L9/3	5.5	Main Plantroom
0008634	L8/3	5.5	Main Plantroom
0008617	L7/2	5.5	Main Plantroom

Central Terminal Building			
ACSA No.	**AHU No.**	**Rated Power [Kw]**	**Plant Room No.**
0006738	J3/0	7.5	South West Plantroom
0006718	K5/A3	15	South West Plantroom
0006780	K5/3	5.5	South West Plantroom
0006721	K7/W1	15	South West Plantroom
0006778	K5/A1	7.5	South West Plantroom
0006736	K7/W1	15	South West Plantroom
0006723	L5/3	5.5	South West Plantroom
0006734	LM5/W4	11	South West Plantroom
0006727	L5/0	5.5	South West Plantroom
0006707	M5/3	5.5	South West Plantroom
0006725	M5/2	7.5	South West Plantroom
0006743	NP5/W4	11	South West Plantroom
0006731	N5/3	5.5	South West Plantroom
0006715	N5/0	5.5	South West Plantroom
0006748	NP5/RL	7.5	South West Plantroom
0006701	P5/3	5.5	South West Plantroom
0006719	P5/2	7.5	South West Plantroom
0006710	Q5/3	5.5	South West Plantroom
0006703	QR5W4	11	South West Plantroom
0006733	Q5/O	11	South West Plantroom
0006739	R6/w1	15	South West Plantroom
0006735	R5/2	7.5	South West Plantroom
0006749	R5/3	5.5	South West Plantroom
0005346	SEFR6	11	South West Plantroom
0007754	A5/W1	11	North West Plantroom
0007755	B5/0	5.5	North West Plantroom
0007751	B5/2	11	North West Plantroom
0007752	BC5/W4	7.5	North West Plantroom
0007738	C5/3	5.5	North West Plantroom
0007750	C5/0/1	11	North West Plantroom
0007749	D5/3	5.5	North West Plantroom

0007753	D5/0/1	7.5	North West Plantroom
0007748	CD5/W4	7.5	North West Plantroom
0007715	E5/3	5.5	North West Plantroom
0007702	EF5/W4	7.5	North West Plantroom
0007774	F7/W1	11	North West Plantroom
0007799	E5/1	11	North West Plantroom
0007800	F5/A1	7.5	North West Plantroom
0007778	F7/W1-4	15	North West Plantroom
0007777	F5/3	5.5	North West Plantroom
0007727	G3/0	15	North West Plantroom
0007735	F5 A/4	15	North West Plantroom
0008893	D 3,7	1800	North West Plantroom
0008859	DB 3,71	1800	North West Plantroom
0007704	DB 2,7	1800	North West Plantroom
0007737	PA Room1	1800	North West Plantroom
0007798	IMCS C11	1800	North West Plantroom
0007724	A3/3/4	11	North East Plantroom
0007789	B3/3	5.5	North East Plantroom
0007703	B3/0/1	7.5	North East Plantroom
0007747	C3/3	5.5	North East Plantroom
0007713	C3/1	4	North East Plantroom
0007746	D3/3	5.5	North East Plantroom
0007736	D3/0/1	11	North East Plantroom
0007776	E3/3	5.5	North East Plantroom
0007757	E3/0/1	11	North East Plantroom
0007706	E3/4	11	North East Plantroom
0007734	F3/3	5.5	North East Plantroom
0007762	F3/2	15	North East Plantroom
0007725	G3/3	5.5	North East Plantroom
0007728	G3/4	11	North East Plantroom
0006756	J3/3	5.5	South East Plantroom
0006753	J3/4	11	South East Plantroom
0006706	K3/3	5.5	South East Plantroom
0006709	K3/2	11	South East Plantroom
0006740	L3/3	5.5	South East Plantroom
0006704	L3/0	11	South East Plantroom
0006720	M3/3	5.5	South East Plantroom
0006755	M3/2	5.5	South East Plantroom
0006751	N3/3	5.5	South East Plantroom
0006752	N3/4	11	South East Plantroom
0006742	N3/0	3	South East Plantroom
0006730	P3/3	5.5	South East Plantroom
0006747	P3/2	7.5	South East Plantroom
0006746	Q3/3	5.5	South East Plantroom

0006728	Q3/0	11	South East Plantroom
0006745	Q3/4	7.5	South East Plantroom
0006726	R3/3	5.5	South East Plantroom

Equipment Life Span

- The life span of the HVAC Equipment, HVAC electricals and Control systems is 5 years (refer to **Annex C** for the list and life span)
- The list of equipment commissioning dates has been provided on **Annex B.**

OEM Requirements

The O.E.M recommended the below preventive maintenance for the HVAC Electricals and Control systems:

- Quarterly maintenance
- Bi- annual maintenance
- Annual Maintenance

ACSA: O.R Tambo international Airport has since implemented daily inspections for the HVAC Electricals and Control systems.

Condition of the plant

The maintenance history of the equipment has been logged with ACSA Integrated maintenance centre.

- The list breakdowns and faults experienced and the estimated time for repair on the HVAC Electricals and Control systems are listed on **Annexure H.**
- The preventative maintenance previously performed on the HVAC Electricals and Control systems are listed on **Annex F**, for the actual work orders with tasks, ACSA Integrated maintenance centre can be contacted to issue actual.
- A sample of root cause analysis on the HVAC Electricals and Control systems has been attached on **Annex G**. Also, the root cause analysis must be performed, and the Root cause analysis form completed by the contractor and handed over to ACSA service manager after each breakdown.

Site Information

- The HVAC Electricals And Controls Systems are located at on the airside and landside at O. R. Tambo International Airport (refer to Annexure A for a full list of equipment).
- The airport layout and site information has been provided on **Annex D**.

Minimum work requirements and Legislations:

Maintenance of HVAC Electricals And Controls Systems shall as minimum conform to the following Procedure and or other legislative references (Gazetted Standards or OHS Regulations):

- ACSA maintenance procedure for HVAC Electricals and Control systems - as provided in **Annex N.**
- The preventative maintenance previously performed on the HVAC Electricals and Control systems are listed on **Annex F**, for the actual work orders, ACSA Integrated maintenance centre can be

Note: above is the list of minimum regulations and legislative requirements that the contractor needs to adhere to as mandatory requirements (**work should be carried out by competent people as prescribed in the law and shall be auditable by the employer at any given time**)

Access to site

- Airside training and permit should be completed and issued before accessing airside and commencement of work.
- AVOP training and permit should be completed and issued before the commencement of work for personnel driving required to drive on airside.
- Permission must be obtained from ACSA operations and IMC before an equipment can handed over to the contractor for works and such arrangements must be done prior and timeously.

Site Restrictions

- Airside training and permit should be completed and issued before accessing airside and commencement of work.

- AVOP training and permit should be completed and issued before the commencement of work for personnel driving required to drive on airside
- The safety file should be completed and approved by the safety department before commencement of work. The safety file is a living document and must be continuously updated with all requirement as specified by law. Also, will be auditable from time to time.
- Personal Protective Equipment should be issued before the commencement of work.

Risk
The are some of the risks identified but not limited to the below and to **Annex E** list.

Current Guarantees and warrantees to be maintained:
- Annex W - N/A

Extent of the works
The Contractor will be fully responsible for meeting all requirements in this document regarding the Works.

For each piece of equipment, all work will be carried out to standards as required by the Original Equipment Manufacturer (OEM) as well as any applicable governing law and/or regulations. Where OEM standards differ from those required by this document the more stringent requirement shall apply. The Contractor will be fully responsible for obtaining (and keeping up to date with) said requirements.

Where, such a need is mutually agreed between the Contractor and the Employer, the Employer shall put in place a “Hotline” (i.e. 24-hour telephonic support by product specialist) agreement with the relevant OEM. In this event the Contractor shall be responsible that such Hotline services are always operational and available, but all costs in this regard shall be carried by the Employer. The Contractor shall NOT add any mark-up to any Hotline related expenses. A “Hotline” agreement shall typically ensure that problems relating to system controls are promptly rectified. It is intended that Hotline agreements will be in place with OEMs for PLC related controls and computerised control systems.

The Contractor will be responsible for providing staff which are sufficiently skilled and qualified for successful execution of the works. The Contractor shall comply with the Minimum Staffing Schedule always – as stipulated in the Annexes. This may be amended by mutual arrangement between the Employer and the Contractor from time to time.

The Contractor shall always remain responsible to ensure that the on-site staff compliment and maintenance regime is sufficient to maintain the service levels and system performance indicators as stipulated in the Annexes. Should the Contractor not be able to maintain adequate system performance indicators due to constraints caused by the Employer, it shall be timeously reported, in writing, to the Contract Manager. Refer to the Annexes for the required system performance indicators.

The Contractor will ensure that his/her staff compliment is of a sufficient quantity to allow for uninterrupted supply of labour in the event of his/her staff taking sick leave, paid leave and will allow for all staff related eventualities.

The Contractor shall continuously ensure that all staff is suitable, able and competent for the duties required of them. The Contractor shall continuously ensure that all staff is knowledgeable and dependable in HVAC Electricals and Control systems maintenance activities/procedures in the area. The Contractor shall further ensure that any staff member reasonably suspected of partaking in criminal activities is immediately removed from site and his permit returned to and/or cancelled at the ACSA Permit Office.

All work shall be performed within the required Response Times – as stipulated in the Annexes. Any breakdown impacting on operations shall be attended-to until restored to good reliable condition. No breakdown may be left unattended or incomplete for the next day or shift. All repair work shall carry a defect free be guaranteed for a period of 3 months after completion of work.

All work shall be charged according to the Activity Schedule. However, no labour shall be charged for any non-scheduled work, repair work or other work when carried out by a scheduled maintenance shift.

The Contractor will be responsible for keeping spares levels up to a sufficient quantity and standard as to comply with the requirements of this contract and will charge the Employer accordingly. All spares will be charged according to the Activity Schedule. The Contractor shall arrange for the spares room. The Contractor shall keep the spares room in a neat and clean state and an updated spares list will always be available on-site. Spares will be neatly arranged and easily locatable via an appropriate index on the spares list. Wherever practicable, a notice will be placed on the rack, next to the spare part, as to where the part is used in the installation. A resource will be dedicated to ensuring that spares are effectively managed and scrapped parts and waste removed from site. The space for spare storage shall be allocated by ACSA to the contractor and can be a shared space as per space availability.

The Contractor will be responsible for holding all tools and/or special equipment that might be required for the execution of the works, either on site or on their premises in order to comply with the Response Time requirements of this contract. Any exclusion to the above should be clearly communicated in the returnable schedules when submitting the tender.

The Contractor shall ensure that, unless a special arrangement is made with the Service Manager, all senior staff members and on-site support staff is always immediately reachable via cell phone.

The Contractor shall ensure that all maintenance staff are issued with uniforms that will comply with a minimum requirement as agreed with the Service Manager from time to time. Current airport requirements are safety shoes, track suit and a uniquely numbered reflective jacket (for easy identification via CCTV).

Location of the works
The Works are located at O. R. Tambo International Airport including Western Precinct Building at various locations – mostly in controlled areas. It is crucial for the Contractor to note that O. R. Tambo International Airport is a National Key Point and governed as such.

PROCUREMENT

Preferential procurement procedures
Requirements
The Contractor will respect OEM warrantees to the Employer always when procuring spare parts, products or 3rd party services. It will be the Contractor's sole responsibility to ensure that OEM warranty requirements are adhered to always.

Where Contractors use or quote on spare parts of a lower quality than recommended by the OEM, or parts not recommended by the OEM, this shall be clearly indicated to the Service Manager on the quotation. This also implies that the Contractor must build relationships with the various key OEM's.

The Contractor must adhere to all airport requirements regarding fire, health and safety when procuring replacement conveyor belts and/or other equipment or spares.

No casual labour (i.e. "off the street" labour) may be employed by the Contractor unless pre-arranged with the Employer. Whenever this is required, the Contractor shall come to a suitable arrangement with the Employer regarding sourcing and screening of such individuals.

Subcontracting
No part of this Contract may be subcontracted unless with written approval from the Employer. the Employer shall be under no obligation to grant such approval. Should any part of this Contract be subcontracted, the Contractor will be responsible for all Works (or failure to affect the Works) as if it was done so by the Contractor.

MANAGEMENT

Management of the works
Particular / generic specifications
All work shall conform to all relevant SANS standards, OHS ACT regulations and all other legislation that might be relevant to this Contract and the execution thereof.

All work shall be carried out in accordance with prevailing industry norms and best practice and will always comply with OEM requirements.

Planning and programming
All maintenance work shall be scheduled, and a roster presented to the Service Manager at the end of the preceding month. Work shall be scheduled in a manner as not to interfere with any normal airport operations.

Normal airport operational hours shall be **from 04:00 to 24:00** for every day of the year.

As a **minimum** requirement, the Contractor shall roster **scheduled** preventative maintenance activities.

Maintenance teams will attend to scheduled preventative maintenance, non-scheduled maintenance and breakdown maintenance. The Contractor must ensure that no scheduled maintenance work is carried over to the following week.

All Preventative Maintenance shall be scheduled, at least, to the requirements of the annexures (The Contractor must ensure that sufficient allowances for all these items are made with his/her pricing in the Activity Schedule.)

Methods and procedures
The Contractor must accept and respect the fact that the Airport is continuously undergoing construction and improvement and that a variety of stakeholders are involved in the Employer's business. Therefore, within reason and with prior arrangement with the Contractor, the Employer might require the following from time to time:

- Assisting with emergency repairs on
- Assisting with airport operations Re-scheduling of work to accommodate other contractors
- Allowing access and providing assistance to OEM suppliers to correct defects on equipment and/or systems
- Checking on other contractors in order to reduce risk to HVAC Electricals and Control systems
- Pointing out services to consultants or other contractors
- Providing access to other contractors
- Attending co-ordination and planning meetings
- Removing rubble and/or equipment from site
- Training of ACSA operators and/or technicians
- Training of check-in of HVAC Electricals and Control systems staff
- Providing of system data and/or statistics to ACSA
- Recommending improvements on maintenance procedures
- Recommending improvements on operational procedures
- Co-operating with ACSA Security relating to security issues
- Safe / legal disposal of used and irreparable spares

The Service Manager may instruct operational and works procedures to the Contractor as might be required from time to time. The Contractor will instruct his/her staff accordingly and implement measures to ensure that these procedures are strictly adhered to.

Quality plans and control

All work must be executed in accordance with prevailing industry norms and standards relating to quality. In this regard, the Contractor will be expected to draft quality plans for the Service Manager from time to time. Emphasis must be on improving system reliability and on ensuring that rostered maintenance work is indeed performed as and when required.

Environment
The Contractor will keep noise and dust levels to a minimum. At no time, shall his/her work result in nuisance, interference or danger to the public or any other person working at the Airport.

At no time, shall the Contractor:
- allow any pollutive or toxic substance to be released into the air or storm water systems
- interfere with, or put at risk, the functionality of any system or service
- cause a fire or safety hazard

Format of communications
Work instructions, daily check sheets, monthly maintenance reports, inventory reports, breakdown reports, exception reports, etc. will all be in a format as agreed with the Service Manager.

Key personnel
A schedule of key personnel to this Contract (as per the Schedules) will be provided to the Service Manager at commencement of this Contract. This will, as a minimum, include all persons from technician level to management level. For the full duration of this Contract, none of these persons will be replaced by a person of lesser ability or qualification. All on-site staff leaves shall be reported and agreed with the Service Manager.

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

Electronic payments
The Contractor should arrange with the Employer's finance department for making all payments electronically.

Daily records
The Contractor shall keep accurate daily records of staff attendance, maintenance work, safety inspections and exception reports. Records shall be available for scrutiny by the Service Manager at any time. All records shall be in a format as agreed with the Service Manager.

Monthly reports
When invoicing, the Contractor shall ensure that all required reports for the corresponding month are attached to the monthly invoice. This will include monthly reports on but not limited to:

1. system availability (averaged per week)
2. maintenance work (including % of scheduled maintenance work completed)
3. daily checks performed
4. maintenance plan for the next month
5. the latest spares inventory
6. Assets register up to date including equipment data
7. Root cause analysis records
8. Safety/Environmental or legislative issues and compliance
9. Outstanding maintenance issues

The Contractor shall keep copies of all reports and records for at least 3 years. All reports shall be in a format as agreed with the Service Manager from time to time.

Permits
The Contractor shall not be compensated for costs relating to the Employer's required permits, or for labour/time spent in obtaining it. An allowance must be made in the Activity Schedule in this regard.

The Contractor must ensure that he/she is, always, familiar with the Employer's safety and security requirements relating to permits for no work to be delayed as a result thereof. This will include the permit application process.

Note that (within reason) the Contractor will have no claim against the Employer if a permit request is refused.

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 work	ACSA Safety

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.

Proof of compliance with the law
The Service Manager may at any time request from the Contractor reasonable proof that the Contractor is in compliance with a law or regulation.

Health and safety
Health and safety requirements and procedures
The Service Manager shall be entitled to fine the Contractor low service damages for each non-conformance to Health and Safety matters. This shall not transfer any of the Contractor's responsibilities in this regard to the Employer by any means.

The Contractor shall be fully responsible for compliance to the Occupational Health and Safety Act for all persons, equipment and installations relating to this Contract. The Contractor is expected to sign the undertaking in this regard as attached in the annexes.

It shall be the Contractor's responsibility to ensure that all relevant labour and safety legislation is adhered to in rostering staff.

All persons on company premises shall obey all health and safety rules, procedures and practices. NO SMOKING signs and the prohibition of the carrying of smoking materials in designated areas shall always be obeyed. A copy of the Safety Rules booklet is available on request from the ACSA Safety Department.

All the applicable requirements of the Occupational Health and Safety Act (1993) and Regulations and any amendments thereto, shall be met. Where the OHS Act prescribes certification of competency of persons performing certain tasks, proof of such certification shall be provided to the Service Manager.

The Contractor's Workmen's Compensation fees must be up to date. A copy of the Contractor's WCA registration shall be produced on request.

The following areas in the company are declared as “HOT WORKS PERMIT” areas:

All airside areas

All basement areas

All areas accessible to the public

All enclosed areas

The terminal building

Any process in the above-mentioned areas involving open flames, sparks, or heat shall be authorised by the issue of a permit to work - obtainable from the ACSA Safety department. Any work done under the protection of a permit to work shall be in strict compliance with every prescription regarding the permit.

Safety equipment shall be used where applicable (e.g. safety, goggles, boots, harness, etc.) The Contractor, at his/her own expense shall provide such equipment, for his/her employees. The Contractor shall apply the necessary discipline and control to ensure compliance by his workers.

All Contractors must ensure that his/her employees are familiar with the existing emergency procedures and must co-operate in any drills or exercises, which might be held. Emergency / fire equipment and extinguishers shall not be obstructed at any time

No person shall perform an unsafe / unhygienic act or operation whilst on Company premises.

No unsafe/dangerous equipment or tools may be brought onto or used on Company premises. The Company reserves the right to inspect all equipment/tools at any time and to prevent/prohibit their use, without any penalty to the Company and without affecting the terms of the Contract in any way.

The Company reserves the right to act in any way to ensure the safety/security of any persons, equipment or goods on its premises and will not be liable for any costs or loss evoked by the action. This includes the right to search all vehicles and persons entering, leaving or on the premises and to inspect any parcel, package, handbag and pockets. Persons who are not willing to permit such searches may not bring any such items or vehicles onto the premises.

The Contractor shall maintain good housekeeping standards in the area where he is working for the duration of the contract.

At no time, must the Contractor interfere with, or put at risk, the functionality of any Sprinklers and/or fire prevention system. Care must also be taken to prevent fire hazards.

The Contractor is required to issue all staff with standard uniforms. This shall as a minimum include steel-tipped safety shoes/boots, overalls (clearly marked with Contractor’s company logo) and numbered reflective jackets (also clearly marked with Contractor’s company logo, the team members unique personnel number in a font size to be instructed by the Service Manager). All costs relating to uniforms shall be for the Contractor’s account.

Cell phones and two-way radios
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.

The Contractor will **not** be allowed to use two-way radios at the Airport unless these radios are of the type, model and frequency range as approved by the ACSA IT department.

Protection of the public
The Contractor shall take special care in order not to harm or endanger the public in any way. Work shall be sufficiently hoarded and guarded to safeguard children and the general public from injury relating to machinery, work or other.

Barricades and lighting
Where hoarding, barricades or lighting is required in the execution of the Works, the Contractor shall provide same at his/her own expense. Hoarding, barricades and lighting shall comply with industry accepted norms and standards and may not be used for purposes of advertising or any other purpose than safeguarding the Works.

Enterprise and Supplier Development Initiatives

It is a requirement of this project that the successful tenderer enters into a contract (either through partnership, joint ventures or sub-contractors) with Targeted Enterprise(s) as defined in the Contract Data to perform a minimum of Thirty percent (30%) of the tendered contract value.

Tenderers must state transformation deliverables that are both achievable and measurable as the successful tenderer will be required to issue comprehensive monthly reports in response to this tender requirement. The monthly report will be assessed by ACSA"s Internal Transformation Committee, which is accountable for implementation of ACSA"s Transformation initiatives.

C3.2.1 Definition of a Targeted Enterprise

A registered built environment professional firm contracted (either by Joint Venture, partnership or sub-contracting) by the tenderer to perform a specified percentage of work stated in the Contract Data under the guidance of the tenderer and which complies with the following:

a) does not share equity holding with the tenderer; and
b) is registered in terms of the Company's Act, 2008 (Act No. 71 of 2008) or Close Corporation Act, 1984 (Act No. 69 of 1984); and
c) is registered with the South African Revenue Service; and
d) is at least an Exempted Micro Enterprise (EME) with a B-BBEE Status of "Level One "Contributor", as defined in the Amended Codes of Good Practice for measuring Broad-based Black Economic Empowerment (published in Government Gazette No. 36928 on 11 October 2013) or?
e) is at least a Qualifying Small Enterprise (QSE) with a B-BBEE Status of "Level One? Contributor", as defined in the Amended Codes of Good Practice for measuring Broad-based Black Economic Empowerment (published in Government Gazette No.36928 on 11 October 2013).
f) has entered into a written relationship agreement of co-operation and assistance with the tenderer for the duration of the contract.

C3.2.2 Participation of Targeted Enterprise(s)

The involvement of Targeted Enterprise(s) in the project management, manufacturing and testing is a mechanism to broaden the economic share of the national spend on engineering services and a means to hasten and improve the transfer of technical skills.

The percentage specified for Targeted Enterprise shall be applicable to the management, manufacturing and testing aspects of the project.

C3.2.3 Transformation monthly reporting

The tenderer shall report monthly and provide the following documents:

- The skill development or transferred during the month in question and
- The progress of the targeted enterprises skill development.
- Proof of payment to the target enterprise

C3.2.4 Sanctions for non-compliance with the transformation proposal

In the event that the tenderer does not meet the specified target of work value to the Targeted Enterprise, ACSA shall levy a penalty. The penalty payable is 50% of the value by which the cumulative value of the payments to the Targeted Enterprise fails to meet the specified percentage. The Targeted Enterprise(s) shall not be allowed to sub-contract any work that forms part of the specified participation percentage.

ANNEXES to C3 (Service information)

Title	Annex number	Applicable or N/A
Schedule of Equipment	Annex A	Applicable
Site information	Annex B	Applicable
Risk assessment	Annex C	Applicable
Previous completed PMs	Annex D	Applicable
Root cause analysis	Annex E	Applicable
Estimated times for breakdowns/faults	Annex F	Applicable
Key Performance Indicators	Annex G	Applicable
OHS Act Appointment by Contractor	Annex H	Applicable
Minimum Maintenance Programme	Annex I	Applicable
Environmental Terms and Conditions	Annex J	Applicable
Maintenance of HVAC electricals and Control systems Spares List	Annex K	Applicable
ACSA maintenance procedure for HVAC Electricals and Control systems	Annex L	Applicable
IMCC procedure	Annex M	Applicable
Internal and external factors outside the contractor's control	Annex N	Applicable
ACSA Mechanical Standardised Minimum: legal requirements and minimum competency requirements	Annex O	Applicable
ACSA Inventory management procedure	Annex P	Applicable

AIRPORTS COMPANY SOUTH AFRICA

ANNEX A

SCHEDULE OF EQUIPMENT

The tender must not that this is a close estimate of the number of equipment and systems on site.

Equipment

No	Description	Cargo	CTB	Domestic	International
1	Chillers	1		5	7
2	Cooling towers	1		4	7
3	Air handlers and Dampers	375	74	131	237
4	Pumps	7		15	35
5	BMS		1	1	2
6	Split units & Package Units & VRV	174	81	10	179
7	Fans, Smoke and Toilets Extraction Fans	1	105	88	183
8	Total	559	261	254	650
7	Energy management system		1		

Note: Split units, package units, VRV units and other are part of the scope but are not included in this schedule of equipment because they form a small percentage of the scope.

	Model Number	Cooling capacity KW	Original reference number
1	RTHB	867	Agent Building (83C432)
2	RTHC - Domtex	1493.8Kw	Domtex (83G122)
3	RTHC - Domtex	1493.8Kw	Domtex (83G122)
4	RTHC - Domtex	1493.8Kw	Domtex (83G122)
5	RTHC - Domtex	1493.8Kw	Domtex (83G122)
6	RTAD - Data	258.4	Domtex (83G122)
7	CVGF 800 - Chiller 1 – KB2	2999.85	OR Tambo Basement 83G424
8	CVGF 800 - Chiller 2 – KB2	2999.85	OR Tambo Basement 83G424
10	CVGF 800 - Chiller 3 – KB2	2999.85	OR Tambo Basement 83G424
11	CVGF 800 - Chiller 4 – KB2	2999.85	OR Tambo Basement 83G424
12	RTHD - Chiller 5 – KB2	1214.08	OR Tambo Plantroom (83G424
13	CVGF 800 - Chiller 6 – KB2	2999.85	OR Tambo Plantroom (83G424)
14	CVGF 800 - Chiller 7 – KB2	2999.85	Or Tambo Plantroom (83G424)

ACSA - Equipment No: (Cooling Tower)	Model no:		
1	AT 112-814	Evapco	International
2	AT 112-814	Evapco	International
3	AT 112-814	Evapco	International

ACSA - Equipment No: (Cooling Tower)	Model no:		
4	AT 112-814	Evapco	International
5	AT 19-311	Evapco	
6	AT 112-814	Evapco	International
7	AT 112-814	Evapco	International
8	ATW 102K-4K	Evapco	Agent Building
9	LRT8-122	Evapco	Domestic
10	LRT8-122	Evapco	Domestic
11	LRT8-122	Evapco	Domestic
12	LRT8-122	Evapco	Domestic

Western Precinct

No	Description	Quantity
1	Air-cooled Chillers	3
2	Water-cooled Chillers	2
3	Cooling towers	2
4	Pumps	17
5	Fans	13
6	Fan Coil Units	108
7	Split Units	18
8	Air Handling Units	10
9	CO & CO2 Sensors/Detectors	93
10	BMS Control Panels	28
11	Electrical Motor Control Panels	46

ANNEX B

Site Information

Description
The *services* are situated on the airside of O. R. Tambo International Airport.

General Site Conditions

Temperature (Min - Max)	6ºC to 40ºC
Relative Humidity	15% to 60%
Wind	28m/s
Height above Sea Level	1,680 m
Slope (Existing/Modified)	Level
Seismic	N/A


O R Tambo Airport Rd
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AIRPORTS COMPANY SOUTH AFRICA

ANNEX C

Risk assessment

OHS Risks

Available from the Service manager on request

Administrative Risks

Risk Number	Risk Description and mitigation measures
1	Safety File not being 100% compliant or safety/environmental infringement could lead to the contractor being taken off site
2	Expired COIDA letter; contractor will be taken off site.
3	Insufficient resources on site to perform the work required roster; contractor will be penalized accordingly
4	Failure to annually present a compliant Tax Clearance Certificate which is considered a material breach of the conditions of this Contract
5	Not meeting set availability target; contractor will be penalized and failing rehabilitation contract will be terminated as specified in this contract
6	Not meeting set MTTR target; contractor will be penalized and failing rehabilitation contract will be terminated as specified in this contract
7	Spares list not being updated could lead to extended equipment down times; contractor will be penalized and failing rehabilitation contract will be terminated as specified in this contract
8	Root cause analysis not performed could lead to repeated equipment failures; contractor will be Low service damages will be imposed and failing rehabilitation contract will be terminated as specified in this contract
10	Failure to annually present compliant BEE certificate which is considered a material breach of the conditions of this Contract
11	Contract value being expended before contract expiry date; contract will be terminated
12	Contractor not giving documentation for work assessments and payment on time; Contractor will not be payed on time
13	Updated and compliant safety file regarding Covid 19 PPE and risk assessment, as per OHS and regulation.
14	Any change in the law that is reinforced as per clause X2(Changes in the law)
15	Department of labour as an Electrical Contractor

ANNEX D

Previously completed PMs

Available upon request from IMCS

ANNEX E

Root cause analysis

***Root cause analysis must be done for each failure and the form is per below must be handed over after closing* any works.**

ORTIA ME Root Cause Analysis Sheet

Function failure:(Which function was no longer execute) The bridge could not drive due to torn wheel.	Alpha 12passenger loading bridge was not moving due to wheel puncher	**Date:** 2 Decemebr 18	**Time of incident:**	**Reported by/Operator**	MCS. Tsholofelo
Asset class: AIRBRIDGE - APRON DRIVE **Dept:** Mech	**Asset Description:** PLB A12	**Total downtime** 26 hours	**Warning signs before the breakdown:**	NO WARNING SIGNS	
Repaired by: G.Opperman	**Repair time:** 3 hrs	**Waiting time:** 22 .23hrs			

Description f fault finding and repair:(what was done to fix the machine/equipment and start operations)
The wheel rubber teared off.

Sketch the working principles and the failure mode:(Event which caused functional failure) Include pictures of the brackets.?? In position

Part/s/component/s replaced:	**Work order/Work Request**	**Failure mode:(Event which caused functional failure)**
1. Bearings 2.Wheel	MO 542949	Torn wheel rubber

Why1 Was rubber torn	**Why2** Shear force	**Why3** out of life expetancy/age was reached	**Why4** Replacemet cycle/not replaced in cycl	**Why5**	**Counter measures:**	**Category**	**Who**	**Date complete**
1.Shear forces	1. Driven over an object 2. Driven with high speed	1. Rushing to dock the A/C	1. Operator not at the loading bridge in time.		1. Operation's procedure to be inforced 2. wheel inpections to be included in thepreventative maintenence	Man Machine Method Material Environment		

ORTIA ME Root Cause Analysis Sheet

Function failure:(Which function was no longer execute) Passenger loading bridge cannot extend or retract.	Alpha 12passenger loading bridge was not moving due to wheel puncher	**Date:** Monday, 20 May 2019	**Time of incident:** 09:00	**Reported by/Operator**	IMC / Leonora
Asset class: AIRBRIDGE - APRON DRIVE **Dept:** Mech	**Asset Description:** PLB A1RB	**Total downtime** 11Days	**Warning signs before the breakdown:**	PLB struggles to move and is shaking forward and backwards.	
Repaired by: M.Fourie	**Repair time:** 14 hrs	**Waiting time:** 30Days			

Description f fault finding and repair:(what was done to fix the machine/equipment and start operations)
Steel wire rope was replaced, set new limits and guide bearings was adjusted.

Sketch the working principles and the failure mode:(Event which caused functional failure)

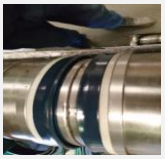
Part/s/component/s replaced:	**Work order/Work Request**	**Failure mode:(Event which caused functional failure)**
1. Steel wire rope 2. Bearing Roller adjustment	WR 408955	Steel wire rope damaged

Why1 Was the steel wire rope damaged	**Why2** Cable Tension	**Why3** Out of life expetancy/age was reached	**Why4** Replacemet cycle/not replaced in cycle	**Why5**	**Counter measures:**	**Category**	**Who**	**Date complete**
Tension of cable incorrect	Tension of bearings between tunnels	Visual Inspection to be done prior to use	Bearing roller adjustments		1. Operation's procedure to be inforced 2. Steel wire rope tension to be included in inspections 3.Keep spare steel wire rope in stock	Man Machine Method Material Environment		

ORTIA ME Root Cause Analysis Sheet

Function failure:(Which function was no longer execute) The handrail was not turning/moving	Bridge had an auto level failure, Cylinder were leaking internally.	**Date:** 09/062019	**Time of incident:** 16h30	**Reported by/Operator**	MC
Asset class: AIRBRIDGE - APRON DRIVE **Dept:** Mech	**Asset Description:** PLB A13	**Total downtime** 2496 hours	**Warning signs before the breakdown:**	Auto level failure	
Repaired by: G.Opperman	**Repair time:** complete 08-10-2019	**Waiting time:** 2150 hrs			

Sketch the working principles and the failure mode:(Event which caused functional failure)
Include pictures of the brackets ?? in position



Description f fault finding and repair:(what was done to fix the machine/equipment and start operations)
Hyd cylinders were leaking internally.

Part/s/component/s replaced:	**Work order/Work Request**	**Failure mode:(Event which caused functional failure)**
Hyd cylinders repaired , flush hyd system, new hyd filter	WO 590388	Hyd cylinders leaking through

Why1 did it lower by itself	**Why2** seals collapse	**Why3**	**Why4** -	**Why5**	**Counter measures:**	**Category**	**Who**	**Date complete**
1.Internal seals were leaking through	1. Hydraulic seals collapse	1.	1.		1. Do more regular test on bridge cylinders	Man Machine Method Material Environment		

AIRPORTS COMPANY SOUTH AFRICA

ANNEX F

Estimated times for breakdowns/faults

Diagnostic & Repair Call description	Estimated time to repair (hrs.) from the ACSA system as per Annexture H for information only
Fault by others	**0.17**
Power Related Fault	**1**
Actuator Fault	**0,5**
Actuator Motor	**0,5**
Compressor fault	**1**
Compressor Motor fault	**0,75**
Cyliders Damaged	**0,75**
Pipe Vessel	**0,75**
Beams	**0,5**
Water Channel Faulty	**0,75**
Mechanical Louvers Leaking	**1**
Sensors Faulty	**0,5**
Controller Fault	**0,33**
Cables fault	**1**
Fuse faulty	**0,25**
Fire System Interface Device Malfunctioning	**0,5**
Valve Malfunctioning	**0,5**
Other unforeseen breakdown:	**0,5**
Other unforeseen breakdown:	**0,5**

Diagnostic & Repair Call description	Estimated time to repair (hrs.) from the ACSA system as per Annexture H for information only
Fault by others	**0.17**
Leaking	**0,75**
Drive Fault	**0,66**
Cooling Valve fault/Adjusted	**0,25**
Power Related Fault	**1**
Chiller Unit Fault	**0,5**
Diffuser Fault	**0,4**
Diffuser Dirty	**1**
Actuator Malfunctioning	**0,25**

Filters Dirty or to be Replaced	**0,83**
Dampers Faulty	**0,5**
VSD Fault	**0,33**
Compressor fault	**1**
Motor fault	**0,75**
Pumps Faulty	**1,5**
Pipes Damaged	**1**
Fan Faulty	**0,75**
Duct Damaged	**1**
Duct Cleaning	**1**
Controller Fault	**0,33**
V belts Damaged	**0,25**
Drainage System blocked	**0,5**
Switch Malfunctioning	**0,33**
Heating System Fault	**0,75**
Gas shurtage	**2**
Adjusted setpoint	**0,08**
Cables fault	**1**
Burning Smell	**0,5**
Fire System Interface Device Malfunctioning	**0,5**
Too Hot	**0,25**
Too Cold	**0,25**
No Air Flaw	**0,25**
Cooling Towers Fault	**1**
Valve Malfunctioning	**0,5**
Condenser fault	**1**
Evaporator Fault	**1**
Louvers Damaged	**0,75**
Other unforeseen breakdown:	**0,5**
Other unforeseen breakdown:	**0,5**

AIRPORTS COMPANY SOUTH AFRICA

ANNEX G

Key Performance Indicators

1. Performance objectives

Normal airport operational hours shall be **from 04:00 to 24:00** for every day of the year but will be confirmed/amended by the Service Manager from time to time. The Contractor must allow for sufficient after-hours work in order for scheduled work not to interfere with airport operations

Minimum Staffing Schedule

The Contractor must maintain the following **minimum** staff available at all times and should price accordingly but not limited to the listed resources:

Skill	Days per week	Hours
SITE MANAGER/ SUPERVISOR	5	Mon-Fri (08:00-17:00) and whenever deemed necessary by the Employer
Control Technician	5	Mon-Fri (08:00-17:00) and whenever deemed necessary by the Employer
Lead Electrician	5	Mon-Fri (08:00-17:00) and Whenever deemed necessary by the Employer or the Artisan
Electrician	5	Mon-Fri (08:00-17:00) and whenever deemed necessary by the Employer
BMS, Controls and Data Analytics Engineer	5	Mon-Fri (08:00-17:00) and whenever deemed necessary by the Employer
Assistants	5	Mon-Fri (08:00-17:00) and Whenever deemed necessary by the Employer or the Artisan

* The Contractor must maintain at all times the above **minimum** staff and should price accordingly but not limited to the listed resources.

The Contractor must have additional resources available to attend to lengthy breakdowns or breakdowns of a specialised nature.

It shall be the Contractor's responsibility to ensure that all relevant labour and safety legislation is adhered to in scheduling staff.

The Contractor shall schedule staff to complete the preventative maintenance schedule accordingly. The Tenderer must ensure that sufficient allowance for all these items is made for in his/her pricing in the Activity Schedule.

Minimum qualifications of staff for duration of contract

Item No	Key Personnel Description	Minimum Experience	Minimum Qualifications
1	SITE MANAGER/SUPERVISOR	• Min 3 years' experience post trade test qualification • 2 years supervisory Experience • Min 2 years OHS experience	• SAQA Accredited Trade test Refrigeration Mechanic/Fitter • OHS Training certificate
2	Control Technician	Min 3 years' experience post trade test qualification and 2 years must be on the maintenance of Control panels, PLCs, SCADA, VSDs, sensors, Controllers and solid understanding of electronic communication protocols	• SAQA Accredited Control and/or Instrumentation Trade test Certificate OR N5 in Controls and/or Instrumentation
3	Lead Electrician	Minimum of 5 to 7 years post qualification as an Trade Tested Electrician demonstrating experience knowledge of switch gears, distribution boards, lockout procedures, protection systems and conducting and issuance of COC certificates minimum of 2 years' experience post obtaining a wireman's license.	• SAQA Accredited Trade test (Electrician) • Master Installation Electrician licence
4	Electrician	Demonstrate 2 years' experience after obtaining a SAQA accredited Trade test, Demonstrate experience of at least 3 years post qualification as an electrician and knowledge of switchgears, Distribution boards and protection systems	• SAQA Accredited Trade test (Electrician)
5	BMS, Controls and Data Analytics Engineer	At Least 10 years' experience post qualification with specific experience in Edge computing systems, Cloud and Localised BMS, Engineering, Safety systems, fire detection/HVAC interfaces, Working with indoor air quality Limits in the HCS Regulations and application. Demonstrate knowledge of PART O of SANS 10400, Demonstrate knowledge of EN12101, Chiller controls, Cooling tower controls, PLCs, Controllers, VFDs, Online water quality analysis, Energy Optimisation, Actuators, HVAC Control Loops and Control Modes, Demonstrate experience with Communication Protocols, at least 3 years' experience in interfacing BMS with Data Analytics Platforms, Creating digital input forms, and creating web/mobile based performance dashboards	• PR Tech Electronics/Electrical Light Current/Mechatronics
6	Assistants	•1 Year experience in maintenance of mechanical equipment	Electrical / Mechanical N2

2. Availability, mean time before failure and mean time to repair

The Contractor must comply with the following minimum system performance benchmarks:

*The Period of review shall be Monthly.

System Availability of HVAC	99%	IMC system captures this value
Response times during working hours	30 minutes on land side and 40 minutes on the airside	The response time is calculated from the time the contractor receives a call/missed call/voice mail etc. from IMC and sometimes from service manager)
Response times after working hours	60 minutes on land side and on the airside	The response time is calculated from the time the contractor receives a call/missed call/voice mail etc. from IMC and sometimes from service manager)
Closure duration during working hours	80 minutes on land side and 90 minutes on the airside	The closure duration is the time calculated from the time the contractor receives a call/missed call/voice mail etc. from IMC and/or sometimes from service manager) until the contractor calls IMC to close the call
Closure duration after working hours	120 minutes on land side and on the airside	The closure duration is the time calculated from the time the contractor receives a call/missed call/voice mail etc. from IMC and/or sometimes from service manager) until the contractor calls IMC to close the call
Closure of preventative maintenance work orders	All preventative maintenance work orders should be closed within 14 days of issue	All PM WO shall be closed with 6 working days from date of issuing to contractor, (Issued by ACSA either by mail or manual collection from IMC)
Closure of corrective work orders	All corrective maintenance work orders should be closed within 2 days of issue unless it is because of circumstances beyond the control of the contractor. Circumstances will have proven by contractor.	All Corrective WO shall be closed with 2 working days from date of creation by IMC, (Issued by ACSA either by mail or manual collection from IMC)

Performance Measures					
Item No	**Performance Measure**	**Purpose of measure**	**Frequency of Target Measure**	**Target**	**Source of performance data**
1	Availability of each chiller	Maintain sufficient comfort cooling conditions	Monthly	99,50%	Oracle CMMS
2	Availability of each cooling tower	Maintain sufficient comfort cooling conditions	Monthly	99,50%	Oracle CMMS
3	Availability of each Air Handling unit	Maintain sufficient comfort cooling conditions	Monthly	99,50%	Oracle CMMS
4	Chiller utilisation	Enhance equitable use of the Chillers	Monthly	25% of the time	BMS and or Data analytics
5	Chiller COP	Energy Efficiency	Monthly	Equals to or greater than 3	Data analytics platform
6	Year-on-Year Energy reduction	Energy Efficiency and Sustainability	Yearly	5%	Electrical BMS/Reports and or HVAC BMS and or Data analytics Platform
7	Average number of Blow down cycles	Effectiveness of the water treatment program and water saving	Monthly	7-10	HVAC BMS or Data Analytics Platform
8	Year-on-Year Water use reduction	Sustainability	Yearly	10%	Data analytics platform
9	Monthly reduction in number of valid repeat calls logged with IMC	Airport User/Customer satisfaction	Monthly	10%	Oracle CMMS
10	Ablutions Ventilation airflows	Promote healthy indoor conditions and statutory compliance	Monthly	20 Air changes per hour in each ablution	ACSA Witnessed airflow measurements (Hygrometer measurements)

3. Emergency Response time

ACSA deems an emergency as a situation caused by unforeseen circumstance. This is only instances where:

- Delaying to source the required goods,
- Works or services will result in Loss of life or injury,
- Reputational harm,
- Financial losses,
- Legal consequences,
- Interruption of essential or
- Business services and
- Any other relevant consideration

Below are the some of the emergencies identified but not limited to the below list

Item Description	Response Time

In a case where the HVAC system has failed	30 minutes during normal
In a case where the HVAC system has failed	45 minutes after hours

4. Guarantees

The defect free period is defined as that period following completion of the work where no defect directly associated with the Contractors workmanship is detected.

Defect free liability period – preventative maintenance	The defect free period will be no less than the interval between preventative maintenance intervals.
Defect free liability period – corrective or breakdown maintenance	The defect free period will be no less than 90 days.
Defect free liability period – project work	The defect free period will be no less than 12 months.

There are no current (the time of this bid) warrantees and guarantees on the infrastructure to be maintained by the contractor.

5. Assessments and Reviews

- Monthly assessment/review shall be done according to this NEC contract.
- Safety issues and file reviewed quarterly or as per Safety department frequency.
- Contract shall be Audited and Assessed the from time to time.
- The contractor will be assessed and scored quarterly also through the ACSA supplier development system or any other ACSA system.

6. Low service damages

Notification of Low service damages

The Service Manager will notify the contractor in writing of any Low service damages.

The Service Manager will also notify the contractor of any claims directed and incurred by ACSA as a result of the contractor failure of duties, **this will be for the account of the Contractor**.

The sources of the information shall be all reports and Audit reports which the infrastructure is subjected to(e.g. any authorised ACSA employees and any internal and external audits).

ACSA must notify the contractor in writing of its intention to claim a Low service damages within 30 days of an event or ACSA will lose its right to claim the Low service damages. Should ACSA not claim a Low service damages for an event it shall not be interpreted that the level of performance is acceptable or that ACSA shall not be entitled to claim Low service damages for similar future events. Under no circumstances shall a Low service damages be regarded as the only action ACSA may take against the Contractor or the only amount it may claim from the Contractor.

Low service damages tables

Progressive Punitive low service agreement which are entirely the contractor's fault shall be applied as below:

	Low service damages Criteria	Low service damages amount
Response time	Noncompliance with response times	R1 000,00 per event

Closure duration	Noncompliance with closure duration times	R1 000,00 per event
Closure of corrective work orders	Noncompliance with closure times for corrective maintenance work orders	R1 000,00 per event
Closure of preventative maintenance work orders	All preventative maintenance work orders should be closed within 14 days of issue	R1 000,00 per event
System Availability	Noncompliance with the system availability	R2 000,00 per system
Other Occupational Health and Safety Act 85 of 1993 which are criminal offences according to the OHS act	Termination after having followed the NEC early warning and risk reduction process	
There is consecutive Occupational Health and Safety Act 85 of 1993of the same offence/class	Termination after having followed the NEC early warning and risk reduction process	

Availability less than 91% for six consecutive months as measure by the IMCS system (which is the entirely the contractor's fault) will lead to contract termination.

Not meeting availability of 99.50% for each chiller	R2 000/month
Not meeting availability of 99.50% for each cooling tower	R2 000/month
Not meeting availability of 99.50% for each AHU	R2 000/month
Not meeting chiller utilisation 25% of the time	R2 000/month
Not meeting chiller COP of 3 of greater	R2 000/month
Not meeting year-on-year energy reduction of 5%	R10 000/year
Not meeting an average number of blow down cycles of 7-10	R2 000/month
Not meeting Year-on-Year Water use reduction of 10%	R10 000/year
Not meeting monthly reduction in number of valid repeat calls logged with IMC of 10%	R2 000/month
Not meeting ablutions ventilation airflows by 20 air changes per hour in each ablution	R1 000/month
Not maintaining the required minimum on-site staff requirements.	R2 000.00/position/day
Occupational health and safety act 85 of 1993 (Non-compliance with the OHS Act and its associated regulations (for example: leaving moving machinery exposed)	R2 000.00/event
Less than 100% of planned maintenance (PMs) completed per month (unless the delay in repair was agreed to by the Service Manager or his/her duly authorized representative or unless the required spares are not available to complete the work). Note work is complete after the PMs have been correctly completed returned to the contract manager and the ACSA IMC to be closed out.	R2 000/month
Not turning PO into completed works / completion certificate on agreed times lines as stated in Risk register	R2 000.00 / per PO / month
Other occupational health and safety act 85 of 1993 which are criminal offences according to the OHS act	Termination after having followed NEC contract process
3 Months Consecutive (monthly on contract period) occupational health and safety act 85 of 1993 of the same offence/class	Termination after having followed NEC contract process

Emergency Response time

ACSA deems an emergency as a situation caused by unforeseen circumstance. This is only instances where:

- Delaying to source the required goods,
- Works or services will result in Loss of life or injury,
- Reputational harm,

- Financial losses,
- Legal consequences,
- Interruption of essential or
- Business services and
- Any other relevant consideration

Below are the some of the emergencies identified but not limited to the below list

Item Description	Response Time	Low services damages
In a case where the HVAC system has failed	30 minutes during normal	R1 000.00/event
In a case where the HVAC system has failed	45 minutes after hours	R1 000.00/event

Discretionary annual contractor's performance review/assessment will be performed to consider the renewal of contract. Should the contractor's performance deemed below satisfactory the contract will not be renewed upon contract anniversary, therefore the contract will be terminated.

Continuous Improvement Program and the Computerized Maintenance Management System

It is hereby required that the Contractor ensures that a continuous improvement program is in place. For example, the criteria below may be used but not only limited to the items mentioned below.

1. An improvement in the availability of systems
2. An improvement on the minimization of spares holding (for example by increasing Mean Time to Failure of components)
3. Etc.

As mentioned above this list is not comprehensive and it is only used for illustrative purposes. Upon implementation of the contract the Employer and the Contractor shall agree targets for the continuous improvement program.

It is important to note that continuous improvement will only apply to those items that meet minimum benchmarks. Continuous improvement initiatives shall be reviewed every quarter or when deemed necessary by the Employer or the Contractor.

The Contractor shall take all reasonable actions to ensure that they facilitate successful implementation and execution of the CMMS. The Contractor shall before each anniversary date of the Contract investigate available CMMS data and report if savings can be achieved on the Contract for the next year. This may also include savings on the Contract monthly maintenance amount.

7. Internal and external factors

A list of some of the internal and external factors which may affect equipment SLAs / availability and are beyond the contractor's control are listed in **Annex T.** In such an event the contractor will not pay for low services damages which were caused by factors which were proven to be beyond the contractor's control.

MAINTENANCE RECORD SHEETS

When maintenance is performed, record sheets must be completed and signed off by both the Technician and an ACSA representative.

These record sheets must be stored for the duration of the contract and should be available for inspection at any time. **The lack of complete history files will result in immediate cancellation of the contract.**

All record sheets, job cards, history reports etc. will stay the property of ACSA and should be available on request. At the end of the contract period a complete set of documentation must be handed over to ACSA.

The contractor shall further provide copies of these record sheets to the ACSA contract manager by the fifth day of every month. **No money will be paid out if record sheets are not handed in.**

ANNEX H

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

This form is in C1.3 in this contract and must be filled in by the contractor

ANNEX I

Minimum Maintenance Programme

The Tenderer shall include a suggested maintenance programme that must attempt to cover all requirements under this contract. The below list should be used as a minimum. The responsibility lies with the contractor in ensuring compliance to OEM instructions

HVAC electricals and controls system

Electrical COC for all points of Control to points of consumption	After Installation and modification
Electrical and Control panel wiring drawings	Yearly (Y)
Fire Damper relay test report	Quarterly (Q)
AHU Fire signal relay test records	Quarterly (Q)
Smoke extraction and fresh air fan test records (under fire condition)	Quarterly (Q)
Plant Room refrigerant leak detector test records (SANS 10147)	Quarterly (Q)
Maintenance records as per procedure	Monthly/Quartely//Yearly
DB Earth leakage test records	Quarterly (Q)

All Maintenance of HVAC electricals and controls systems shall be scheduled, at least at minimum, to the requirements of the following tables:

Water-Cooled Chillers						
			Engineering Discipline scope			
Item No	**BOM (Bill of Materials)**	**Frequency**	**Mechanical**	**Electrical**	**Controls & Instrumentation**	**Civil**
1	Evaporator	Daily	Check the evaporator pressure and ensure it is below the OEM recommended limit			
		Daily	Inspect the evaporator gaskets for leaks			
		Monthly	Inspect the evaporator lagging for damages			
		Annually	Open the evaporator, inspect tubes and clean to remove deposits on tube wall surfaces. Provide photos before and after cleaning.			
2	Compressor and oil pump	Daily	Listen to the compressor for odd operating noise and for leaks	Check power consumption levels and stream to the data analytics platform.		
		Daily	Check that the compressor oil pump is functional			
		Weekly	Check the refrigerant levels			
		Quarterly	Perform an oil analysis at a SANAS accredited Lab and record the results in the data analytics platform. The Lab report shall show wear metal type and content, Viscocity @ 40 and 100 degrees, water content and total acid number	Perform an Insulation resistance test and motor supply cable continuity test , record the measured resistance values in Ohms and compare with OEM's cable datasheet or similar. Results must be recorded in the digital form for use in the data analytics platform.		
3	Condensor	Daily	Check the condensor pressure and ensure it is below the OEM recommended limit			

		Daily	Inspect the evaporator gaskets for leaks			
		Monthly	Inspect the evaporator lagging for damages			
		Annually	Open the evaporator, inspect tubes and clean to remove deposits on tube wall surfaces. Provide photos before and after cleaning.			
4	Expansion Valve	Daily	Check the pressure differential across the expansion valve and compare to OEM limits			
5	Control panel	Monthly		Check all wiring for neatness and looseness	Check all settings (setpoints, dead band temperature etc) and adjust where necessary	
					Check all control wiring for neatness and looseness	
6	Primary pump and motor	Daily	listen for cavitation noise, feel temperature, check if coupling is intact and guarded, check pump suction and discharge pressure	check the running motor amps and compare to rated running amps.		
		Weekly	Check pump bases that they are secured to ground and that there are no loose bolts.			
		Monthly	adjust gland/mechanical packing where necessary	Perform an Insulation resistance test and motor supply cable continuity test , record the measured resistance values in Ohms and compare with OEM's cable datasheet or similar. Results must be recorded in the digital form for use in the data analytics platform.		
		Quarterly			Measure pump and bearing temperatures, measure vibration and record in data analytics digital form	
7	Chiller plant room	Annually	Measure noise sound power level and record results in data analytics digital form			Inspect chiller hold down bolts

Air-Cooled Chillers						
			Engineering Discipline scope			
Item No	BOM (Bill of Materials)	Frequency	Mechanical	Electrical	Controls & Instrumentation	Civil
1	Evaporator	Daily	Check the evaporator pressure and ensure it is below the OEM recommended limit			
		Daily	Inspect the evaporator gaskets for leaks			
		Monthly	Inspect the evaporator lagging for damages			
		Annually	Open the evaporator, inspect tubes and clean to remove deposits on tube wall surfaces. Provide photos before and after cleaning.			
2	Compressor and oil pump	Daily	Listen to the compressor for odd operating noise and for leaks	Check power consumption levels and stream to the data analytics platform.		
		Daily	Check that the compressor oil pump is functional			
		Weekly	Check the refrigerant levels			
		Quarterly	Perform an oil analysis at a SANAS accredited Lab and record the results in the data analytics platform. The Lab report shall show wear metal type and content, Viscocity @ 40 and 100 degrees, water content and total acid number	Perform an Insulation resistance test and motor supply cable continuity test , record the measured resistance values in Ohms and compare with OEM's cable datasheet or similar. Results must be recorded in the digital form for use in the data analytics platform.		
3	Condensor	Daily	Check condensor coils for leaks			
		Weekly	Check condensor coil fins and comb where necessary			

		Monthly	Condenser fans should be cleaned, bearings need to be checked for wear and lubricated, and belts and couplings need to be checked and tightness checked or adjusted as necessary			
4	Expansion Valve	Daily	Check the pressure differential across the expansion valve and compare to OEM limits			
5	Control panel	Monthly		Check all wiring for neatness and looseness	Check all settings (setpoints, dead band temperature etc) and adjust where necessary	
					Check all control wiring for neatness and looseness	
6	Primary pump and motor	Daily	listen for cavitation noise, feel temperature, check if coupling is intact and guarded, check pump suction and discharge pressure	check the running motor amps and compare to rated running amps.		
		Weekly	Check pump bases that they are secured to ground and that there are no loose bolts.			
		Monthly	adjust gland/mechanical packing where necessary	Perform an Insulation resistance test and motor supply cable continuity test , record the measured resistance values in Ohms and compare with OEM's cable datasheet or similar. Results must be recorded in the digital form for use in the data analytics platform.		
		Quarterly			Measure pump and bearing temperatures, measure vibration and record in data analytics digital form	

Air Handling Units

			Engineering Discipline scope			
Item No	**BOM (Bill of Materials)**	**Frequency**	**Mechanical**	**Electrical**	**Controls & Instrumentation**	**Civil**
1	AHU Box and Access Doors	Daily	Ensure that the access doors are closed and locked while the unit is in operation			
		Quarterly	Inspect the AHU box for leaks and ensure that it is sealed. Inspect the door hinges and locking mechanisms for smooth operation			Inspect that the AHU box is secured to the ground
2	Fresh Air Intake Damper and Actuator	Daily			Check the health status of the actuators	
		Monthly	Uncouple actuator and check Blades in closed position to be sure all close tightly. If necessary, adjustments should be made to damper linkage or linkages to close any partially open blades		Test the operation of the actuator on closed, 25%, 50%, 75% and fully open position through the BMS/local controller panel and witness	
		Quarterly	Check pins, straps, bushings (bearings) for wear and corrosion and check condition of the gaskets	Inspect the insulation of the actuator power supply cables for cracks	Simulate outdoor temperature that are similar to indoor and check if the airside economiser works accordingly	
			Lubricate all mechanisms and moving parts	Perform an Insulation resistance test and cable continuity test , record the measured resistance values in Ohms and compare with OEM's cable datasheet or similar		
			Clean Dampers	Inspect the terminations and tighten any loose connections		
3	Primary and Secondary bank of filters	Weekly	Inspect filters for damage and replace where necessary			

			Check and record the pressure differential between primary and secondary filters and Clean filters if pressure exceeds 250 Pascals (where no OEM data is available). If OEM recommended pressure differential is available, clean filters when this value is exceeded.			
		Yearly	Replace Filters			
4	Filter pressure differential Indicator and or Transmitter	Weekly			Test the health status of the pressure differential Indicator & or Transmitter	
5	Cooling coil, 2/3 way actuated valves	Weekly	Operate the actuated valves to both closed and fully open position		Test the health status of the valve actuators	
			Inspect the coil fins and comb where necessary and inspect for leaks			
		Quarterly	Pressure-clean coil with water and detergent or any chemical agent Low Ozone Depletion and Global warming potential		Simulate supply and return air temperatures and test if the chilled water bypasses the cooling coil and record results	
6	Fan and drive System	Daily	Check the flow rate and static pressure of fan and compare with required flow and Static pressure according to Part O of SANS 10400		Check the health status of the supply air temperature	
			Check the voltmeter and ammeter readings and compare with fan motor rated parameters		Check the health status of the return air temperature	
		Weekly	Inspect power transmission belts for slip and adjust where necessary		Check the health status of the VSD's	
			Listen for odd operating noises from the fan			
		Monthly	Measure the belt tension, compare to requirements and record results. Adjust belt tension where necessary.	Inspect connections to the motor termination box and tighten	Blow dust on the VSD/VFD	
		Quarterly	Measure vibration of the fan and motor and record results and record results in the data analytics digital form			

			Measure the bearing temperatures of the fan and motor and record results in the data analytics digital form			
			Measure alignment between motor shaft and fan shaft and record results in the data analytics digital form	Perform an Insulation resistance test and motor supply cable continuity test , record the measured resistance values in Ohms and compare with OEM's cable datasheet or similar. Results must be recorded in the digital form for use in the data analytics platform.	Inspect the VSD/VFD for loose connections and tighten	
			Lubricate fan bearings		Adjust the frequency on the VSD and measure the motor shaft speed with a stroboscope and record results in the data analytics digital form.	
7	Control Panel	Monthly			Check that all the settings and set-points are as required.	
8	Condensate recovery piping	Monthly	Check that the piping and the drain are not blocked and clean where necessary			

Cooling Tower Plant						
			Engineering Discipline scope			
Item No	**BOM (Bill of Materials)**	**Frequency**	**Mechanical**	**Electrical**	**Controls & Instrumentation**	**Civil**
		Daily	Check that the water spray pattern is correct and that nozzles are not blocked			
		Daily	Check that the cooling tower isolation valve is in open position			
		Monthly	Test the isolation valve by operating to full open position and to closed position			
1	Wet deck	Monthly	Inspect the drift eliminators for debris blockage and clean			

		Quarterly	Spray clean the drift eliminators			
			replace the spray nozzles			
		Annually	Sandblast piping to remove deposits			
			Inspect the induced draft fans for correct operation and rotation	Check the running amps and stream to data analytics platform where possible	Check the health status of the fan controls	
		Daily	Inspect power transmission belts for slip			
		Weekly	Measure belt tension and adjust			
			Check for deposits on the fan blade	Inspect connections to the motor termination box and tighten		
			Check that the blades are secured	Test the E-stops and check motor response		
		Monthly	Check the condition of pulleys/sprockets	Perform an Insulation resistance test and motor supply cable continuity test , record the measured resistance values in Ohms and compare with OEM's cable datasheet or similar. Results must be recorded in the digital form for use in the data analytics platform.	Test the fan VSD/VFD and motor response at 20%, 50%, 70% 100% fan speed	
			Measure vibration of the fan and motor and record results and record results in the data analytics digital form			
			Measure the bearing temperatures of the fan and motor and record results in the data analytics digital form			
			Measure alignment betweenmotor shaft and fan shaft and record results in the data analytics digital form			
2	Fan	Quarterly	Lubricate fan bearings			

		Annually	Remove fan send to engineering shop for sandblasting of blades and fan balancing. A balancing report must also be issued.			
3	Tower structure and basin	Weekly	Inspect condition of air intake louvres			check that the tower structure is secured to ground
			Check for loose screws or bolts and tighten			
			Inspect for and clean any microbial activitity on the tower structure			
			Check the tower basin for leaks and that the overflow drain line is not blocked			
		Monthly	Check for corrosion			
4	Tower fill media	Weekly	Check the water fall pattern and Inspect the fill media for damage or deterioration			
5	Tower piping	Daily	Check that the make-up floating/solenoid valve is opening and closing correctly		check that the basin water level measuring instrument functions correctly and that it transmits the values to the PLC/Controller	
		Weekly	Check that the blow down occurs at least after 4-5 cycles			
		Yearly	Inspect piping for scaling using a pipe/duct camera and Remove scale deposits on the tower pipe internals. If chemicals are used, only biodegradable ones are to be used. Approval of descaling chemical must be obtained first from ACSA.			
6	Water management system	Weekly	Check that the water management and reporting systems functions correctly			
7	Water treatment station	Weekly	Check that the water treatment			
		Monthly	An independant SANAS accredited lab to take an open loop (Condensor) water sample and issue the following results by the 5th working day of each month: • Total dissolved solids • pH • Alkalinity • Chlorides • Calcium Once the Parameters are tested a Langelier Index must be determined at different cycles to find the optimal cycles of concentration			

		Annually	An independent Approved Inspection Authority (Approved by Department of Labour) and SANAS accredited lab to take an open loop (Condensor) water sample and test for Legionella			

Chilled water and condensor water piping system						
			Engineering Discipline scope			
Item No	**BOM (Bill of Materials)**	**Frequency**	**Mechanical**	**Electrical**	**Controls & Instrumentation**	**Civil**
1	Valves	Monthly	While the system is off, opne and close the valve to check the valve works	• Inspect the termination boxes for loose cables. • Do an insulation test and electrical continuity test	Test actuators by checking that they turn the actuated valve to open and closed position.	
		2 yearly	Replace the isolation and non-return valves			
2	Flanges	Monthly	Inspect flanges for leaks (Where possible)			
			Inspect bolts for looseness and severe corrosion			
		Yearly	Replace gaskets			
		3 Yearly	Replace flange bolts			
3	Pipe	Weekly	Inspect the pipe for leaks			
		Quarterly	Inspect the condensor water pipes for corrosion			
		Yearly	Open the condensor water pipes and inspect pipe for scalling through use of internal pipe cameras			
			Remove scalling			
4	Cladding	quarterly	Inspect the pipe cladding for damages or deterioration			
5	Instruments	Daily			Inspect pressure gauges, indicators and transmitters for correct operation	
					Inspect thermometers for correct operation	
					Inspect Temperature Indicators and Transmitters for correct Operation	
					Inspect the chilled water By-pass loop flow meter for correct operation	
					Inspect actuators for correct operation	
		Weekly			Test the health status of the pressure, temperature and flow sensing Instruments	

					Test the health status of the 3 way/2way valve actuators	

Air duct System						
			Engineering Discipline scope			
Item No	**BOM (Bill of Materials)**	**Frequency**	**Mechanical**	**Electrical**	**Controls & Instrumentation**	**Civil**
1	Fresh air louvres	Monthly	Inspect louvre blades and fasteners filters			
		Quarterly	Clean louvre filters			
2	Fire Dampers	Monthly		Inspect terminations for loose connections	Test the functionality of fire damper-to-fire detection Interface	
		Quarterly	Inspect louvre blades, fasteners and clean dust depostion on the blades			
	Insulation	Monthly	Inspect the supply ducting insulation			
5	Ducting	Quarterly	Internal Inspection of the common restaurant smoke ducts and provide before and after cleaning pictures			
			Cleaning (Fat removal) of the smoke ducts			
	Damper Fasteners and supports	Monthly	Inspect duct fasteners and duct supports			
		Yearly	Inspection of the Duct supports by a PRENG Mechanical and provision of a report with remedial actions			
6	CO2 Sensors	Monthly			Test the functionality of the indoor CO2 Sensors and connection to BMS and Data analytics	
		Quarterly			Calibrate the indoor CO2 Sensors and provide calibration certificate signed by PRENG Electronics/Mechatronics and confirming compliance to the HCS Regulations	
7	CO Sensors	Monthly			Test the functionality of the fixed CO Sensors and connection to BMS and Data analytics	
		Quarterly			Calibrate the fixed CO Sensors and provide calibration certificate signed by PRENG Electronics/Mechatronics and confirming compliance to the HCS Regulations	

8	Indoor controllers and temperature sensors	Monthly			Test the functionality of the indoor controllers and temperature Sensors and connection to BMS or edge controller and Data analytics	
9	Diffusers and disc valves	Monthly	Inspect diffusers and disc valves for correct functionality		Test the VAV diffusers for correct functionality	

Ventilation Fan System						
			Engineering Discipline scope			
Item No	**BOM (Bill of Materials)**	**Frequency**	**Mechanical**	**Electrical**	**Controls & Instrumentation**	**Civil**
1	Fresh Air Fans	Monthly	Inspect couplings, measure belt tension and Inspect quarding	Check Terminations for loose connections		
		Quarterly	Measure vibration and bearing temperatures and log results in the Data analytics digital form	Test earth leakage, insulation resistance and record results in the digital form of data analytics		Inspect the hold down bolts and base concrete for cracks
2	Toilet/Ablutions Extraction Fans	Monthly	Inspect fan for correct operation	inspection terminations for loose connections	Measure airflow in the ablutions and record results in the data analytics digital form	
		Quarterly	Clean fan			
3	Smoke Extraction	Monthly	Inspect the fan for correct operation		Test Smoke-extraction-to-fire detection Interface	
		Quarterly	Measure vibration and bearing temperatures and log results in the Data analytics digital form	Test earth leakage, insulation resistance and record results in the digital form of data analytics		

BMS and Field Instruments			
Item No	**BOM (Bill of Materials)**	**Frequency**	**Controls & Instrumentation**
1	BMS	Daily	Check that the chilled water supply is according to setpoint and that the return temperature is correct
			Check that the chilled water bypass flow meter is showing a correct figure

			Check that all chiller parameters are correct on the
			Check that all the cooling tower parameters are correct
			Check that the AHU performance parameters are correct
			Check that the condensor water temperatures are correct
		Monthly	Chech that the BMS server is healthy and works correctly and Check and adjust settings where necessary
		Quarterly	Check that the communication between the field devices and BMS is according to the site specific communication protocol(s)

Split units						
			Engineering Discipline scope			
Item No	**BOM (Bill of Materials)**	**Frequency**	**Mechanical**	**Electrical**	**Controls & Instrumentation**	**Civil**
		Monthly	Clean Filters			
1	Indoor unit	Quarterly	Blow condensate drain pipe where necessary, Check refrigerant and charge where necessary		Check communication between indoor and outdoor unit	
2	Outdoor condensor	Quarterly	Clean condensor coils	Inspect terminations for loose connections and condition of wires		

Data Analytics and Reporting			Engineering Discipline
Item No	**Area**	**Frequency**	**Controls & Instrumentation and Data Analytics**
			Energy usage of the chillers, providing peak periods of energy usage month-on-month and year-on year comparison. Show report of events leading to spike/significant drop in energy usage.
			Energy usage of the cooling tower plant providing month-on-month and year-on year comparison.Show report of events leading to spike/significant drop in energy usage.
			Energy usage of the AHU plant providing month-on-month and year-on year comparison.Show report of events leading to spike/significant drop in energy usage.
			Chiller efficiency shown month-to-date, year-to-date and seasonal Chiller efficiency
			Impact of condensor water temperatures on Chiller Efficiency
			Impact of the Cooling Tower Approach on the chiller efficiency
			Chiller utilisation patterns (Daily, weekly, monthly)
			Cooling tower utilisation patterns
			Blow down cycle patterns and timing predictions of impact on chiller efficiency
			Cooling tower water use patterns and volumes
			Monitor patterns of impact of Cooling Tower Approach on Range and predictions of maintenance interventions
			Analysis of monthly water quality lab/online results and flag patterns of deviations from required quality
			analysing outdoor conditions/predicted outdoor conditions and providing prediction of impact on cooling tower and chiller performance
			Monitoring of chiller parameters, analysing trip cause-and-effect patterns and providing predictions of maintenance interventions
			Analysing Indoor CO2 levels and providing timing patterns of greatest CO2 Levels and area.
			Analysing CO levels and providing timing patterns of greatest CO Levels and area.
			Analysing digital form inputs from mechanical and electrical condition monitoring activities, providing patterns of deterioration and providing predictions of maintenance interventions
			Analyse call log information and profile of problematic places and the units feeding such places, timing and prevalent timing of reported issues
			Analysing input fire detection signals, provide a time stamp of signal reception, AHU switch off time and fire damper closure times
			Web based and mobile based performance dashboard
			Allow push notifications via SMS and email according to a defined escalation procedure.
1	Data Analytics	Monthly/Live	Providing Month-on-Month/Year-on-Year and season-on-season reports

Table 12: Electrical Panels and DB's

Infrastructure description	Qty	Frequency	Description of the works
Panels and DBs	428 + units (Domestic, International, CTB, Remote sites and Cargo)	Weekly	Check HVAC plant room lighting and replace where necessary with LED lights.
		Yearly	Label/Update all HVAC Plant Room Panels and DBs
		Monthly	Compile/update panels and DB register
		Semi-annually	Compile/update panel and DB drawing register.
		Semi-annually	Verify panel and DB drawings and amend where necessary
		Monthly	Check that all door panels are lockable and repair/replace where necessary
		Monthly	Inspection and testing of panels components in line with SANS 10142.
		Monthly	Remove dust and other deposits
		quarterly	Painting of DB's when it is necessary
		Monthly	Check voltmeters and ammeters and replace where necessary
		Monthly	Check for loose connections and tighten circuit breaker terminals.
		quarterly	Check cable insulation and replace where necessary.
		quarterly	Manually switch the circuit breakers on and off.
		quarterly	Check and replace panel lights where necessary
		quarterly	Check isolator switches and replace where necessary
		Quarterly	Check the fire detection interfacing relays where applicable and replace where necessary.
		Monthly	Check all circuit breakers, test Earth leakages etc and replace where necessary.
		Yearly	Perform COCs on all HVAC Plant room panels and DBs when installation is extended or modified.

Table13: Spares management

Infrastructure description	Qty	Frequency	Description of the works
Spares Management	1000+ items (Domestic, International, CTB,	Monthly	Compile/update an inventory list and allocation of stock codes
		Daily	Administer a web-based cloud inventory management system
		Daily	Barcoding and scanning incoming and outgoing stock items

Infrastructure description	Qty	Frequency	Description of the works
	Remote sites and Cargo)	Monthly	Maintain shelving, floors and access control in the store room
		Monthly	Management of rotable inventory management system
		Monthly	Stock counting and compiling reports as per ACSA Inventory Management system
		Quarterly	Stock counting and compiling reports as per ACSA Inventory Management system

All Preventative Maintenance Activities but not limited to:

All Preventive Maintenance shall be scheduled, at least, to the requirements of the following table:

I. ANNEX C: Contract start-up proposal

The Tenderer shall include the start-up proposal for the maintenance contract. It must include timelines and the number of equipment (per category and total) that must be serviced per month. The total number of equipment is indicated in schedule of equipment (Annex F) or reflected below. The proposal must be such that monthly preventive maintenance hours are distributed evenly over the months of the year. The tenderer must develop a reasonable maintenance plan. The number of equipment to be serviced every month must be indicated for each category as well as the monthly total. The figure below is a typical plan for January which repeats over the rest of the year with the corresponding estimated number of equipment per month. The tenderer to issue a more detailed and accurate plan after award of tender.

Service category	Jan.	F	M	A	M	J	J	A	S	O	N	D	Units/month	
													Estimated	Proposed
M, Q, S, A	[redacted]												166.7	
M, Q, S	[redacted]												166.7	
M, Q	[redacted]												333.3	
M	[redacted]												1333.3	
Total													2,000	

M= Monthly service, Q=Quarterly service, S= Semi-annual service, A=

Annual service M, Q, S, A: Equipment that undergo all four services in a

month
M, Q, S: Equipment that undergo three services in a month
M, Q: Equipment that undergo
two services in a month
M: Equipment that undergo
one service in a month

The tenderer must also show on the plant his resources (e.g. John, Peter, Abe, etc.) allocation to complete each category of service. It is assumed 20 working days per month, 7 working hours per day and one unit serviced per one hour. Clearly explain the plan and show how objectives will be achieved. Please ensure a same resource is not used where tasks that overlap. Show start and end dates of each category of service.

ANNEX J (Contractor to fill in)

ACSA SERVICE & MAINTENANCE CONTRACTORS
ENVIRONMENTAL TERMS AND CONDITIONS TO COMMENCE WORK - EMS 048

The following Environmental Terms and Conditions shall be strictly adhered to by all contractors when conducting works for the Employer. The Employer shall audit Contractor activities, products and services on an ad hoc basis to ensure compliance to these environmental conditions. Any pollution clean-up costs shall be borne by the Contractor.

ISSUE	REQUIREMENT
Environmental Policy	ACSA's (the Employer's) Environmental Policy shall be communicated, comprehended and implemented by all appointed Contractor staff.
Storm water, Soil and Groundwater Pollution	• No solid or liquid material may be permitted to contaminate or potentially contaminate storm water, soil or groundwater resources. • Any pollution that risks contamination of these resources must be cleaned-up immediately. Spills must be reported to the Employer immediately. Contractors shall supply their own suitable clean-up materials where required. • Washing, maintenance and refuelling of equipment shall only be allowed in designated service areas on the Employer property. It is the Contractor's responsibility to determine the location of these areas. • No leaking equipment or vehicles shall be permitted on the airport.
Air Pollution	• Dust: Dust resulting from work activities that could cause a nuisance to employees or the public shall be kept to a minimum. • Odours and emissions: All practical measures shall be taken to reduce unpleasant odours and emissions generated from work related activities. • Fires: No open fires shall be permitted on site.
Noise Pollution	• All reasonable measures shall be taken to minimize noise generated on site due to work operations. • The Contractor shall comply with the applicable regulations regarding noise.
Waste Management	• Waste shall be separated as general or hazardous waste. • General and hazardous waste shall be disposed of appropriately at a permitted landfill site should recycling or re-use of waste not be feasible. • Under no circumstances shall solid or liquid waste be dumped, buried or burnt. • Contractors shall maintain a tidy, litter free environment always in their work area. • Contractors must keep on file: 1. The name of the contracting waste company 2. Waste disposal site used 3. Monthly reports on quantities – separated into general, hazardous and recycled 4. Maintained file of all Waste Manifest Documents and Certificates of

	Safe Disposal 5. Copy of waste permit for disposal site This information must be available during audits and inspections.
Handling & Storage of Hazardous Chemical Substances (HCS)	• All HCS shall be clearly labelled, stored and handled in accordance to Materials Safety Data Sheets. • Materials Safety Data Sheets shall be stored with all HCS. • All spillages of HCS must be cleaned-up immediately and disposed of as hazardous waste. (HCS spillages must be reported to the Employer immediately). • All contractors shall be adequately informed with regards to the handling and storage of hazardous substances. • Contractors shall comply with all relevant national, regional and local legislation regarding the transport, storage, use and disposal of hazardous substances.
Water and Energy Consumption	the Employer promotes the conservation of water and energy resources. The Contractor shall identify and manage those work activities that may result in water and energy wastage.
Training & Awareness	The conditions outlined in this permit shall be communicated to all contractors and their employees prior to commencing works at the airport.

Low Service Damages

Low service damages shall be imposed by the Employer on Contractors who are found to be infringing these requirements and/or legislation. The Contractor shall be advised in writing of the nature of the infringement and the amount of the low service damages to be imposed. The Contractor shall take the necessary steps (e.g. training/remediation) to prevent a recurrence of the infringement and shall advise the Employer accordingly. The Contractor is also advised that the imposition of low service damages does not replace any legal proceedings the Council, authorities, landowners and/or members of the public may institute against the Contractor.
Low service damages shall be between R 200.00 and R 20,000.00, depending upon the severity of the infringement. The decision on how much low service damages to impose will be made by ACSA's (the Employer) Airport Environmental Management Representative in consultation with the Airport Manager or his/her designate and will be final. In addition to the low service damages, the Contractor shall be required to make good any damage caused due to the infringement at his/her own expense.

I, _____ (name & surname) of _____

_____ (company) agree to the above conditions and acknowledge the Employer's right to impose low service damages should I or any of my employees or sub-contractors fail to comply with these conditions.

Signed: _____ on this date: _____ (dd/mm/yyyy)

at: _____ (airport name).

ANNEX K

Maintenance of HVAC electricals and controls systems Spares List

STOCK COUNT

Name of Storeroom:	**KB2 AND KB2A**	**Date of Stock Count:**	**31**
Storeroom Location:	**KB2**	**Month of Stock Count:**	**JANUARY 2019**
Name of Contractor:			

Stock Count Sheet

Name of Work Coordinator		**Signature of Work Coordinator**	
Name of Stock Coordinator		**Signature of Stock Coordinator**	

Spare Part Code	Bin Location	Spare Part Description	FROM	Min Qty	Qty on KARDEX	Qty Counted	Qty Damaged/ Obsolete	Qty Shortfall	Qty Excess	Unit Price	Stock Value
BE-48-48		AC Ammeter - BE 48-BEW-48mm AC 1 A AC	each	0	0	0	No			R -	R -
BE-48 500 VAC		AC Ammeter - BE 48-BEW-48mm AC 500 VAC	each	0	0	0	No			R -	R -

BE - 48 400 VAC		AC volmeter - BE 48 - BEW - 72mm AC 400 VAC	each	0	0	0	No			R -	R -
BE - 96-60 VAC		AC Ammeter - BE 96 BEW - 96mm AC 60 VAC	each	0	0	0	No			R -	R -
BE - 96-400v		AC Volmeter - BE -96 - BEW -400V	each	0	0	0	No			R -	R -
SQ72-40AD	A2	Ammeter 40A AC direct connected	each	10	8	8				R 228,00	R 1 824,00
BM00137	II	1,5mm red insulated lug 8mm	pack	10	300	300				R 75,00	R 22 500,00
BM00132	II	1,5mm red insulated lug 6mm fork	pack	10	200	100				R 58,00	R 5 800,00
BM00226	II	2,5mm blue insulated lug 5mm fork	pack	10	100	100				R 56,00	R 5 600,00
BM00320	II	4,6mm yellow insulated lug 4mm	pack	10	0	0				R 68,00	R -
BM00126	II	1,5mm red insulated lug 5mm fork	pack	10	200	200				R 52,00	R 10 400,00
BM00232	II	2,5mm blue insulated lug 6mm fork	pack	10	100	0				R 66,00	R -
BM00220	II	2,5mm blue insulated lug 4mm fork	pack	10	0	0				R 49,00	R -
BM00331	II	4,6mm yellow insulated lug ring/100	pack	10	100	200				R 68,00	R 13 600,00
BM00251	II	2,5mm blue insulation lug 100m	pack	10	0	0				R 57,00	R -
BM00160	II	1,5mm red insulation ferrule	pack	10	0	0				R 71,00	R -
BM00326	II	4,6mm yellow insulated lug 5mm fork	pack	10	0	0				R 62,00	R -
BM00319	II	4,6mm yellow insulated lug 4mm	pack	10	200	200				R 105,00	R 21 000,00
BM00332	II	4,6mm yellow insulated lug 6mm fork	pack	10	20	0				R 62,00	R -

BM00237	II	2,5mm blue insulated lug 8mm	pack	10	200	200				R 96,00	R 19 200,00
BM00151	II	1,5mm red insulated lug 100m	pack	10	0	0				R 51,00	R -
BM00251	II	2,5mm blue insulated lug 100m	pack	10	100	0				R 57,00	R -
BM00337	II	4,6mm yellow insulated lug 8mm	pack	10	100	100				R 92,00	R 9 200,00
BM00108	II	1,5mm red insulated lug 3mm fork	pack	10	0	0				R 43,00	R -
BM00231	II	2,5mm blue insulated lug 6mm	pack	10	200	200				R 81,00	R 16 200,00
BM00119	II	1,5mm red isulated lug 4mm	pack	10	100	100				R 43,00	R 4 300,00
BM 00131	II	1,5mm red insulated lug 6mm	pack	10	100	100				R 78,00	R 7 800,00
CONT/0100/00250	2E	Controllers	each	5	0	0				R 728,00	R -
BM00219	II	2,5mm blue insulated lug 4mm	pack	10	200	200				R 49,00	R 9 800,00
PTAVAVI19801	2E	Bayonet type diffuser	each	20	0	0				R 1 647,00	R -
BM00137	II	1,5mm red insulated lug 8mm ring	pack	10	0	0				R 75,00	R -
BM00109	II	1,5mm red insulated lug 3mm	pack	10	100	100				R 41,00	R 4 100,00
NR24A-SR	B7	Std actuator 10Nm 24V MOD	each	16	11	11				R 2 204,10	R 24 245,10
B2502	2C	25x4 core cable	metres	65	0	0				R 1 000,00	R -
6012,02	B11	M10H eu2 telux switch	each	3	0	0				R 828,92	R -
BUY00002	B5	Micro830 controller	ea	5	5	5				R 12	R 60 437,50

			ch							087,50	
930-83222534	B3	Diff press switch 50-500Pa	each	4	2	2				R 304,00	R 608,00
CRH0005	B17	24000BTU compressor	each	1	1	1				R 1 622,00	R 1 622,00
GGR0220	B15	R22 disposacan 13,6kg	each	1	1	1				R 760,00	R 760,00
EGC0020	B13	Run capacitor 50uF 450V	each	1	1	1				R 94,00	R 94,00
2517X42MM	B19	2517X42MM taper lock bush	each	2	0	0				R 166,88	R -
VB16NX1700F	2D	SPB 1700 fenner wedge belt	each	3	0	0				R 106,57	R -
125A 3P	EE	125A isolator	each	1	1	1					R -
125X2 SPB	A18	125X2 SPB T/L pulley 2012-50	each	2	1	1				R 274,96	R 274,96
150X2 SPB	A18	150X 2 SPB T/L pulley 2012-50	each	2	1	1				R 752,22	R 752,22
160X3 5P8	B18	160X 3 SPB T/L Pulley 2517-65	each	2	2	2				R 512,16	R 1 024,32
TB/T1-S	B19	Duct temp	each	15	15	15				R 417,00	R 6 255,00
IQ4/NC/00/230	B19	Controller	each	1	1	1				R 9 386,00	R 9 386,00
IQ4E/16/BAC/230	B19	Controller	each	14	1	1				R 17 419,00	R 17 419,00

EML1943033	2H	3kw 4P 380 motor	each	1	0	0				R 2 316,62	R -
EML3203033	2H	15KW 4P 380 motor	each	2	1	1					R -
BE-96-600v		AC Volmeter - BE -96 - BEW -600V	each	0	0	0	No			R -	R -
20-200		AIR Flow Switch	each	0	0	0	No			R -	R -
F61SB-9100		Airflow switch - F61SB -9100 - Johnson controls - 15.6u.s.gal / min	each	0	0	0	No			R -	R -
P233A-4		Air pressure switch - P233A-4 - Johnson controls - 5 (2) A 250 V	each	0	0	0	No			R -	R -
SANS 150-1000		Alvern cable - SANS150-1000V	each	0	0	0	No			R -	R -
VA-7820-GGA-11		Actuator-7820-GGA-11-atbro systems	each	0	0	0	No			R -	R -
VA-71025		Actuators - VA - 71025 - Johnson controls - 24V-50/60Hz.4.7 VA	each	0	0	0	No			R -	R -
HA02230010	B14	Super F steel cut disc 230mm	each	10	9	9				R 47,00	R 423,00
HA02115035	B14	Super F steelgrind disc 115x6,4	each	20	17	17				R 40,00	R 680,00
HA02115041	B14	Super F 2in1 counter box 115	each	4	0	0				R 109,41	R -
GRAE-40-NPP		Ball Bearing - GRAE 40 - NPP - B - INA - H1031-15	each	0	0	0	No			R -	R -
STOE01310	B2	PC board -mitsubishi	ea	1	1	1				R 2	R 2 950,00

			ch							950,00	
TE200 A20	B4	Space micro sensor 20k	each	30	30	30				R 245,00	R 7 350,00
00356 37	B10	Omron timer	each	20	15	15				R 1 052,00	R 15 780,00
GX16-53U	A29	3P on-off-on changeover switch	each	50	43	43				R 376,64	R 16 195,52
GRB-1003	A4	Crabtree 1L 1W switch complete	each	10	4	4				R 29,86	R 119,44
GW92 111	A22	1P 32A circuit breaker	each	20	5	5				R 70,00	R 350,00
20-1602-01	B9	Panel lock 8mm sq key	each	200	190	190				R 117,00	R 22 230,00
01702 59368	2I	45kw speed drive	each	2	2	2				R 52 142,40	R 104 284,80
SACF W10	2I	VSD 11kW 380v 24A	each	2	1	1				R 8 917,00	R 8 917,00
99990 8015	2J	QD red oxide primer 5L	each	1	1	1				R 195,00	R 195,00
99990 2329	2J	QD enamel black gloss 1Lt	each	2	2	2				R 75,00	R 150,00
31651 40149 40	B14	Cutting disk 115x2,5mm steel	each	10	10	10				R 13,11	R 131,10
99990 1020	B14	Rivets fap 4012 pkt 100	packet	1	1	1				R 27,00	R 27,00
60057 21018 79	B14	Drillbit HSS IND 4,0mm card	each	4	4	4				R 20,00	R 80,00

9999028 47	B14	Drilbit SDS+16x20	each	5	2	2				R 78,00	R 156,00
9999163 94	B14	Rawbolt M10 import	packet	1	1	1				R 9,50	R 9,50
2670	A1	Isolator switch 4x2 30A D/pole	each	10	6	6				R 132,30	R 793,80
2445/101P	A1	Cover plate 4x2 steel white	each	10	6	6				R 16,80	R 100,80
AR-A05-14A	C4	Perf . Cable tray	each	2	2	2				R 207,00	R 414,00
6896H	A4	Ct horiz single 16A SSO 4x2	each	10	8	8				R 73,50	R 588,00
6546H	A4	Ct horiz sso coverplate 4x2	each	10	8	8				R 14,70	R 117,60
E14WBC840CW	A13	Lamp flou elec saver 14w	each	40	36	36				R 19,95	R 718,20
Y60PBH	B8	Bulkhead fit 60W-100W PVC BC	each	40	40	38				R 39,95	R 1 518,10
T2M230VAC	A30	Multi range /mins range 230vac	each	40	25	25				R 513,60	R 12 840,00
620222C3		Ball Bearing - 620222C3 - NSK - WD11/38x14x38	each	0	0	0	No			R -	R -
6-294		Bo- cutter Hammer - 6-294-E.T.N. - 80mm, 90kw	each	0	0	0	No			R -	R -
6-288		Bo - cutter hammer - ETN - 180mm, 110kw	each	0	0	0	No			R -	R -
LZ -T -100VA230/2		Bo Transformer -LZ -T -100VA230/2	ea	0	0	0	No			R -	R -

			each								
6	B14	M6 nuts	each	50	50	50				R 0,10	R 5,00
8	B14	M6 x40mm bolts	each	50	50	50				R 0,75	R 37,50
3M-74717	Q	Blue general purpose pvc elec tape 0,18mm	each	10	1	1				R 30,00	R 30,00
3M-74714	Q	Red general pvc elec tape 0,18mm thick	each	10	0	0				R 30,00	R -
3M-74715	Q	White general purpose pvc elec tape 0,18mm	each	10	0	0				R 30,00	R -
3M-74712	Q	Black general purpose pvc elec tape 0,18mm	each	10	0	0				R 30,00	R -
60w-100w		Bulkhead fit 60w-100w Pcv Bc/y60pbh	each	0	0	0	No			R -	R -
XOXG/20X125		Bolts and Nuts	each	0	0	0	No			R -	R -
MRCAP440V16		CAP MOT RUN 16MF 450V TERM/STD	each	0	0	0	No			R -	R -
MRCAP440V50		CAP MOT RUN 40MF 450V TERM/STD	each	0	0	0	No			R -	R -
M4/6	L	4mm terminal	each	100	60	60				R 10,90	R 654,00
M10/10	L	10mm terminal	each	100	0	0				R 24,60	R -
M6/8	L	6mm terminal	each	100	43	43				R 18,50	R 795,50

UK10N	L	Phoenix 10mm terminal	each	100	40	40				R 23,88	R 955,20
MA2,5/5	L	2,5mm terminal	each	100	70	70				R 10,90	R 763,00
MRCAP444V60		CAP MOT RUN 60MF 450V TERM/STD	each	0	0	0	No			R -	R -
1/2"x3.0"		C fan motor - 5 KCP39PGR8325 - Genteg - 4.5A 220V	each	0	0	0	No			R -	R -
AMY-2 180s 230V	E	Maniature timer 230vac 180s	each	10	1	1				R 217,00	R 217,00
A7401	A3	16A switched socket outlet 4x4 c/white	each	10	4	4				R 63,00	R 252,00
PTK20305	2J	Plascon 2k fast hardner	each	10	2	2				R 594,00	R 1 188,00
M35/16	I	35mm terminal	each	20	0	0					R -
f		Circuit Breaker - NF101A - Hager - 230/400V-50/60Hz1A	each	0	0	0	No			R -	R -
MC021005	2J	2K orange	each	20	8	8				R 1 127,00	R 9 016,00
2601P0120	2J	Rhynolox white line roll 70x50m P120	each	10	5	5				R 190,00	R 950,00
PAP002	2J	Paper masking brown	meters	100	0	0				R 13,00	R -
PAP001	2J	Paper masking white	meters	100	33	33				R 11,50	R 379,50
EUROCEL4	2J	Eurocel masking tape blue	ea	100	47	47				R 6,13	R 288,11

			ch								
APU0010700 05A1	2J	Plascon Etch primer	each	10	2	2				R 719,00	R 1 438,00
A9F64320	A12	Schneider 20A circuit breaker	each	40	8	8				R 709,22	R 5 673,76
A9F64132	A	Schneider 32A 1P MCB 5KA	each	10	1	1				R 159,63	R 159,63
A9f64106		Circuit Breaker - NF106A - Hager - 230/400V-50/60Hz1A	each	0	0	0	No			R -	R -
A9f64363	B	Circuit Breaker - A9f64163 63 AMP	each	10	0	0	No			R 759,84	R -
A9f64340	A	40 AMP circuit breaker	each	10	0	0	No			R 747,08	R -
A9f64150	R	Circuit Breaker - A9f64120 50 AMP	each	10	0	0	No			R 177,82	R -
LPJ-15SP	A20	600V 15AMP class j fuse	each	5	4	4				R 55,60	R 222,40
NF20A		Circuit Breaker - NF20A - Hanger - 230/415V-50/60Hz	each	0	0	0	No			R 525,80	R -
0003082000 11	2J	Lacquer thinner GR 5L	litres	50	40	40				R 125,00	R 5 000,00
LAM-1022	B1	Flour 2ft 18W osram	each	100	92	92				R 9,11	R 838,12
FLEX1,5R	SS	Flexible wire 1,5mm red	meters	100	0	0				R 282,10	R -
LC1D25M7	A11	Tele cont 25A 230VAC	each	30	0	0				R 1 263,59	R -
LC1E50U5	G	Schneider contactor 3P 50A TVS	ea	10	2	2				R 1	R 2 981,98

			each							R 490,99	
LC1D32P7	A10	D contactor 32A 1NO+1NC 220VC01	each	6	0	0				R 2 068,68	R -
LC1D18M7	A10	Tele cont 18A 220VAC contactor	each	20	1	1				R 904,79	R 904,79
LC1E3210U5	H	Schneider contactor 3P 32A TVS 1NO15	each	10	0	0				R 876,99	R -
L/969236	C	125A breaker	each	2	1	1				R 805,87	R 805,87
L/969257	N	Lrd340Thermal overload	each	5	0	0				R 1 689,79	R -
LC1D40	JJ	40A 3P contactor	each	5	0	0				R 2 842,11	R -
LC1D95P7	A11	95A contactor	each	5	2	2				R 6 895,61	R 13 791,22
LADN11	K	Aux contact	each	10	7	7				R 257,41	R 1 801,87
LC1E40U5	H	Schneider contactor 3P 40A TVS 18,5KW	each	10	3	4				R 1 207,99	R 4 831,96
LA DANGER 1	S	Danger labels 120x120mm	each	200	150	150				R 2,20	R 330,00
LC1DP40AP7	T	Contactor 40A 220VAC	each	10	1	1				R 2 439,99	R 2 439,99
LB MAIN SWITCH	S	Red on white switch label	each	200	150	150				R 1,00	R 150,00
LC1E40M5	T	Schneider contactor 3P 40A TVS 18,5KW	each	10	0	0				R 1 207,99	R -

E1010 RD	II	Insul bootlace red 1,0mm	pack	5	100	100				R 0,51	R 51,00
E1008-500	II	1mm red bootlace ferrules/500	pack	3	3	3				R 64,00	R 192,00
1S4A	II	Insul lug red 4mm spade	pack	5	100	100				R 0,97	R 97,00
E1510 BK	II	Insul bootlace black 1,5mm	pack	5	100	100				R 0,52	R 52,00
1P10	II	Insul lug red pin	pack	5	100	100				R 0,86	R 86,00
1FB10	II	Insul lug red flat blade	pack	5	100	0				R 1,54	R -
10111 PB	A21	Padlockable handle	each	10	7	7				R 294,10	R 2 058,70
9023 SMA		CLAmp terminal socket - 90.23.SMA - finder -10A -250V	each	0	0	0				R -	R -
20MM SABS	2A	PVC 20mm sabs conduit pipes	each	10	6	6				R 7,96	R 47,76
13002	A16	Fuse 500V 2A	each	20	28	28				R 8,00	R 224,00
13016	A16	Fuse 500V 16A	each	20	20	20				R 8,00	R 160,00
13006	A16	Fuse 500V 6A	each	20	9	9				R 8,00	R 72,00
13010	A16	Fuse 500V 10A	each	20	20	20				R 8,00	R 160,00
13001	A16	Fuse 500V 1A	each	20	20	20				R 8,00	R 160,00
0032408	A2	LX1-FP p 230v 50HZ coil	each	10	0	0				R 821,00	R -

152202	F	PVC shroud no 2	each	10	0	0				R 5,30	R -
152203	F	PVC shroud no 3	each	10	2	2				R 7,70	R 15,40
140024896	A13	Opple cfl 11w E27(light bulb)	each	100	0	0				R 13,50	R -
6x55	F	Nail in anchor	each	500	0	0				R 0,66	R -
0032407	A2	LC1-FDP150A contactor 3phase	each	10	0	0				R 3 101,00	R -
0220H100	2I	22KW (30HP,3 phase ,380-480VAC	each	2	0	0				R 14 323,88	R -
0550H100-4COFN	2I	55KW 3 phase 38-480VAC ,with LCD	each	2	1	1				R 26 341,15	R 26 341,15
0330H100-4COFN	2I	30KW (40HP) 3 phase, 380-480VAC	each	2	0	0				R 17 055,84	R -
0185H100-4COFN	2I	18,5KW (25HD),3 phase ,380-480VAC	each	2	0	0				R 11 366,50	R -
999	2I	22KW (30HP)3 phase	each	2	0	0				R 14 323,88	R -
PGD1000W00	A24	Wall mount graphic display	each	5	2	2				R 3 048,10	R 6 096,20
0015H100-4COFN	2I	1,5KW 3 phase 380-480V AC	each	2	2	2				R 5 238,62	R 10 477,24
JTN60030	A20	JTN Fuse 0-30a	each	5	5	5				R 210,00	R 1 050,00
LC1D09P7		D.COUNT.9A.AC3.1NO	ea	0	0	0	No			R -	R -

			ch								
LC1D18P7		D.COUNT.18A.AC3.1 NO+NC.220VCOIL	each	0	0	0	No			R -	R -
RL10X6	II	Non insulated ring/lug 10x6mm/100	pack	10	0	0				R 181,00	R -
RF505B3	B13	Danfoss suct drier DAS 5/8"	each	1	1	1				R 316,40	R 316,40
LRD22	M	Tele o/l relay 16-24A	each	10	0	0				R 982,79	R -
LRD10	M	Relay 4-6A	each	5	1	1	No			R -	R -
PLX AU 120		Contact Block support AU 120	each	0	0	0	No			R -	R -
LPX C10		Contact Block /LPX C10-Green N/O	each	0	0	0	No			R -	R -
LPX C01		Contact Block/LPX C01-Red N/C	each	0	0	0	No			R -	R -
654/101		Cover Lever 4x2 1 Way White	each	0	0	0	No			R -	R -
140024896	A14	Osr 11watts (60W) B22 cd cool white	each	100	50	50				R 19,38	R 969,00
DINIMSLOT	2G	Din rail 1M slotted mild steel	each	10	0	0				R 32,67	R -
MCED2510-m	G	Contactor 25A	each	10	1	1					R -
DT-200VDC/12	A1	230/12VDC 16A DIN power supply	each	5	0	0				R 1 316,00	R -

DDP2 120m 230VAC	X	Delay off timer 2c/0	each	50	18	19				R 327,00	R 6 213,00
12V AC 3		1SRM	each	0	0	0	No			R -	R -
NB3-63	KK	63A 3P 4,5KA c curve din mcb	each	20	3	3				R 151,00	R 453,00
NB3-50	V	50amp 3p 4,5ka curve	each	20	2	1		1		R 151,00	R 151,00
NB3-40	DD	40amp 3p,4,5ka curve din CB	each	10	4	8				R 107,96	R 863,68
NB3-32	U	32 amp 3p 4,5ka curve din MCB	each	20	0	0				R 141,00	R -
NB3-25	R	C curve circuit breakers 25A 3P	each	30	14	14				R 141,00	R 1 974,00
NB3-20	JJ	20 AMP 4,5KA curve din MCB	each	20	0	0				R 141,00	R -
NB1-6	A5	6Amp 1p 4,5ka curcuit breaker	each	20	16	16				R 36,00	R 576,00
GW92168	HH	3P 16a breaker	each	10	0	0				R 420,00	R -
NB1-16	HH	16A 1P 4,5ka c ciurve din mcb	each	20	4	5				R 36,00	R 180,00
NB1-20	D	20 Amp 1p 4,5ka curve din mcb	each	20	8	9				R 36,00	R 324,00
T25x25	2B	Grey slotted trunking 25wx25H	each	10	4	4				R 35,20	R 140,80
T60x60	2B	Grey slotted trunking 60wx60H	ea	10	6	6				R 99,00	R 594,00

			ch								
T50RBLACK	2K	Cable tie blk 198x4,7mm	pack	10	3	3				R 70,40	R 211,20
TE1512BK	II	Insul bootlace black duo/crimp 1,5mm	pack	10	100	100				R 0,54	R 54,00
T50LBLACK	2K	Cable tie black 395x4,7mm	pack	10	4	4				R 135,80	R 543,20
T18RWHITE	2K	Cable tie wht 104x2,5mm	pack	10	4	4				R 24,06	R 96,24
ZMEM/5	A23	Base for E relays IP20	each	100	54	54				R 52,00	R 2 808,00
MOD3RM		MOD3RM	each	0	0	0	No			R -	R -
ZB4BZ105		Bezel+1NC+1NO Contact Block	each	0	0	0	No			R -	R -
T30 Energise		Delay timer - T30-electro - 230V/60 seconds	each	0	0	0	No			R -	R -
T2D		Delay timer - T2D-electro - 230VAC/400 DC 60 seconds	each	0	0	0	No			R -	R -
8LM2TZL230		Diode Lamp - LM2T2L230 - Lovato - x2 230 VAC x1	each	0	0	0	No			R -	R -
BE-96		Direct AC Ammeter - BE - 96 - BEW - 96mm 60A	each	0	0	0	No			R -	R -
M266		Duct Sealer - M266-pekay - AK1 30-90	each	0	0	0	No			R -	R -
CS1510		Duro flexible plain - 150 - advantage air - silver 10m	each	0	0	0	No			R -	R -
CS2010		Duro flexible plain - 200- advantage air - silver 10m	each	0	0	0	No			R -	R -

CS256		Duro flexible plain - 250 - advantage air - 1200x600mm	each	0	0	0	No			R -	R -
D4/N 230VAC	W	4PDT 5A maniature relay	each	50	29	29				R 89,20	R 2 586,80
CS3010		Duro flexible plain - 300 - advantage act - silver core lom	each	0	0	0	No			R -	R -
LV429338		Extended Std Rotary Handle	each	0	0	0	No			R -	R -
EZ9F53363	E	Schneider Easy9 MCB 3P 63A 3KA 400V	each	20	0	0				R 128,59	R -
EZ9F53116	E	Schneider Easy9 MCB 1P 16A	each	20	0	0				R 38,29	R -
EZ9F53350	E	Schneider Easy9 MCB 50A 3KA 400V	each	20	0	0				R 128,59	R -
EZ9F53106	E	Schneider Easy9 MCB 1P 6A 3KA 230V	each	20	0	0				R 38,29	R -
EB4x2		Extention Box Steel 4x2 open	each	0	0	0	No			R -	R -
LPXC01		LATCH.M/Room Head-Twist Rel/LPXC01	each	0	0	0	No			R -	R -
XALK178		Estop station 40mm twist/rel	each	0	0	0	No			R -	R -
F1382		Egg crates - F1382 - advantage air - 1200x600mm	each	0	0	0	No			R -	R -
MIS55024-00-10		Fans - MIS55024-00-10- Kruger -V/Hz/PH 220 -240/50/1	each	0	0	0	No			R -	R -
W123BL		4,0 blue silicone wire	met	100						R 1	R -

			ers							086,00	
W101R	SS	1,5mm red gp wire 100m	meters	200	0	0				R 331,00	R -
W101BL	SS	1,5mm blue gp wire 100m	meters	200	100	100				R 331,00	R 33 100,00
W101WH	SS	1,5mm white gp wire 100m	meters	200	0	0				R 331,00	R -
F2/1008		Fibreglass Resini - F2/1008 - Luxor - 5.olt	each	0	0	0	No			R -	R -
W124BL	NN	6,0 blue silicone wire	meters	100	68	68				R 1 411,80	R 96 002,40
GAF		Filter - GAF - Filter mark - air dust arrester	each	0	0	0	No			R 450,00	R -
6005919535 40	B6	Welding rods afrox 3,15mm 5k	box	1	1	1				R 320,00	R 320,00
W123R	LL	4,0 red silicone wire	meters	100	100	100				R 1 086,00	R 108 600,00
W123BL	LL	4,0 bluesilicone cable	meters	100	90	90				R 1 086,00	R 97 740,00
W503BR	TT	1,0mm brown flexible wire 100m	meters	100	0	0				R 212,00	R -
W105 - R	PP	10mm red gp wire /100m	meters	100	85	85				R 1 695,00	R 144 075,00
W103BL	QQ	4mm blue gp wire /100m	meters	100	0	0				R 805,00	R -
W503BL	TT	1,0mm blue flexible wire/100m	meters	100	100	100				R 212,00	R 21 200,00

SLI 4,0 red	LL	4,0 red silicone cable	meters	100	100	100				R 1 086,00	R 108 600,00
W124 R	NN	6,0 red silicone cable 100m	meters	100	58	58				R 1 411,80	R 81 884,40
W124 WH	NN	6,0mm white silicone cable 100m	meters	100	68	68				R 1 411,80	R 96 002,40
W124 BL	NN	6,0 blue silicone wire	meters	100	68	68				R 1 411,80	R 96 002,40
W123 BL	LL	4,0 blue silicone cable	meters	100	100	100				R 1 086,00	R 108 600,00
W503 WH	TT	1,0mm white flexible wire/100m	meters	100	100	100				R 212,00	R 21 200,00
W102 Bl	MM	2,5mm blue gp wire /100m	meters	100	100	100				R 516,00	R 51 600,00
W102 WH	MM	2,5mm white gp wire /100m	meters	100	100	100				R 516,00	R 51 600,00
W503 R	TT	1,0mm red flexible wire/100m	meters	100	0	0				R 212,00	R -
W102 R	MM	2,5mm red gp wire /100m	meters	100	95	95				R 516,00	R 49 020,00
W103 WH	QQ	4mm white GP wire /100m	meters	100	100	100					R -
W103 R	QQ	4mm red gp wire /100m	meters	100	100	100				R 805,00	R 80 500,00
W105 WH	PP	10mm white gp wire/100m	meters	100	85	85				R 1 695,00	R 144 075,00
W105 BL	PP	10mm blue gp wire/100m	met	100	0	0				R 1	R -

			ers							695,00	
W104 WH	OO	6mm white gp wire /100m	meters	100	89	89				R 1 225,00	R 109 025,00
W104 R	OO	6mm red gp wire /100m	meters	100	89	89				R 1 225,00	R 109 025,00
W104 BL	OO	6mm blue gp wire /100m	meters	100	83	83				R 1 225,00	R 101 675,00
W503 BK	TT	1,0mm black flexible wire 100m	meters	100	100	100				R 212,00	R 21 200,00
W503 GR	TT	1,0mm grey flexible wire 100m	meters	100	30	30				R 212,00	R 6 360,00
W124 R	NN	6,0 red silicone cable	meters	100	100	100				R 1 411,80	R 141 180,00
W124 WH	NN	6,0 white silicone cable	meters	100	100	100				R 1 411,80	R 141 180,00
023Z1404		Filter drier type C -165 Danfoss - HFC/HCFC/CFC	each	0	0	0	No			R -	R -
FLEX 6MM		Flex 6mm red wire cable	each	0	1	1	No			R 1 040,60	R 1 040,60
F06	II	Non ins ferrules 6mm	pack	10	94	94				R 111,00	R 10 434,00
F10	II	Non ins ferrules 10mm	pack	10	0	100				R 179,00	R 17 900,00
FLEX 4MM		Flex 4mm red wire cable	each	0	1	1	No			R 703,56	R 703,56
2A		Fuse - 2A - Electro-mechanica -250V	each	0	0	0	No			R -	R -
20A		Fuse - 20A - Electro - mechanica - 250V	ea	0	0	0	No			R -	R -

			each								
8A		Fuse-8A - Electro - mechanica - 5x20mm	each	0	0	0	No			R -	R -
15A		Fuse -15A -Electro - mechanica - 250V	each	0	0	0	No			R -	R -
IEC/EN60269		Fuse GL - IEC/EN 60269 - elf electric - 20A 500V	each	0	0	0	No			R -	R -
IEC/EN60269		Fuse GL - IEC/EN 60269 - elf electric - 10A 500V	each	0	0	0	No			R -	R -
GGR0410		R410a Dipossacan 11.3 kg	each	0	0	0	No			R -	R -
10MM		Gaurge cocks BSP	each	0	0	0	No			R -	R -
L18220		L18W20 Tube flow	each	0	0	0	No			R -	R -
14WCDLE27		Globes - 14WCDL E27 - Phillips - 220-240V / 1pf /12	each	0	0	0	No			R -	R -
E14wbc840cw		Lamp saver elec saver	each	0	0	0	No			R -	R -
M2 EP		Grease Yates - M2 EP - Fuchs - 5kg	each	0	0	0	No			R -	R -
HTP1011		HI-FLOWCONDESATE PUMP 2LSUMP	each	0	0	0	No			R -	R -
RFA6001		INS 1/4"ID X 1/4" WALL 6-6	each	0	0	0	No			R -	R -
RFA6002		INS 3/8"ID X 1/4" WALL 6-10	each	0	0	0	No			R -	R -

RFA6003		INS 1/2"ID X 1/4" WALL 6-12/13	each	0	0	0	No			R -	R -
GO 00019		INS 5/8"ID X 1/4" WALL 6-15/16	each	0	0	0	No			R -	R -
KF101/150MM		KF101/150MM Cast	each	0	0	0	No			R -	R -
KF101/200MM		KF101/200MM Cast	each	0	0	0	No			R -	R -
K569/15		KS69/15 AUTOMATIC AIRVENT	each	0	0	0	No			R -	R -
C42 24 VAC		Relay 8 pin round 10A 2c/0	each	10	6	6				R 108,60	R 651,60
EML3603033	2H	22kw 4p 380-415/660V motor	each	1	0	0				R 30 814,00	R -
EML3303033	2H	18,5kw 2p 380v motor	each	1	0	0				R 10 124,00	R -
EML4203033	2H	45kw 4P 380-415 motor	each	2	2	2				R 16 372,95	R 32 745,90
EML3803033	2H	30kw 4P 380-415 motor	each	1	1	0				R 10 798,70	R -
E52/S 24 VDC	M	2PDT PCB relay 5A	each	50	17	20				R 55,20	R 1 104,00
E52/S 24VAC	M	2PDT PCB relay 5A	each	50	12	12				R 69,20	R 830,40
BUV	I	Base 11 pin (oval) IP20	each	20	2	2				R 59,00	R 118,00
E52 /5 230VAC	M	2PDT PCB relay 5A	ea	50	27	27				R 84,90	R 2 292,30

			each								
ZMD4	A17	Base for relay type D4	each	30	30	30				R 49,30	R 1 479,00
ZHRT1-ST/A230	A19	230vac star delta timer 0,1s-100Hr	each	20	14	14				R 705,00	R 9 870,00
ZRUV	I	Relay base 11 pin rectangle blk	each	10	2	2				R 44,00	R 88,00
C42 24VAC	M	Relay 8 pin round 10A 2c/0	each	50	10	10				R 108,60	R 1 086,00
C42 230VAC	M	Relay 8 pin round 10A 2c/0	each	50	4	4				R 86,00	R 344,00
24v 8 pin		8 PIN Relay Miniture	each	0	0	0	No			R 89,76	R -
4co7a 24vac		Plug in Relay 4Co7a 24Vac	each	0	10	10	No			R 69,50	R 695,00
4co7a 230vac		Plug in Relay 4co7a 230vac	each	0	10	10	NO			R 82,58	R 825,80
60.12.8.230.0040		8 PIN Relay 10A-250V	each	0	0	0	No			R 126,50	R -
40282 40000		8A 230V AC COIL	each	0	21	21	No			R 102,96	R 2 162,16
60.12/220VAC		8 PIN Relay 10A-220V	each	0	5	5	No			R 126,50	R 632,50
80MM		80MM MCU cable	each	0	4	4	No			R 515,90	R 2 063,60
MKEL 2230V	J	Pilot light grn 22mm+lamp 230v	each	10	0	0				R 44,00	R -

MKEL 1230V	J	Pilot light red 22mm+lamp 230v	each	10	0	0				R 35,20	R -
MKEL 3230V	J	Pilot light yellow 22mm+Lamp 230V	each	10	0	0				R 35,20	R -
MCU		MCU BACNET/IP-24V	each	0	0	0	No			R 6 700,60	R -
LK10YR	A9	Yellow and red handle for KU	each	10	1	1				R 166,00	R 166,00
L200AD11	A9	200mm ALU shaft	each	10	1	1				R 33,00	R 33,00
KU340N	A9	40A 3p isolator	each	10	1	1				R 230,00	R 230,00
RL25X 10/10	II	Non insul ring lug 25x10mm/10	each	30	10	0		10		R 84,80	R -
CONT/0350/00960	2E	Power pack 36v	each	10	0	0				R 646,00	R -
ACS-2	F	Size 2 pvc shroud	each	8	6	6				R 5,30	R 31,80
ACG-2	F	Size 2 metal gland for armoured cable	each	10	4	24				R 56,00	R 1 344,00
ACG-3	F	Size 3 metal gland for armoured cable	each	10	2	2				R 75,50	R 151,00
CONT/0100/00250	2E	MLM wall controller	each	10	0	0				R 728,00	R -
CABL/0050/00175	2E	Power pack cable	each	20	0	0	No			R 563,00	R -
ICO 10A		Mini pcb relay 40.61 - SA DFI.SN - Finder - 1010A 250V	ea	0	0	0	No			R 60,50	R -

			each								
GW92110	R	1P 25A C 4,5/6KA breaker	each	10	0	0				R 70,00	R -
CG-1	O	Size 1 white pvc compression gland	each	50	30	30				R 2,90	R 87,00
ICO 16A		Mini pcb relay 40.51 - SA.DI.SN - Finder - 16A 250V	each	0	0	0	No			R 27,10	R -
8LP2T 1L224 -Red		Mono block pilot light - 8LP2T IL224 -Lorato - 230V/2.6W max Red	each	0	0	0	No			R 37,70	R -
8LP2T 1L224 -Green		Mono block pilot light - 8LP2T IL224 -Lorato - 230V/2.6W max Green	each	0	0	0	No			R 37,70	R -
DMFT		Multifunction range Timer - DMFT - electro - 10A 250 VAC.00 VAC	each	0	0	0	No			R 410,70	R -
A25CN-9001		A25CN-9001 Over Heat Stsrts,0-100 degre C	each	0	0	0	No			R 1 425,82	R -
C4/1118		Rust Convertor Supreme 5lt	each	0	0	0	No			R 682,00	R -
NITTO WHITE	Q	Nitto white insulation tape	each	10	0	0				R 14,91	R -
NITTO RED	Q	Nitto red insulation tape	each	10	0	0				R 14,91	R -
NITTO BLUE	Q	Nitto blue insulation tape	each	10	0	0				R 14,94	R -
NB02AQ1 - 2Pole		On/off type switch-NB02AQ1-Baco - 50Hz/60Hz 1th20A/AC -21A	each	0	0	0	No			R 152,42	R -
NB03AQ1 - 3Pole		On/off type switch-NB03AQ1-Baco - 50Hz/60Hz 1th20A/AC -21A	each	0	0	0	No			R 172,05	R -

LS0160	II	Lugs4x10	each	100	0	0				R 4,60	R -
LS0450	II	Lugs 50x10 copper	each	100	0	0				R 14,84	R -
LS0130	II	Lugs 4x5	each	100	0	0				R 1,68	R -
LCID65AP7		3P ELINK CONT 220V 65A	each	0	0	0	No			R 3 400,00	R -
LAN02	K	Schneider TVS front contactor 2NC	each	10	1	1				R 100,99	R 100,99
LAEN20	K	Schneider TVS aux front contactor 2NO	each	10	1	1				R 100,99	R 100,99
LRE359	M	Schneider TVS thermal overload relay 48-65a	each	5	2	2				R 695,99	R 1 391,98
RFX3804		Overload RF382300-RFX3804- Lovato - U1690V UIMP6KV	each	0	0	0	No			R 360,50	R -
LRD 365		THERMAL OVERLOAD	each	0	0	0	No			R -	R -
HTP1012		ASPEN MINI AQUA IN LINE CONDENSOR PUMP	each	0	0	0	No			R -	R -
ALED - Y 230VAC	J	Yellow LED pilot light hi brite 22mm	each	50	3	3				R 47,00	R 141,00
ALED - G 230VAC	J	Green pilot light hi brite 22mm	each	50	0	0				R 42,00	R -
ALED - R 230VAC	J	Red pilot light hi brite 22mm	each	50	5	5				R 43,00	R 215,00
LPC S370		3Pos.Spring Ret From L+R	ea	0	0	0	No			R 128,70	R -

			each								
Li-XB7-43		PILOT LIGTHS MCE GREEN-A	each	0	0	0	No			R 55,00	R -
8 LM2T1 L104		Pilot light head - 8 LM2T1L104 - Lovato - 1.2 3 3 Red	each	0	3		No			R 53,00	R -
HE207	2I	Orange panel IP55 1150x850x270	each	2	0	0				R 4 200,00	R -
AC 12AV		Pilot light -AC12V-Lovato -AC230V	each	0	0	0	No			R 47,00	R -
6871		PC board - 687111A000090R - Dun-ham Bush elec control board	each	0	0	0	No			R 209,00	R -
F80		F80 Fenaflex Nat Rubber Tyre	each	0	0	0	No			R 186,02	R -
ZB4BD3		Sel.SW.HD.3POS.STARYP	each	0	0	0	No			R 222,70	R -
IP65 6MM		Square key lock IP65 25MM	each	0	0	0	No			R 31,79	R -
110mm²/S(cst)		Speed Grease-110mm²/S(sct) - BMG - 25 to 180 C/260 C	each	0	0	0	No			R 35,00	R -
FSU/4/80W		Starter FSU/4/80W	each	0	0	0	No			R 2,75	R -
P1/T2611		Stoep paint green - P1/12611 - Plascon - 5lt	each	0	0	0	No			R 486,40	R -
LMTK-3		BO SELCTOR SWITCH ON/OFF AUTO	each	0	0	0	No			R 189,48	R -
DS-405	A27	CT 200m ring 40:5	each	10	0	0				R 132,00	R -

1way 4x2/2471		Switch 1 Lever 2 way 4x2	each	0	0	0	No			R 30,01	R -
GW44209	A25	Enclosure plain sides 300x220x120IP56	each	10	0	0				R 580,00	R -
P1/12631		Stoep paint light grey - P1/12631 - Plascon - 5lt	each	0	0	0	No			R 499,47	R -
SWA16X4/FR	2C	PVC/SWA/16mm x4c	meters	100	40	40				R 125,00	R 5 000,00
SWA10x4/FR	2C	PVC/SWA/PVC 10mmx4c fr	meters	100	0	0				R 96,98	R -
6541	A4	Coverplate	each	1	0	0				R 14,70	R -
QF3(26),80A	HH	Circuit breaker 80A 5KA 26mm	each	1	0	0				R 464,00	R -
2460/6891	A4	Switch isolator	each	1	0	0				R 108,00	R -
0034126	A9	Socomec 125A 3P isolater	each	10	0	0				R 829,25	R -
SWA10x4CU/FR001	2C	PVC /SWA/PVC 10mmx4 core cable	meters	100	0	0				R 96,98	R -
SEA0400300 6	C1	Angle cq 40x40x3mm	each	10	10	10				R 131,95	R 1 319,50
SFB0400300 6	C2	Flat bar cq 40x3mm 6mtr	each	5	5	5				R 75,70	R 378,50
SHR0201225 2450	C3	HR sheet cq 2450x1225x2	each	10	9	9				R 649,84	R 5 848,56
TTS0380300 06	C4	Sq /Tube 38x38x3,0-6m	ea	40	37	37				R 338,35	R 12 518,95

			each								
SCH0760380 06	C5	Channel cq 5,7kg 76x386m	each	1	0	0				R 500,57	R -
VG6210JC IDN 20		Surf/Din socket black - ES11 - Ersce -10A 300VAC/12A 150 VAC	each	0	0	0	No			R 26,47	R -
SQ96SP 40/5A	A26	Scale plate	each	10	0	0				R 17,00	R -
SQ96-40AD	A29	Ammeter 40ac direct connected	each	10	1	1				R 266,00	R 266,00
SQ96-5	A25	Ammeter AC ct driven w/o scale	each	10	3	3				R 243,00	R 729,00
SURF 2,5X2 WHT	RR	Coil surfix 2,5mmx2c white 10m	meters	100	10	10				R 17,38	R 173,80
SURF 2,5x2 WHITE	RR	Coil surfix 2,5mmx2c white 100m	meters	100	53	53				R 1 466,16	R 77 706,48
SFl 4000 vac		P/Filer Relays	each	0	0	0	No			R 235,95	R -
017024G368		VLT HVAC DRIVE 45KW	each	2	0	0				R 52 142,40	R -
017006H358		VLT HVAC drive	each	5	1					R 74 345,04	R -
VG6210JC IDN 15		Two way valve - VG6210 JC/DN20 - DN20 pin 16	each	0	0	0	No			R 2 908,78	R -
R/ST-12	P	Push button STN e-stop (twist to release)	each	10	1	1				R 222,00	R 222,00
RSA0011		Two way valve - VG6210 JC/DN20 - DN15 pin 16	each	0	1	1	No			R 2 908,78	R 2 908,78

PN16, DN32, Kvs,16		Two way valve - VG7401PT PN 16,DN32,Kvs.16	each	0	0	0	No			R 4 279,22	R -
RB944-14F	W	230VAC 5A 14 pin mini relay 4 c/o	each	10	9	9				R 48,00	R 432,00
RB2-BZ103	N	2 N/O contat block + base	each	10	3	3				R 81,00	R 243,00
RB2-BD2	N	2 post maint short sel sw head	each	20	18	18				R 121,00	R 2 178,00
RB750-08R	I	8 pin relay base rectangle type blue	each	100	50	50				R 45,00	R 2 250,00
RM/ST-12	P	D cast pushbutton STN E-stop (latch)	each	10	5	6				R 518,00	R 3 108,00
R5504-024VACL	W	24VAC 5A 14pin mini relay +LED	each	30	28	28				R 74,00	R 2 072,00
R5504-024VDCL	W	24VDC 14 pin mini relay + LED	each	30	27	27				R 74,00	R 1 998,00
RSA0013		Tube CU SD 1/4" 6.35mm 15.24M	each	0	0	0	No			R 403,70	R -
RSA0014		Tube CU SD 3/8" 9.53mm 15.24M	each	0	0	0	No			R 616,00	R -
RSA0015		Tube CU SD 1/2" 12.7mm 15.24M	each	0	0	0	No			R 995,50	R -
TC1-D1810U	Z	7,5kw 400v 18A 3P contactor 1No 240VAC	each	3	3	3				R 352,00	R 1 056,00
TC1-D2510U	BB	11kw 400v 25a 3p contactor 1NO 240VAC	each	7	4	5				R 514,00	R 2 570,00
TC1-D1210U	CC	5,5kw 400v 12a contactor 1No 240VAC	ea	20	5	5				R 229,00	R 1 145,00

			each								
TC1-D0910U	FF	4kw 400v 9A 3P contactor 1NO 240VAC	each	20	13	13				R 219,00	R 2 847,00
TA1-DN11	K	Top mount aux 1n/0+1n/c	each	20	7	7				R 76,00	R 532,00
TA1-DN22	K	Top mount aux 2n/+2n/c	each	20	11	11				R 133,00	R 1 463,00
TC1-D3210U	EE	18,5kw 400v 32A 3p contactor 1no 240vac	each	20	0	0				R 725,00	R -
TC1-D40U	GG	18,5kw 400v 3p contactor 1no+1nc	each	20	6	6				R 1 068,00	R 6 408,00
TC1-D50 U	AA	22kw 400v 50A 3p contactor 1no+1nc	each	20	4	4				R 1 238,00	R 4 952,00
TR2-D32355	A28	28-36A thermal overload relay	each	10	10	10				R 710,00	R 7 100,00
TR2-D65357	A7	46-65A thermal overload	each	20	7	7				R 776,00	R 5 432,00
TR2-D65359	A8	48-65A thermal overload relay	each	10	7	7				R 1 055,00	R 7 385,00
TR2-D25332	M	17-25A thermal overload relay	each	10	1	1				R 471,00	R 471,00
TS-6370D-C13	2F	Sensor 0-10V to 40d 290	each	10	0	0				R 1 216,08	R -
RFA6000		Tube CU SD 5/8" 15.88mm 15.24M	each	0						R 1 216,08	R -
100/0/500		Multigrate Lubricant Oil	each	0	1	1	No			R 1 201,20	R 1 201,20

20MM FLXTR SAD	O	PVC 20mm strap saddle	each	30	0	0				R 0,55	R -
20MM COUP LING	O	PVC 20mm coupling	each	30	0	0				R 0,22	R -
20MM ALEA DT	O	PVC 20mm male adaptor	each	20	0	0				R 0,35	R -
20MM SABS	2A	PVC 20mm sabs conduit 4m	each	20	6	6				R 7,96	R 47,76
ML743 0E100 5		vaccum pump oil	each	0	0	0	No			R 1 716,0 0	R -
10033 222		SDPI 30s 230vac star/delta timer	each	5	0	0	No			R 224,0 0	R -
DP1 30s 230VA C	X	Timer delay on 1c/0	each	10	0	0				R 190,0 0	R -
SDP1 30s 230VA C	Y	Star /delta timer 30s	each	30	3	3				R 220,0 0	R 660,00
SLI2,5 blue	M M	Silicone wire 2,5 blue	each	10 0	90	90					R -
SLI 2,5 white	M M	Silicone wire 2,5mm white	meters	10 0	100	10 0				R 9,65	R 965,00
SLI 4,0 red	LL	Silicone wire 4,0 red	meters	10 0	100	10 0				R 15,44	R 1 544,00
SLI 2,5 Red	M M	Silicone wire 2,5 red	meters	10 0	100	10 0				R 9,65	R 965,00
100/0/ 500		Valve -ML7430E1005 - Honewell - 24V 50Hz 4VA 1p54	each	0	0	0				R 9,65	R -
SLOT8 0x60	2B	Trunking slotted W80xh60 narrow	ea	10	2	2				R 99,00	R 198,00

			ch								
SLOT60x40	2B	Trunking slotted W60xH40 narrow	each	10	2	2				R 70,88	R 141,76
SLOT40x40	2B	Trunking slotted W40xH40 narrow	each	10	2	2				R 66,04	R 132,08
WALL 4x2	A3	Wall box 4x2 galvanized	each	10	8	8				R 3,42	R 27,36
VB1353	A6	16A 3P 1-0-2 door mount c/o switch	each	20	7	7				R 193,00	R 1 351,00
VB10NX1080f	2D	SPZ 1080 fenner wedge belt	each	20	10	10	No			R 26,12	R 261,20
VB10NX1250	2D	SPZ 1250 fenner wedge belt rex	each	20	10	10	No			R 29,46	R 294,60
VB10NX1320f	2D	SPZ 1320 f -pitch length	each	20	10	10	No			R 29,79	R 297,90
VB10NX1340F	2D	SPZ 1340 fenner wedge belt	each	20	10	10	No			R 28,90	R 289,00
VB10NX1400	2D	SPZ 1400	each	20	10	10	No			R 34,05	R 340,50
VB10NX1520	2D	SPZ 1520 fenner wedge belt	each	20	10	10	No			R 37,11	R 371,10
VB10NX1600	2D	SPZ 1600 fenner wedge belt	each	20	20	20				R 39,07	R 781,40
VB13NX1700	2D	SPA 1700 fenner wedge belt	each	20	10	10	No			R 41,68	R 416,80
VB13NX1800F	2D	SPA 1800- Fenner - wedge belt	each	20	10	0	No			R 49,83	R -

VB10NX1900F	2D	SPZ 1900 fenner wedge belt	each	20	20	20				R 45,92	R 918,40
VB10NX1900F	2D	SPZ 1900 fenner wedge belt	each	20	10	10	No			R 51,82	R 518,20
VB13NX2300f	2D	SPA 2300 fenner w/belts	each	20	10	0	No			R 62,83	R -
VB13NX1600	2D	SPA 1600 fenner wedge belt	each	20	10	10	No			R 43,93	R 439,30
VB13NX2120F	2D	SPA 2120 fenner wedge belt	each	20	10	10	No			R 57,80	R 578,00
VB10NX1700	2D	SPZ 1700 fenner wedge belt	each	20	20	20	No			R 37,20	R 744,00
VB10NX1800	2D	SPZ 1800 fenner wedge belt	each	20	10	10	No			R 38,83	R 388,30
VBN10NX1500	2D	SPZ 1700 fenner wedge belt	each	20	10	10				R 36,50	R 365,00
VB13NX2240	2D	SPA 2240 fenner wedge belt	each	20	10	10	No			R 60,97	R 609,70
13X1625		V-Belt - 1625- Fenner - Heat Resistant	each	0	0	0	No			R 44,00	R -
13X1650		V-Belt - 1650- Fenner - Heat Resistant	each	0	0	0	No			R 40,00	R -
13X2667		V-Belt - 2667- Fenner - Heat Resistant	each	0	0	0	No			R 51,72	R -
SPA850		V-belt - SPA 850 - Fenner - Heat Resistant	each	0	0	0	No			R 58,00	R -
SPA1000		V-belt - SPA 1000 - Fenner - Heat Resistant	ea	0	0	0	No			R 36,04	R -

			each								
SPA1120		V-belt - SPA 1120 - Fenner - Heat Resistant	each	0	0	0	No			R 39,52	R -
SPA1250		V-belt - SPA 1250 - Fenner - Heat Resistant	each	0	0	0	No			R 38,81	R -
SPA1200		V-belt - SPA 1200 - Fenner - Heat Resistant	each	0	0	0	No			R 42,92	R -
VB10NX1600		SPZ 1600 fenner wedge belt	each	20	10	0	No			R 39,07	R -
SPA1800		V-belt - SPA 1800 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
VB13NX1900F		SPA 1900 fenner wedge belt	each	20	10	0	No			R 51,82	R -
SPA200		V-belt - SPA 2000 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
VB13NX2120		SPA 2120 fenner wedge belt	each	0	0	0	No			R 67,61	R -
SPA2240		SPA 2240 fenner wedge belt	each	0	0	0	No			R -	R -
SPA2500		V-belt - SPA 2500 - Fenner - Heat Resistant	each	10	10	0	No			R 62,83	R -
SPA2650		V-belt - SPA 2650 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
SPA2800		V-belt - SPA 2800 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
SPA2840		V-belt - SPA 2840 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -

B30/17 X770		V- Belt - B30/17x770 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B30/17 X900		V- Belt - B30/17x900 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B30/17 X925		V- Belt - B30/17x925 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B30/17 X965		V- Belt - B30/17x965 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B44/17 X1120		V- Belt - B44/17x1120 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B62/17 X1575		V - Belt -B62/17x1575 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B30/17 X1215		V- Belt - B30/17x1215 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B76/17 X1930		V - Belt _ B76/17x1930 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B55/17 x1400		V - Belt - B55/17x1400 - Fenner - Heat - Resistant	each	0	0	0	No			R -	R -
B56/17 X1430		V - Belt _ B56/17x1430 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B57/17 X1450		V- Belt - B57/17x1450 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B83/17 X2100		V- Belt - B83/17x2100 - Fenner - Heat Resistant	each	20	10	0	No			R 37,20	R -
B85/17 X2160		V- Belt - B85/17x2160 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B80/17 x2042		v- Belt - B80/17x2042 - Fenner - Heat Resiistance	ea	0	0	0	No			R -	R -

			each								
B92/17X2210		V- Belt - B92/17x2210 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B86/17X2200		V- Belt - B86/17x2200 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B94/17X2337		V- Belt - B94/17x2337 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B56/17X2438		V-Belt - B56/17x2438 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B93/172370		V - Belt - B93/17x2370 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B97/17X2470		V- Belt - B97/17x2470 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B98/17X2500		V- Belt - B98/17x2500 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B100/17x2540		V - Belt - B100/17x2540 - Fenner Heat Resistant	each	0	0	0	0			R -	R -
B99/17X2515		V- Belt - B99/17x2515 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B105/17X2670		V- Belt - B105/17x2670 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B82/17X2083		v - Belt - B82/17x2083 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B81/17X2060		v - Belt - B81/17x2060 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
B108/17X2750		V- Belt - B1085/17x2750 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -

FC-102-HAVAC		FC-HVAC-4.1KW-380-480 VOITIP 20	each	0	0						R -
SPZ 850		V-Belt - SPZ 850-Fenner - Heat and Oil Resistant	each	0	0	0	No			R -	R -
B118/17X3000		V- Belt - B118/17x3000 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
SPB1340		V- Belt - SPB 1340-Fenner - Heat Resistant	each	0	0	0	No			R -	R -
SPB2400		V-Belt - SPB 2400 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
VB10NX1800		SPZ 1800 fenner wedge belt	each	0	0	0	No			R -	R -
C22X3810		V- Belt - C22x3810 - Fenner - Heat Resistant	each	20	10	0	No			R 38,83	R -
C22X2450		V-Belt - C22x2450 - Fenner - Heat Resistant	each	0	0	0	No			R -	R -
TP41 - 5TR		Yellow paint -TP41-5TR - Plascon -5lt	each	0	0	0	No			R -	R -
			each	0	0	0	No			R 145,25	R -
										Total	R 2 881 002,04

ANNEX L

ACSA maintenance procedure for HVAC

- Available upon request from the ACSA service manager

ANNEX M

ACSA IMC procedure for call out and work orders

Available upon Request from the ACSA service manager

ANNEX N

Internal and external factors

Below is a list of internal and external factors which may affect equipment availability and are beyond the contractor's control:

	Type	Comment
External resources	Utilities •Water •Electricity •Gas •IT Support and other interfaces outside the contractor battery limit	-No impact to reliability/Maintainability. -It Impact on availability from operations view
External causes	•Outside Operating conditions/parameters •Operator fault/incorrect operation, consider shifting the risk to the Service provider by giving him responsibility to support Operations/Operators •Damage by others(users and Third parties) i.e. Elevator doors •Incorrect use •Foreign material is system	-No impact to reliability/Maintainability. -Impact on availability from operations view This are some of the occurrences that may not be considered the Normal Operating conditions
Other	•Lack of information/Drawings •Lack of access due to no fault of the contractor after they have requested acess timeosly •Equipment's under Projects •Other factors that can be proven that was beyond the contractor's fault	
Spares	Availability of spares (if the spares are not under the control of the Service provider to the limit of the budget)	-Affect Maintainability

	Typically: It is the responsibility of the Client to ensure adequate administration and re-order spares timely, It is the responsibility of the service provider to ensure that the stores administration is done and minimum stock levels are adhered to, the request to buy spare are replenished are done on time intime	No impact on service provider. The Risk is not sitting with a single owner

ANNEX O

ACSA Mechanical Standardised Minimum: legal requirements and minimum competency requirements

Site Supervisor	• SAQA Acrredited Trade test Electrician/Control and Instrumentation • OHS Training certificate	• Min 3 years experience post trade test qualification • 2 years supervisory Experience • Min 2 years OHS experience	
Control Technicians	SAQA Accredited Control and or Instrumentation Trade test certificate OR N5 In controls and or Instrumentation	Min 3 years experience post trade test qualification and 2 years must be on the maintenance of Control panels, PLCs, SCADA, VSDs, sensors, Controllers and solid understanding of electronic communication protocols	
Lead Electrician	• SAQA Acrredited Trade test (Electrician) • Master Installation Electrician licence		• Registration with the Department of Labour as an Electrical Contractor
Electricians	• SAQA Acrredited Trade test (Electrician)		
assistants	Electrical N2		
Independet assurance Control Engineer (For adhoc Quartely system integrity assurance)	• BSC/BENG Electronic Engineering/Mechatronics + PrEng registration; or • BTECH Electronics Engineering/Mechatronics + PrTech		

ANNEX P

ACSA Inventory procedure

Available upon Request from the ACSA service manager