AIRPORTS COMPANY
SOUTH AFRICA

TENDER REFRENCE NUMBER: CTIA7821/2025/RFP

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

TITLE OF PROJECT: MAINTENANCE AND REPAIRS OF MECHANICAL, SMOKE VENTS, ELECTRICAL AND CONTROLS HVAC (HEATING, VENTILATION AND AIR-CONDITIONING) SYSTEMS AT CTIA FOR THE PERIOD OF SIXTY (60) MONTHS

NEC 3: TERM SERVICE CONTRACT (TSC)

Between	**AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED**
	Applicable at CAPE TOWN INTERNATIONAL AIRPORT
	(Registration Number: 1993/004149/30)
and	……
	(Registration Number: ……)
for	**MAINTENANCE AND REPAIRS OF MECHANICAL, SMOKE VENTS, ELECTRICAL AND CONTROLS HVAC (HEATING, VENTILATION AND AIR-CONDITIONING) SYSTEMS AT CTIA FOR THE PERIOD OF SIXTY (60) MONTHS**

Contents:

PART C1: AGREEMENT AND CONTRACT DATA

C1.1 Form of Offer and Acceptance

Offer

The employer, identified in the acceptance signature block, wishes to enter into a contract for **MAINTENANCE AND REPAIRS OF MECHANICAL, SMOKE VENTS, ELECTRICAL AND CONTROLS HVAC (HEATING, VENTILATION AND AIR-CONDITIONING) SYSTEMS AT CTIA FOR THE PERIOD OF SIXTY (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 of the obligations and liabilities of the Contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

The offered total of the prices (**INCLUSIVE OF VAT**) is: ……………………………………………….

…………………………………………………………………………………………………… (in words);

R ……………………………………… (in figures)
(please complete in figures and in words)

for the contractor

Signature . . . . Date . . . .

Name . . . . Capacity . . . .

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

Name and signature of witness . . . .

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

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 tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this 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 Service manager (to be confirmed) 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.

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

for the Employer

Signature . . . . Date . . . .

Name . . . . Capacity . . . .

Airports Company South Africa,

Cape Town International Airport

Southern Office Block, Administration Building

7525

Name and signature of witness . . . .

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 tenderer and the employer during this process of offer and acceptance.

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

	For the Employer	**For the Contractor**
Signature (s)		
Name (s)		
Capacity		

Name and Address	Airports Company South Africa (ACSA) SOC, Cape Town International Airport, Private Bag X9002, Cape Town, 7525	
Name & Signature of witness		
Date		

C1.2 Contract Data

Part one - 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**
	and secondary Options:	
		X1 Price Adjustment for inflation
		X2 Changes in the law
		X7 Delay Damages
		X17 Low Service damages
		X18: Limitation of Liability (as amended in Option Z)
		X19: Task Order
		X20: Key Performance
		Z: Additional conditions of contract
	of the NEC3 Term Service Contract (April 2013)	
10.1	The *Employer* is (Name):	**Airports Company South Africa SOC Limited**
	Address	Cape Town International Airport Southern Office Block, Administration Building 7525
10.1	The *Service Manager* is:	TBC
11.2(1)	The *Accepted Plan* is	**Included in Part C3 of this document, including Annexes thereto as submitted by the Contractor and accepted by the Service Manager.**
11.2(2)	The *Affected Property* is	Cape Town International Airport
11.2(13)	The *Service* is	**MAINTENANCE AND REPAIRS OF MECHANICAL, SMOKE VENTS, ELECTRICAL AND CONTROLS HVAC (HEATING, VENTILATION AND AIR-CONDITIONING) SYSTEMS AT FOR THE PERIOD OF SIXTY (60) MONTHS** and all its related components, **as set out in part C3 *service information*.**

11.2(14)	The following matters will be included in the Risk Register	OHS Act and New Construction Regulation compliance.
11.2(15)	The *Service Information* is in	**The section titled Service Information included as Part C3 of this document.**
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**
21.1	The period within which the Contractor provides the Contractor's Plan	**30 calendar days from Contract Start Date**

2	**The Contractor's main responsibilities**	**Detailed in Part C3 (Service Information)**
3	**Time**	
30.1	The *starting date* is	**Upon the date of signature of the contract by ACSA**
30.2	The *Service Period* is	**Sixty (60) months from the *starting date***
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	**Two (2) weeks**
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	**Title**	**No data is required for this section of the *conditions of contract.***
8	**Risks and insurance**	**Refer to Part C1.4**

83.2	The minimum amounts of cover or minimum limits of indemnity required for the insurance table	**Refer to Part C1.4**
9	**Termination**	**No data is required for this section of the *conditions of contract.***
10	**Data for main Option clause**	
A	**Priced contract with price list**	**Refer to Part C2**
11	**Data for Option W1**	
W1.1	The Adjudicator is	**The person appointed jointly by the parties from the list of adjudicators contained below**
W1.2	The Adjudicator nominating body is	**The current Chairman of Johannesburg Advocate's Bar Council**
W1.4	The tribunal is	**Arbitration**
W1.4	If the tribunal is arbitration, the arbitration procedure is	**The arbitration procedure is set out in The Rules for the Conduct of Arbitrations 2013 Edition, 7th Edition, published by The Association of Arbitrators, (Southern Africa)**
W1.4	The place where arbitration is to be held is	**Johannesburg, South Africa.**
W1.4	The person or organization who will choose an arbitrator	**The Arbitrator is the person selected by the Parties as and when a dispute arises in terms of the relevant Z Clause, from the Panel of Arbitrators provided under the relevant Z clause if the arbitration procedure does not state who selects an arbitrator. The Arbitrator nominating body is the Chairman of the Johannesburg Advocates Bar Council.**
12	**Data for secondary Option**	
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* as stated under section 30.1. Price adjustment for inflation shall only take place on contract anniversary**
X2	**Changes in the law**	**No data is required for this secondary option.**
X7	**Delay Damages**	**As per the Service Information (C3)**
X17	**Low Service damages**	

		If the Contractor produces substandard work the Employer can **-insist the Contractor to corrects the Defects to provide the quality specified in the service information** **-recover the cost of having it corrected by other people if the Contractor fails to correct the Defect within the specified time or** **- accept the Defect and a quotation from the Contractor for reduced Prices in return for a change to the service information**
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 losses incurred and/or repairs to the damages caused**
X18.3	The Contractor's total liability to the Employer for defects due to his design which are not listed on the Defects Certificate is limited to	**The total of the losses incurred and/or repairs to the damages caused**
X18.4	The Contractor's total liability to the Employer for all matters arising under or in connection with this contract, other than excluded matters, is limited to	**The Contractor's total direct liability to the Employer for all matters arising under or in connection with this contract, other than the excluded matters, is limited to the total of the losses incurred and/or repairs to the damages caused 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**
X19	**Task Order**	
		This Option can be used when all the services to be provided under the contract are to be instructed by Task Order, or when other services are being provided under the contract, and Tasks are added as necessary. For example, Ad hoc works
X20	**Key Performance Indicators**	

X20.1 to X20.5	**Key Performance Indicators (KPIs) are being increasingly used as a means of improving efficiency and encouraging better performance by contractors with a view to continues improvement. KPIs are provided for in Option X12 where partnering arrangements are in place. This Option X20 can be used when Option X12 is not used. The procedure in Option X20 requires the establishment of performance targets and regular reporting by the Contractor of his performance measured against the KPIs.**

Z	**The *Additional conditions of contract* are Z1 – Z19**
	Amendments to the Core Clauses
Z1	Interpretation of the law
Z1.1	**Add to core clause 12.3:** Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Service Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.
Z2	**Providing the Service:**
Z2.1	**Delete core clause 20.1 and replace with the following:** 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.
Z5	**Termination**
Z5.1	**Add the following to core clause 91.1, at the second main bullet, fifth sub-bullet point, after the words "assets or":** "business rescue proceedings are initiated or steps are taken to initiate business recue proceedings"**.**
	Amendment to the Secondary Option Clauses
Z7	**Limitation of liability:**
Z7.1	**Insert the following new clause as Option X18.6:** The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00
Z7.2	Notwithstanding any other clause in this contract, any proceeds received from any insurances or any proceeds which would have been received from any insurances but for the conduct of the *Contractor* shall be excluded from the calculation of the limitations of liability listed in the contract
	Additional Z Clauses
Z8	**Cession, delegation and assignment**
Z8.1	The *Contractor* shall not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*, which consent shall not be unreasonably withheld. This clause shall be binding on the liquidator/business rescue practitioner /trustee (whether provisional or not) of the *Contractor*
Z8.2	The *Employer* may cede and delegate its rights and obligations under this contract to any person or entity
Z9	**Joint and several liability**
Z9.1	If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons, these persons are deemed to be jointly and severally liable to the *Employer* for the performance of the Contract.

Z9.2	The *Contractor* shall, within 1 week of the Contract Date, notify the *Service Manager* and the *Employer* of the key person who has the authority to bind the *Contractor* on their behalf.
Z9.3	The *Contractor* does not materially alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without prior written consent of the *Employer*.
Z10	**Ethics**
Z10.1	The *Contractor* undertakes:
Z10.1.1	not to give any offer, payment, consideration, or benefit of any kind, which constitutes or could be construed as an illegal or corrupt practice, either directly or indirectly, as an inducement or reward for the award or in execution of this contract;
Z10.1.2	to comply with all laws, regulations or policies relating to the prevention and combating of bribery, corruption and money laundering to which it or the *Employer* is subject, including but not limited to the Prevention and Combating of Corrupt Activities Act, 12 of 2004.
Z10.2	The *Contractor*'s breach of this clause constitutes grounds for terminating the *Contractor*'s obligation to Provide the Works or taking any other action as appropriate against the *Contractor* (including civil or criminal action). However, lawful inducements and rewards shall not constitute grounds for termination.
Z10.3	If the *Contractor* is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices, including but not limited to the making of offers (directly or indirectly), payments, gifts, gratuity, commission or benefits of any kind, which are in any way whatsoever in connection with the contract with the *Employer*, the *Employer* shall be entitled to terminate the contract in accordance with the procedures stated in core clause 92.2. the amount due on termination is A1.
Z11	**Confidentiality**
Z11.1	All information obtained in terms of this contract or arising from the implementation of this contract shall be treated as confidential by the *Contractor* and shall not be used or divulged or published to any person not being a party to this contract, without the prior written consent of the *Service Manager* or the *Employer*, which consent shall not be unreasonably withheld.
Z11.2	If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the *Service Manager*.
Z11.3	This undertaking shall not apply to –
Z11.3.1	Information disclosed to the employees of the *Contractor* for the purposes of the implementation of this agreement. The *Contractor* undertakes to procure that its employees are aware of the confidential nature of the information so disclosed and that they comply with the provisions of this clause;
Z11.3.2	Information which the *Contractor* is required by law to disclose, provided that the *Contractor* notifies the *Employer* prior to disclosure so as to enable the *Employer* to take the appropriate action to protect such information. The *Contractor* may disclose such information only to the extent required by law and shall use reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed;
Z11.3.3	Information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time);
Z11.4	The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Service Manager*. All rights in and to all such images vests exclusively in the *Employer*
Z11.5	The *Contractor* ensures that all his Subcontractors abide by the undertakings in this clause.
Z12	***Employer*'s Step-in rights**

Z12.1	If the *Contractor* defaults by failing to comply with his obligations and fails to remedy such default within 2 weeks of the notification of the default by the *Service Manager*, the *Employer*, without prejudice to his other rights, powers and remedies under the contract, may remedy the default either himself or procure a third party (including any subcontractor or supplier of the *Contractor*) to do so on his behalf. The reasonable costs of such remedial works shall be borne by the *Contractor*
Z12.2	The *Contractor* co-operates with the *Employer* and facilitates and permits the use of all required information, materials and other matter (including but not limited to documents and all other drawings, CAD materials, data, software, models, plans, designs, programs, diagrams, evaluations, materials, specifications, schedules, reports, calculations, manuals or other documents or recorded information (electronic or otherwise) which have been or are at any time prepared by or on behalf of the *Contractor* under the contract or otherwise for and/or in connection with the *works*) and generally does all things required by the *Service Manager* to achieve this end.
Z13	**Liens and Encumbrances**
Z13.1	The *Contractor* keeps the Equipment used to Provide the Services free of all liens and other encumbrances at all times. The *Contractor,* vis-a-vis the *Employer,* waives all and any liens which he may from time to time have, or become entitled to over such Equipment and any part thereof and procures that his Subcontractors similarly, vis-a-vis the *Employer,* waive all liens they may have or become entitled to over such Equipment from time to time
Z14	**Intellectual Property**
Z14.1	Intellectual Property (“IP”) rights means all rights in and to any patent, design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works.
Z14.2	IP rights remain vested in the originator and shall not be used for any reason whatsoever other than carrying out the *works.*
Z14.3	The *Contractor* gives the *Employer* an irrevocable, transferrable, non-exclusive, royalty free licence to use and copy all IP related to the *works* for the purposes of constructing, repairing, demolishing, operating and maintaining the works
Z14.4	The written approval of the *Contractor* is to be obtained before the *Contractor*'s IP made available to any third party which approval will not be unreasonably withheld or delayed. Prior to making any *Contractor*'s IP available to any third party the *Employer* shall obtain a written confidentiality undertaking from any such third party on terms no less onerous than the terms the *Employer* would use to protect its IP
Z14.5	The *Contractor* shall indemnify and hold the *Employer* harmless against and from any claim alleging an infringement of IP rights (**“the claim”**), which arises out of or in relation to:
Z14.5.1	the *Contractor’s* design, manufacture, construction or execution of the Works
Z14.5.2	the use of the *Contractor’s* Equipment, or
Z14.5.3	the proper use of the Works.
Z14.6	The *Employer* shall, at the request and cost of the *Contractor*, assist in contesting the claim and the *Contractor* may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it.
Z15	**Dispute resolution:**
Z15.1	**Appointment of the Adjudicator**

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

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

Panel of Adjudicators

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

Z15.2 Appointment of the Arbitrator

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

Panel of Arbitrators

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

Z16 Notification of a compensation event

Z16.1 Delete "eight weeks" in clause 61.3 and replace with "four weeks". Delete the words "unless the event arises from the Service Manager or the Supervisor giving an instruction, issuing a certificate, changing an earlier decision or correcting an assumption.

Z17 BBBEE and Tax Clearance Certificates

Z17.1 The *Contractor* shall be expected to annually present a compliant BEE Certificate and a Tax clearance Certificate. Failure to do adhere to these requirements shall be considered a material breach of the conditions of this Contract, the sanction for which may be a cancellation of this Contract.

Z18 Communication

Z18.1	**Add a new Core Clause** 14.5 and 14.6 to read as follows: The *Service Manager* requires the written consent of the Employer if an action will result in a change to the design, scope, and Service information that is 5% or more
Z18.2	The *Service Manager* requires the written consent of the Employer if an action will result in the Completion Date being extended by more than 30 days.
Z19	**Delegation**
	As stipulated by Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993 as amended the *Contractor* agrees to the following:
Z19.1	As part of this contract the *Contractor* acknowledge that it (mandatory) is an employer in its own right with duties as prescribed in the Occupational Health and Safety Act No 85 of 1993 as amended and agree to ensure that all work being performed, or Equipment, Plant and Materials being used, are in accordance with the provisions of the said Act, and in particular with regard to the Construction Regulations.

PART C1.2b CONTRACT DATA

PART TWO – DATA PROVIDED BY THE *CONTRACTOR*

Clause	Statement	Data
10.1	The Contractor is (Name):	
	Company Registration Number	
	Company VAT Number	
	Address	
	Telephone no.	
	Fax No.	
11.2	The *working areas* are	See C3 'Service Information'
24.1	The *Contractor's Key people* are:	**CV's to be appended to Resource Proposal (FORM C7)**
1	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
2	**Role:**	
	Name:	
	Qualifications relevant to this contract	

	Experience	
3	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
4	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
5	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
6	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
7	**Role:**	
	Name:	
	Qualifications relevant to this contract	

	Experience	
8	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
9	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
10	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	
11	**Role:**	
	Name:	
	Qualifications relevant to this contract	
12	**Role:**	

	Name:	
	Qualifications relevant to this contract	
	Experience	
13	**Role:**	
	Name:	
	Qualifications relevant to this contract	
	Experience	

11.2	The following matters will be included in the Risk Register	• Existing Services (Meeting SLA) • Access to Site • Delay in supply of material and/or equipment • Delays in execution of Ad hoc repairs • Use of tools and attaining permits for hot works and unplanned maintenance work • Travelling public and ACSA stakeholders • Staff complement. • Non-adherence to safety requirements • Risk of financial loss and/or injury of persons due to the proximity of the service (or of persons performing the service, or of moving/stationary vehicles) to moving and stationary aircraft • Health risk and/or risk of injury/death due to exposure of persons to poisonous and flammable substances and gases • Risk of injury due to lifting of heavy objects or falling on heights

PART C1: AGREEMENTS AND CONTRACT DATA

C1.3: OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

OCCUPATIONAL HEALTH AND SAFETY MANDATARY AGREEMENT

1 AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH & SAFETY ACT (ACT 85 Of 1993), AS AMENDED & 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), as amended and its regulations and
2. The Compensation for Occupational Injuries & Diseases Act (Act 130 of 1993) also known as the (COID Act).
3. Construction Regulations 2014

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

The parties to this Agreement are:

Name of Organisation: **AIRPORTS COMPANY SOUTH AFRICA" ACSA"**
Physical Address: Airport Company South Africa **The Maples, Riverwoods, 24 Johnson Road, Bedfordview, Gauteng, South Africa, 2008** **P O Box 75480, Gardenview, Gauteng, South Africa, 2047**

Hereinafter referred to as "Client"

Name of organisation:
Physical Address

Hereinafter referred to as "the Mandatary/ Principal Contractor"

MANDATARY'S MAIN SCOPE OF WORK

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1. Definitions

1.1 "Mandatary" is defined as an agent, a principal contractor or a contractor for work, or service provider appointed by the Client to execute a scope of work on its behalf, but WITHOUT DEROGATING FROM HIS/HER STATUS IN HIS/HER RIGHT AS AN EMPLOYER or user of the plant.

1.2 "Client" refers to ACSA;

1.3 "Parties" means ACSA and the Contractor, and "Party" shall mean either one of them, as the context indicates;

1.4 "Services" means the services provided by the Contractor or Stakeholder to ACSA;

1.5 "Stakeholder" refers to companies conducting business at ACSA premises or within close proximity where there is an interface with ACSA operations;

1.6 "The OHS Act" refers to Occupational Health and Safety Act 85 of 1993, as amended;

"The COID Act" refers to Compensation for Occupational Injuries and Diseases Act 61 of 1997, as amended; and

1.7 "SHE" means Safety, Health and Environment.

1.8

GENERAL INFORMATION FORMING PART OF THIS AGREEMENT

a) 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.

b) Section 37 of the Occupational Health & Safety Act potentially punishes Employers for unlawful acts or omissions of Mandatories where a Written Agreement between the parties has not been concluded containing arrangements and procedures to ensure compliance with the said Act BY THE MANDATORY.

c) All documents attached or refer to in the above Agreement form an integral part of the Agreement.

d) 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.

e) Mandatories who utilise the services of other contractors must conclude a similar Written Agreement with those companies.

f) 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.

g) This Agreement shall be binding for all work the Mandatory undertakes for the Client and remains in force for the duration of the contracted period as per Main Contract signed by both parties.

h) The contractor shall submit all necessary documentation as per SHE File Index to the Client seven days prior to starting with any work.

THE UNDERTAKING

The Mandatory undertakes to comply with:

2. REPORTING

The Mandatary and/or his / her designated person shall report to the Client prior to commencing any work at the airports as well as when the activities change from the original scope of work.

3. WARRANTY OF COMPLIANCE

3.1 In terms of this agreement the Mandatary warrants that he / she agrees to the arrangements and procedures as prescribed by the Client and as provided for in terms of Section 37(2) of the OHS Act for the purposes of compliance with the Act.

3.2 The Mandatary further warrants that he / she and / or his / her employees undertake to maintain such compliance with the OHS Act. Without derogating from the generality of the above, or from the provisions of the said agreement, the Mandatary shall ensure that the clauses as hereunder described are at all times adhered to by himself / herself and his / her employees.

3.3 The Mandatary hereby undertakes to ensure that the health and safety of any other person on the premises is not endangered by the conduct of his / her activities and that of his / her employees.

4. SHE Risk Management

4.1 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.

4.2 The Mandatary shall review the risk registers as and when the scope of work changes and keep the latest version on the SHE File.

5. MEDICAL EMERGENCY RESPONSE

The Mandatary shall submit a detailed emergency response procedure to the Client OHS Department as part of the SHE File prior to start of work. The procedure shall stipulate how the Mandatary intends to attend to medical emergencies. In the sites where the Client has onsite clinic services, the medical staff can provide first line response and stabilise the patient however the Mandatary shall then activate its own medical response procedure and transport the patient to the medical facilities for further medical attention.

6. APPOINTMENTS AND TRAINING

6.1 The Mandatary shall appoint competent persons as per Section 16(2) of the OHS Act. Any such appointed person shall be trained on any occupational health and safety matter and the OHS Act provisions pertinent to the work that is to be performed under his / her responsibility. Copies of any appointments and certificates made by the Mandatary shall immediately be provided to the Client.

6.2 The Mandatary shall at the beginning of the project or activities where there are 5 people and more people working appoint a full-time dedicated Health and Safety resource whom will be dedicated to the project to ensure that Safety, Health and Environmental Requirements are met at all times. The allocated resource shall be based where the project is undertaken for the duration of the project or scope of work execution. The resource shall be trained and qualified on Occupational Health and Safety matters and the OHS Act provisions pertinent to the work that is to be carried out.

6.3 The Mandatary shall further ensure that all his / her employees are trained on the health and safety aspects relating to the work and that they understand the hazards associated with such work being carried out on the airports. Without derogating from the foregoing, the Mandatary shall, in particular, ensure that all his / her users or operators of any materials, machinery or equipment are properly trained in the use of such materials, machinery or equipment.

6.4 Notwithstanding the provisions of the above, the Mandatary shall ensure that he / she, his / her appointed responsible persons and his / her employees are at all times familiar with the provisions of the OHS Act, and that they comply with the provisions of the Act.

6.5 The Mandatary shall at all material times be responsible for all costs associated with the performance of its own obligations and compliance with the terms of this Agreement, unless otherwise expressly agreed by the Parties in writing.

7. SUPERVISION, DISCIPLINE AND REPORTING

7.1 The Mandatary shall ensure that all work performed on the Clients premises is done under strict supervision and that no unsafe or unhealthy work practices are permitted. Discipline regarding health and safety matters shall be strictly enforced against any of his / her employees regarding non- compliance by such employee with any health and safety matters.

7.2 The Mandatary shall further ensure that his / her employees report to him / her all unsafe or unhealthy work situations immediately after they become aware of the same and that he / she in turn immediately reports these to the Client within 48 hours with the action taken to mitigate the risk.

7.3 Where the hazard or risk identified is the responsibility of the Client to action, the Mandatary shall notify the Client OHS and Safety Department within 24 hours of becoming aware of the hazard or risk for prompt action to mitigate.

8. COOPERATION

8.1 The Mandatary and his/her employees shall provide full co-operation and information if and when the Client or his / her representative enquires into occupational health and safety issues concerning the Mandatary. It is hereby recorded that the Client and his / her representative shall at all times be entitled to make such an inquiry.

8.2 Without derogating from the generality of the above, the Mandatary and his/ her responsible persons shall make available to the Client and his / her representative, on request, all and any checklists and inspection registers required to be kept by him / her in respect of any of his / her materials, machinery or equipment and facilities.

9. WORK PROCEDURES

9.1 The Mandatary shall, after having established the dangers associated with the work performed, develop and implement mitigation measures to minimize or eliminate such dangers for the purpose of ensuring a healthy and safe working environment.

9.2 The Mandatary shall then ensure that his / her responsible persons and employees are familiar with such mitigation measures. This includes the lock out tag out processes relating to the use of machinery.

9.3 The Mandatary shall implement any other safe work practices as prescribed by the Employer and shall ensure that his / her responsible persons and employees are made conversant with and adhere to such safe work practices.

9.4 The Mandatary shall ensure that work for which a permit is required by the Employer, or any statute is not performed by his / her employees prior to the obtaining of such a permit.

10. HEALTH AND SAFETY MEETINGS

10.1 OHS Act requires that Health and Safety Committees be established in case where employee count exceeds 20 onsite, however due to the duration and the nature of the scope of work executed by the contractors and stakeholders enforces that regardless of employees at the airports. The Mandatary shall establish his / her own health and safety committee(s) and ensure that his / her employees, being the committee members, hold health and safety representatives to attend the Employer's health and safety committee meetings on monthly basis.

10.2 The Mandatary Section 16(2) appointed and SHE resource shall attend the Client SHE meetings as per the schedule communicated. In cases where the Mandatary delegated resources are not able to attend the meeting, an apology shall be submitted to the Client OHS Manager 24 hours before the meeting. An alternative representative shall be deployed to attend the meeting on the half of the Mandatary.

10.3 The Mandatary appointed Section 16(2) and SHE resource shall not skip more than three SHE Committee meetings a year.

11. COMPENSATION REGISTRATION/INSURANCE

11.1 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 or stakeholder is in good standing with the Compensation Fund or Licensed Insurer.

11.2 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.

11.3 The Mandatary shall provide the Client with Public Liability Insurance Cover as required by the Main Contract

11.4 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.

11.5 The Mandatary shall send updated Letter of Good Standing to the Client as and when the Mandatary receives it to ensure that the most valid version is available.

12. MEDICAL EXAMINATIONS

12.1 The Mandatary shall ensure that all his / her employees undergo routine medical examinations and that they are medically fit for the purposes of the work they are to perform.

12.2 Copies of such medical fitness certificates shall be made available to Client as part of the SHE file for review to ensure that they have been conducted by a reputable Occupational Health Practitioner registered with Health Professions Council of South Africa (HPCSA) as a doctor and specialist Occupational Medical Practitioner. Any other additional medical assessment shall be conducted in line with risk exposures.

12.3 Standard (Basic) medical tests shall constitute the following assessments as minimum:

- Individual's history of general and previous occupational health
- Comprehensive physical examination for evaluation of systemic function
- Blood Pressure Measurement
- Weight, Height and Body Mass Index
- Urine screening
- Drug screening
- Audio screening
- Lung Function Test
- Keystone eye test
- Work at Height Questionnaire
- Muscular skeletal questionnaire

13. INCIDENT REPORTING AND INVESTIGATION

13.1 All Safety, Health and Environmental Incidents shall be reported to the Client OHS and Safety Department within two hours from the time of occurrence via a phone call, sms or email or before end of shift. This shall be followed by a formal report in a form of a preliminary report within forty-eight (48) hours.

13.2 All incidents referred to in Section 24 of the OHS Act shall be reported by the Mandatary to

the Department of Labour and copies of such reporting to be sent to the Client. The Mandatary shall further be providing with copies of any written documentation and medical reports relating to any incident.

13.3 The Client retains an interest in the reporting of any incident as described above as well as in any formal investigation and/or inquiry conducted in terms of section 32 of the OHS-Act into such incident.

13.4 The Client reserves a right to hold its own investigation into any incident where it deems it is not satisfied with the incident investigation or where the severity of the incident is fatal or damage beyond a value of 1 million and above.

14. SUB CONTRACTORS

14.1 The Mandatary shall notify the Client of any subcontractor he / she may wish to source to perform work on his / her behalf on the Client premises. It is hereby recorded that all the terms and provisions contained in this clause shall be equally binding upon the subcontractor prior to the subcontractor commencing with the work. Without derogating from the generality of this paragraph:

14.2 The Mandatary shall ensure that the sub-contractor meets all the requirements and is competent for the scope of work contracted for. This includes that approval of the SHE file, SHE Plans associated with the work.

15. SECURITY AND ACCESS

The Mandatary shall request and familiarise its employees with the Client security rules which is not included in this agreement.

16. FIRE PRECAUTIONS AND FACILITIES

16.1 The Mandatary shall ensure that all his / her employees are familiar with fire precautions at the site(s), which includes fire-alarm signals and emergency exits, and that such precautions are adhered to.

16.2 This includes participating on planned and unplanned emergency drills organised the Client.

17. FACILITIES

The Mandatary shall have a program to upkeep and maintain the facilities leased out to it /shared with/ by the Client as stipulated on lease agreement.

18. HYGIENE AND CLEANLINESS

The Mandatary shall ensure that the work site, ablution, offices and surround area is at all times maintained to the reasonably practicable level of hygiene and cleanliness. In this regard, no loose materials shall be left lying about unnecessarily and the work site shall be cleared of waste material regularly and on completion of the work.

19. INTOXICATION AND SUBSTANCE ABUSE

19.1 Entry to the airside is subjected to Aviation Safety Requirements in line with Client

Substance Abuse Policy. No intoxicating substance of any form shall be allowed on site where airside or land side. Any person suspected of being intoxicated shall not be allowed on the site. Any person required to take medication shall notify the relevant responsible person thereof, as well as the potential side effects of the medication.

19.2 The Client reserves a right to do substance abuse testing and main entry points for the Mandatary employees.

19.3 Intoxication limits shall be adhered to as stipulated on Client Substance Abuse Policy.

19.4 Records of substance abuse testing shall be filed on the SHE File and made available to the Employer on request.

20. PERSONAL PROTECTIVE EQUIPMENT

20.1 The Mandatary shall ensure that his / her responsible persons and employees are provided with adequate personal protective equipment (PPE) for the work they may perform and in accordance with the requirements of General Safety Regulation 2 (1) of the OHS Act. The Mandatary shall further ensure that his / her responsible persons and employees wear the PPE issued to them at all times.

20.2 The Mandatary shall be monitoring compliance to PPE of his/her own employees at all times, The Client can at its discretion conduct random PPE compliance inspections and these can be recorded officially on the Client nonconformance reporting tool.

20.3 The Mandatary shall keep records PPE Control cards of each employee those shall be kept on SHE File.

21. PLANT, MACHINERY AND EQUIPMENT

21.1 The Mandatary shall ensure that all the plant, machinery, equipment and/or vehicles he / she may wish to utilize on the Client premises is/are at all times of sound order and fit for the purpose for which it/they is/are attended to, and that it/they complies/comply with the requirements of Section 10 of the OHS Act.

21.2 Where the Mandatary equipment's interface to the Client's equipment's, a joint risk assessment shall be conducted by the Mandatary and the Client OHS department in order for the risks to be mitigated prior to the use of such equipment's. It is the responsibility of the Mandatary to notify the Client OHS department of such equipment's and machinery.

21.3 In accordance with the provisions of Section 10(4) of the OHS Act, the Mandatary hereby assumes the liability for taking the necessary steps to ensure that any article or substance that it erects or installs at the sites, or manufactures, sells or supplies to or for the Client, complies with all the prescribed requirements and will be safe and without risks to health and safety when properly used.

22. USAGE OF THE CLIENT'S EQUIPMENT

22.1 The Mandatary hereby acknowledge that his / her employees are not permitted to use any materials, machinery or equipment of the Employer unless the prior written consent of the Client has been obtained, in which case the Mandatary shall ensure that only those persons authorized to make use of same, have access thereto.

22.2 The Client shall ensure that it isolates and apply LOTO on any equipment's and machinery where there is an unexpected start up or flow of energy. The Mandatary has a responsibility to apply its own LOTO procedures before starting with work and post the use of the equipment and machinery.

23. PERMIT MANAGEMENT

23.1 The Mandatary shall ensure that work for which the issuing of permit to work is required shall not be performed prior to the obtaining of a duty completed approved permit by the Client or relevant Authority.

23.2 The Mandatory shall notify the Client of any work to be undertaken on site in order for the Permit to Work to be issued.

24. TRANSPORTATION

24.1 The Mandatary shall ensure that all road vehicles used on the sites are in a roadworthy condition and are licensed and insured. All drivers shall have relevant and valid driving licenses and vehicle shall carry passengers unless it is specifically designed to do so. All drivers shall adhere to the speed limits and road signs on the premises at all times.

24.2 No employees on premises permitted in back of LDV (bakkie) and in front of LDV each driver and passenger must have a separate seat belt.

24.3 In the event that any hazardous substances are to be transported on the premises, the Mandatary shall ensure that the requirements of the Hazardous Substances Act 15 of 1973 are complied with fully all times.

25. CLARIFICATION

In the event that the Mandatary requires clarification of any of the terms or provisions of this agreement, he / she should contact the Client OHS Department.

26. DURATION OF AGREEMENT

This agreement shall remain in force for the duration of the work to be performed by the Mandatary and/or while any of the Mandatary's employees are present on the Client site.

27. NON-COMPLIANCE WITH THE AGREEMENT

If Mandatary fails to comply with any provisions of this agreement, the Client shall be entitled to give the Fourteen (14) days' notice in writing to remedy such noncompliance and if the Mandatary fails to comply with such notice, then the Client shall forthwith be entitled but not obliged, without prejudice to any other rights or remedies which the Mandatary may have in law,

- Apply penalties as stipulated on the main contract between Mandatory and the Client.
- To claim immediate performance and/or payment of such obligations.
- Should Mandatary continue to breach the contract on three occasions for the same deviation, then the Client is authorised to suspend the main contract without complying with the condition stated in clause above.

28. INDEMNITY

The Mandatary hereby indemnifies the Client against any liability, loss, claims or proceedings whatsoever, whether arising in Common Law or by Statute; consequent personal injuries or the death of any person whomsoever (including claims by employees of the Mandatary and their dependents); or consequent loss of or damage to any moveable or immoveable property arising out of or caused by or in connection with the execution of the Mandatary's contract with the Client, unless such liabilities, losses, claims or proceedings whatsoever are attributable to the Client's faults. The Mandatary or his/her employees is liable to prove without reasonable doubt that the loss is due to the Client's fault or negligence.

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:

a) 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.

b) The Mandatary shall be assigned the responsibility in terms of Section 16(1) of the OHS Act 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.

c) 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.

29. FURTHER UNDERTAKING

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. A copy of this letter must be made available to the Client.

The Contract/Project Manager shall sign this agreement as the Client's representative.

3 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 ……..

_____ _____

4 SIGNATURE ON BEHALF OF MANDATARY **DATE**
(Warrant his authority to sign)

Witnesses:

1. _____

2. _____

_____ _____

5 SIGNATURE ON BEHALF OF THE CLIENT **DATE**
AIRPORT COMPANY SOUTH AFRICA

Witnesses:

3. _____

4. _____

PART C1: AGREEMENTS AND CONTRACT DATA

C1.4: ACSA INSURANCE CLAUSES

***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:

For OPEX projects and non-construction CAPEX projects on the **landside**:

The successful bidder must source the following insurance cover, which is the deductible in the ACSA insurance cover:

- Aviation liability insurance cover for an indemnity limit not less than R100 000 (one hundred thousand rands).
- Submit proof of insurance to ACSA before the work starts, and annually for the duration of the project.

For OPEX projects and non-construction CAPEX projects on the airside:

The successful bidder must source the following insurance cover, which is the deductible in the ACSA insurance cover:

- Aviation liability insurance cover for an indemnity limit not less than R300 000 (three hundred thousand rands).
- Submit proof of insurance to ACSA before the work starts, and annually for the duration of the project.

Please note that where the project covers both landside and airside, only the airside clause will apply**.**

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 wit 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 Contracto completed and where a quantity is stated for an item in the Price List, an amount calculat 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 Where a quantity is stated for an item in the Price List, the Price is calculat 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.

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.

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.

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.

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.

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 The 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.

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

Table A: Activity Schedule Part 1: Maintenance and Repairs of Mechanical, Smoke vents, Electrical and Controls HVAC (heating, ventilation, and air-conditioning) systems at CTIA for Sixty Months (60) expenditure

Item no.	Activity Description	Frequency	Quantity (per 12 months)	Amount (per months/items)	Total:(qty X amount)
1	Provisional amount for Airport permits, GAST ,AIT and AVOP		-	R 150 000,00	R 150 000,00
2	Contract Management, Store Management, and administration	Monthly	12		
				Total Preliminary & General	
3	Daily/weekly Inspections & Maintenance *(based on all activities) and equipment schedule)*	Monthly	12		
4	Quarterly Inspections & Maintenance *(based on all activities) and equipment schedule)*	Quarterly	4		
5	Semi-Annual Inspections & Maintenance *(based on all activities) and equipment schedule)*	Six Monthly	2		
6	Annual Inspections & Maintenance *(based on all activities) and equipment schedule)*	Yearly	1		
7	Cooling Tower Water Treatment including lab analysis – SANS Accredited Laboratory (onsite testing not accepted)	Monthly	12		
8	Restaurant Duct Cleaning	Six Monthly	2		
9	OEM Service - Quarterly Maintenance for Trane Chillers x 12	Quarterly	4	R 98 500,00	R 394 000,00
10	OEM Service - Annual Service Tarane Chiller Maintenance x 12	Yearly	1	R 503 000,00	R 503 000,00
11	Chiller Trane Summit Service	Yeary	1	R 206 000,00	R 206 000,00
	***Other**				
12	6 Monthly review and reporting in terms of scope in HVAC Maintenance by a PRENG/PRTECH Mechanical.	Six Monthly	2		
13	6 Monthly review and reporting in terms of scope in HVAC Maintenance by a PRENG/PRTECH Electronics/Electrical light current or Mechatronics.	Six Monthly	2		
				Total Maintenance & Inspections	
14	Innovative with proven 15% cost savings on HVAC maintenance and repairs - **Energy Consumption Trends** – Compare before-and-after energy usage for system - **Consistent Performance** – Assess whether the system maintains optimal temperature, airflow, and humidity levels with minimal fluctuations. - **Frequency of Breakdowns** – Track the number of unplanned failures before and after implementation - **Mean Time Between Failures (MTBF) and Mean Time to Repair (MTTR)**	once off	**1**	10% of One Month's maintenance & inspection costs	**R**
Total	**Sub-total A (Total Preliminary & General + Total Maintenance & Inspections + Innovative)**				**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.
****Incentives and Low service damages will be applicable as per the Low **service damages table and Incentive 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)***

Table 1- HVAC Mechanical Resources

Item	Description	Qualification Category i.e., SAQA or SAQCC, Wireman's licences	Normal hours (R/hour)	After hours (R/hour) Std O/T
1	Mechanical /Electrical Site Supervisor- HVAC System	SAQA Accredited Trade Test Refrigeration Mechanic/Fitter (Min 3 years' Experience) OHS Training Certificate	R	R
2	Technician	SAQA Accredited Refrigeration Mechanic Trade Test (Min 3 Years' Experience- Air Cooled and water-cooled system)	R	R
3	Artisan Fitter/Millwright	SAQA Accredited Fitting Trade Test (Min 3 Years' Experience- on pumps, fans and valves)	R	R
4	Air Conditioning and Refrigeration Gas Practitioner	SAQA Accredited Trade Test (Min 3 Year experience must be in the refrigerant gas refilling of splits unit and Chillers)	R	R
5	Assistant	Mechanical N2 (1 Year experience in Maintenance of Mechanical equipment	R	R

Table 2 – Electrical and Controls Resources

1	Control Technicians	SAQA Accredited Control and or Instrumentation Trade Test certificate/N5 in controls and or instrumentation (Min 3 Years' Experience- Control panels, PLCs, SCADA/BMS, VSDs, sensors)	R	R
2	Lead Electrician	SAQA Accredited Trade Test (Electrical) with Master Installation Electrician Licence registered by Department of Labour Min 3 years' Experience	R	R
3	Electricians	SAQA Accredited Trade Test (Electrical) Min 3 years' Experience	R	R
4	Assistant Electrical	Electrical N2 1-year experience in maintenance of electrical equipment	R	R
5	Controls Engineer`s (For adhoc Quarterly system integrity assurance)	BSC/BENG Electronic/ Electrical light current/Mechatronics/ Pr Eng registration or BTECH Electronic/ Electrical light current/Mechatronics/ +Pr Tech registration Min 3 years' experience	R	R

Detail requirements regarding staff

The contract is structured on an output-based model, ensuring that the focus remains on achieving specific service deliverables and outcomes. Under this arrangement, it will be at the discretion of the service provider to determine the number of resources required to meet the performance expectations. The service provider will retain the flexibility to allocate the necessary workforce, expertise, and tools to consistently meet or exceed the agreed-upon service level agreements (SLAs)

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 of HVAC System. The Contractor shall continuously ensure that all staff is knowledgeable on all equipment relating to the HVAC system.

Note the following qualification and experience are to be meet as per standardised Maintenance and Repairs of Mechanical, Smoke vents, Electrical and Controls HVAC (heating, ventilation and air-conditioning) systems at CTIA resources per infrastructure:

HVAC – Mechanical key personnel			
Item	**Description**	**Qualification Category i.e., SAQA or SAQCC, Wireman's licences**	**Experience of key resources**
1	Site Supervisor-HVAC	SAQA Accredited Trade Test Refrigeration Mechanic/Fitter OHS Training Certificate	• Min 3 years' experience post trade test qualification • 2 years supervisory Experience • Min 2 years OHS experience
2	Artisan Fitter/Millwright	SAQA Accredited Fitting Trade Test (Min 3 Years' Experience- on pumps, fans and valves)	Min 3 years' experience post trade test qualification and 1 year must be on the maintenance of pumps, fans and valve
4	Air Conditioning and Refrigeration Gas Practitioner	SAQA Accredited Trade Test (Min 3 Year experience must be in the refrigerant gas refilling of splits unit and Chillers)	Min 3 years' experience post trade test qualification and 1 must be in the refrigerant gas refilling of splits unit and Chillers
5	Assistant	Mechanical N2 (1 Year experience in Maintenance of Mechanical equipment	1 Year experience in maintenance of mechanical equipment
HVAC Electrical and Controls key personnel			
1	Control Technicians	SAQA Accredited Control and or Instrumentation Trade Test certificate/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
2	Lead Electrician	SAQA Accredited Trade Test (Electrical) with Master Installation Electrician Licence registered by Department of Labour	Min 3 years' experience post trade test qualification and 2 years of experience in MCC panels – medium and high voltage

3	Electricians	SAQA Accredited Trade Test (Electrical) Min 3 years' Experience	Min 3 years' experience post trade test qualification and 2 years of experience in MCC panels – medium and high voltage
4	Assistant Electrical	Electrical N2 1-year experience in maintenance of electrical equipment	1 Year experience in maintenance of electrical equipment
5	Controls Engineer`s (For adhoc Quarterly system integrity assurance)	BSC/BENG Electronic/ Electrical light current/Mechatronics/ Pr Eng registration or BTECH Electronic/ Electrical light current/Mechatronics/ +Pr Tech registration	Min 3 years' experience

ii) CALL OUT FEE + DIOGNOSTIC AND REPAIR RATES

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 – 16h30)

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.

g) The callout rates shall include travelling costs as per AA rates R/ km (maximum Travelling distance of 30 km one-way from the supplier workshop/office to ACSA is not payable)

Table B: Call outs + Labour

Description **Call Out**	**Call out fee-** ***(Provision amount)***	**12 Months-1 year** ***(Provision amount)***	**Total/ 5 Years –60 Months** ***(Provision amount)***
*Call out Fee which includes first hour on site and travelling fee (after hours, weekends and holidays) this will be charged based on labour rates			
Call- outs	R 10 000.00	R 120 000.00	R 600 000.00
Ad hoc Repairs + Mark -Up	R 25 000.00	R 300 000.00	R 1 500 000.00
Sub-total B (*Call out fee + **Diagnostic and repair)			**R 2 100 000.00**

iii) SPARES and MARK -UP

***Spares** will be managed by the contractor 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 3 000 000.00**

Mark-up (third party procured items/services)

Bidder to complete

Value of Item or Services	**Mark-up *(Contractor to fill in)* *Y***	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	%	R73 000.00	
	Sub-total D (Third party Mark-up) (Note: Should be part of the form of offer and acceptance)		R

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 item 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.

Capex Provision

- The service provider will be required, from time to time, to replace equipment deemed obsolete and due for replacement through the Capex provisions in the contract.
- When Capex is used, ACSA's policy on capitalization, including any required warranties and bonds, must be followed.

Capex Provision

Description	Total (excluding VAT)
Project 5114- HVAC Split Optimisation	**R250 000,00**
Project 5107- Primary HVAC System Replacement	**R3 022 500,00**
Subtotal E- Capex Provision	**R 3 272 500,00**

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 AND REPAIRS OF MECHANICAL, SMOKE VENTS, ELECTRICAL AND CONTROLS HVAC (HEATING, VENTILATION AND AIR-CONDITIONING) SYSTEMS AT CTIA FOR SIXTY- MONTHS (60) EXPENDITURE:

NB: The contract will be subjected to CPI increase on its anniversary date.

Period	*Annual escalation*	*Rand value*
Sub-total A (Total Preliminary & General + Total Maintenance & Inspections + Innovation) -***Year 1***	***0%***	
Year 2 (Year 1 + annual escalation)	***4.5%***	
Year 3 (Year 2 + annual escalation)	***4.5%***	
Year 4 (Year 3 + annual escalation)	***4.5%***	
Year 5 (Year 4 + annual escalation)	***4.5%***	
Sub-total B (*Call out fee + **Diagnostic and repairs)		R 2 100 000,00
Sub-total C (Spares provisional sum)		R 3 000 000,00
Sub-total D (Third party Mark-up)	***4.5%***	R
Subtotal E- Capex Provision		R 3 272 500,00
Total Contract Value for the Five (5) Year Contract – Excluding VAT (to be carried to the Form of offer)		

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

PART C3: EMPLOYER'S SERVICE INFORMATION

Document reference	Title	No of pages
	This cover page	8
C3.1	*Employer*'s Service Information	9- 118
	Total number of pages	

C3: EMPLOYER'S SERVICE INFORMATION

Contents

6 Description of the *service*

6.1 Executive overview

Purpose of Commodity
The purpose of this initiative is to source a supplier to provide HVAC Maintenance Service for Mechanical , Electrical and Controls Systems at CTIA. The CTIA HVAC system include of key primary assets such as Cooling towers, Chiller Plant Room, VRV Systems, BMS system, MCC and ACDB panels including ventilation(Fans and Extraction). The secondary assets comprise as Split units, Indoor Package Units, AHU/FCU units , and Pipe and duct work that are linked to the control system.

Complexity of Commodity
HVAC Maintenance Service for Mechanical, Electrical and Controls System is of high complexity, it requires qualified electronics technicians and electrical technicians or artisans that are qualified and registered with **SAQCC Refrigeration and Gas accreditation categories , trade tested as per resource requirements** and be knowledgeable of the following:

- Air Distribution System
- Refrigeration System,
- Controls & Electrical Systems and,
- Chilled Water Distribution Systems
- VRV System
- Dx Package Units
- VSD units
- Ventilation(fans and extraction fans)
- Air condition splits units

Further the system will require a qualified and certified electrician to work on the following
-MCC Panels
-Units DB board
-Connection and conduct test on Pumps and Electrical motors

The Contractor shall ensure compliance to general safety regulations and standards such as
- OHS Act Administration regulations of 2003,
- General Health & Safety Regulations of 2005,
- Electrical Installation Regulation of 2009,
- General Machinery Regulation,
- Driven Machinery Regulations

The following SANS and applicable Standards should be adhered to during installation and maintenance of equipment at CTIA HVAC Systems
- EN 12101 - Smoke and heat control systems
- SANS 10147- Refrigerating systems, including plants associated with air-conditioning systems
- SANS 10173 - The installation, testing and balancing of air-conditioning ductwork
- SANS 10400 Part O - Application of the National Building Regulations Part O – Lighting and Ventilation
- NFPA 214 - Standard on water-cooling towers
- SANS 10142 - Low Voltage Installations

6.2 Detailed Scope of Works

Employer's Objective

The contractor will be responsible for the HVAC Maintenance Service of Mechanical, electricals and controls system infrastructure and its components at Cape Town International Airport.

The appointed service provider will be fully responsible for meeting all requirements 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. The Contractor will be fully responsible for obtaining (and keeping up to date with) latest technology for improving the service and functionality of HVAC System infrastructure and its components.

Overview Description of Works

In brief, the Contractor will be responsible for repairs and maintenance of the HVAC System at Cape Town International Airport and perform the following functions which are not limited to:

Equipment to be serviced and inspected comprises of:

- Chillers ancillary equipment, Cooling Towers, Pumps, Piping and Valves
- BMS control system and associated equipment's
- Trane Chiller control summit system
- Electrical Drive Motors & Ahu's / Fcu's
- MCC and DB Panels
- Fans / Extractions
- Air Curtains
- Split Units (Offices- Workshops), Hiros Units (Package units) - Wire Centres & ATNS Substations
- VRV Systems
- Grille / Diffusers / Disc Valves
- Pipe, Duct work and insulation
- Water treatment Dosing pumps, meters and ancillary equipment

Frequency/Periodic Suggested Schedules

The contractor will be provided with service maintenance plan/chart and inspection sheet by the Service Manger which shall be conducted in line with the applicable regulations and engineering standards. The periodic schedule activities will be daily, weekly, monthly, quarterly, six (6) monthly and yearly inspection as per Manufacture's prescribed maintenance schedules and frequencies below

INSPECTIONS

BMS

The Contractor must go through the BMS every morning and check for abnormal conditions such as:
a. High or Low Temperatures
b. Grey out screens
c. Check the Dashboard for alarms
d. Check operation of the Chiller plant rooms as per seasonal schedule
e All abnormal conditions must be verified and rectified accordingly.
f All defects must be reported to IMC and to the Joint contractor
g Any change on the BMS (set points, schedule, units switched on or off, etc,) must be recorded on a provided logbook. These must be included on a monthly report.

Furthermore, the Service provider will be expected to ensure the following is functional.

- Tuning of control loops for greater efficient control operation.
- Operational validation and recalibration of Humidity, Pressure and Temperature Transmitters.
- Operational validation and recalibration of Chilled Water Control Valves including Trane Summit controls functionality.
- Operational validation of Variable Speed Drives.
- Operational validation of Economy Cycle Dampers.
- Operational validation of BMS Diffuser Controllers.
- Operational validation of Diffuser Control Loops.
- Daily acknowledge non-critical System Alarms.
- Weekly rectification of critical BMS System Alarms.

- Service comprising of BMS due diligence of the NAE (BMS Master Controller) operational Memory and Capacity checks.
- Servicing of BMS “Front End” Hardware and Software
- Resolution of daily controls operational problems.
- Including all the input nodes under the BMS system for Fire Alarms , Airbridges, and Lifts and escalators.

SPLIT UNITS - WIRE CENTRES, ATNS BUILDINGS, & OVAL and other OFFICES

- Record the room temperature (Wire Centres & ATNS Buildings) as per Space temperature readings retrieved from the BMS and verify on the plants. Adjust if necessary.

VRV OUTDOOR UNITS

- Check the condition and operation of the space temperature.
- Record the room temperature as per Space temperature readings retrieved from the BMS

Frequency	Description of the works
Daily	Check that the BMS is working
Monthly	Check that all sensors linked to the BMS are working and replace where necessary
Monthly	Check that the chiller and cooling towers rotation/sequencing is working and adjust where necessary.
Monthly	Check that all HVAC equipment go into sleep mode and activates at set times.
Monthly	Check and adjust settings where necessary

CHILLER PLANT INCLDUING PUMPS

- After the unit has operated for approximately 30 minutes and the system has
    - stabilized, check the operating conditions and complete the procedures below:
    - Log the chiller.
    - Check evaporator and condenser pressures with gauges and compare to the reading on the Clear Language Display. Pressure readings should fall within the specified ranges in the Operating Conditions.
- Check which chillers are operating.
- Check and listen for any strange abnormal noise.
- Check and clean plant rooms
- Maintain high standards of good housekeeping.

Frequency	Description of the works
Weekly	Check that the energy management is functioning according to design (Chiller sequencing, operation and control). Download and provide a chiller energy consumption report and COP. Check that all sensors linked to the BMS & Trane Summit are working and replace where necessary Check the compressor amps and voltage Check the chiller settings and adjust where necessary Check all circuit breakers and replace where necessary Check all lugs and replace where necessary Check and inspect the if are any oil leaks and report Check the chilled water temperature

	Check the condenser water temperature
3 Monthly	Review operating log Measure and record temperature, pressures and amps Check proper functioning of controls, gauges and electric panel Check the condenser and evaporator tubes for fouling Inspect for structural looseness and tighten if required Check that the wiring in the chiller panel is as per regulations and adjust where necessary. Measure the oil filter pressure drop. Replace oil filter if required Measure and log the subcooling and superheat Check oil and refrigerant charge and any refrigerant leaks and repair all leaks Check and adjust settings where necessary Check that the chiller sensors are working and replace where necessary.
6 Monthly	Vibration and temperature measurements on pumps on condenser and chilled water pumps and AHU fans
Annual	Perform all weekly and monthly maintenance procedures. Check the refrigerant charge and oil level. Routine oil changing is not necessary on a hermetic system. Have a qualified laboratory perform an oil analysis to determine system moisture content and acid level and provide result. Check the pressure drop across the oil filter Trane qualified technician to leak check the chiller, to inspect safety controls, and inspect electrical components for deficiencies. Inspect all piping components for leakage and/or damage. Clean out any inline strainers and condenser tubes. Test vent piping of all relief valves for presence of refrigerant to detect improperly sealed relief valves. Replace any leaking relief valve. Inspect the condenser tubes for fouling; clean if necessary or conducted rodding Check to make sure that the crank case heater is working Inspect for structural looseness and tighten if required Use a non-destructive tube test to inspect the condenser and evaporator tubes at 3-year intervals

ELECTRICAL SUBSTATIONS-PANELS ANS DB`S FOR WIRE CENTRE, VRV & PLB'S (SPLIT UNITS)

Frequency	Description of works
Weekly	Check HVAC plant room lighting and replace where necessary with LED lights. Check all circuit breakers, Earth leakages etc and replace where necessary.
Monthly	Compile/update panels and DB register Check that all door panels are lockable and repair/replace where necessary Inspection and testing of panels components in line with SANS 10142. Remove dust and other deposits Check voltmeters and ammeters and replace where necessary Check for loose connections and tighten circuit breaker terminals.
Quarterly	Check cable insulation and replace where necessary. Manually switch the circuit breakers on and off. Check and replace panel lights where necessary Check isolator switches and replace where necessary Check the fire detection interfacing relays where applicable and replace were necessary.
Half Yearly	Compile/update panel and DB drawing register. Verify panel and DB drawings and amend where necessary Perform earth leakage tests
Yearly	Label/Update all HVAC Plant Room Panels and DBs Painting of DB's Perform thermal scans on all HVAC Plant DB's Perform COCs on all HVAC Plant room panels and DB's

MONTHLY, QUARTERLY AND YEARLY INSPECTION AND SERVICING

COOLING TOWERS and WATER TREATMENT

Frequency	Description of works
Weekly	Check that the FAN motors' AMPS and Voltage are within range. Check fan motor and listen for abnormal bearing noises Check if all power to control are live
Monthly	Test all the emergency stops Check and test all Temperature sensors and transmitters and healthy status on the BMS. Check all cooling tower ultrasonic level meters/ball valves and repair/replace where necessary Check all solenoid valves and replace where necessary. Test all actuators and repair/replace where necessary. Check all pressure gauges and replace where necessary Check all pressure transmitters and replace where necessary. Check all the thermometers replace where necessary Test the condenser water for compliance with water quality standard and apply water treatment as necessary The water treatment should be lab tested for accurate results for conductivity-based TDS testing or gravimetric analysis (lab result to be submitted on monthly basis to prevent scaling and corrosion , control biological growth and optimise water blowdowns cycles.
Quarterly	Test and Service (Disassembly and assembly) the VSDs and adjust settings where necessary

CONDENSER, CHILLED WATER MOTOR PUMPS and AHU'S MOTORS

Frequency	Description of works
Daily	Check that the motor AMPS and Voltage are within range Check that the motor cooling fans are functioning according to specification. Record motor current and compare with RLA
Monthly	Stop motor and isolate the breaker feeding the drive panel you are going to work on. Remove the drive covers. Remove the terminal box cover of the motor. Use the blower or vacuum cleaner to remove dust and any foreign objects in the drive and motor terminal box. Check v-belts ,adjust tension and replace worn out v-belts. Clean or replace the filters. Clean the cooling fan. Tighten all connections in the drive panel and the motor taking care not to over-tighten the connections. Put all covers back(terminal box and drive covers). Remove dust on the body of the motor and the panels using clean cloth. Switch on and check that the instruments and panel lights are in operating order. Ensure that the drive cooling fans are operating. Start the motor and check the running current. Stop the motor and put it back to normal Note all defect on the job card. **Test if the AHU fan motor cuts when activated by the fire detection signal**
Annual	Stop the drive, isolate and lock-out the circuit breaker and/or the local isolator. Clean motor using Electro Solvent and rags. Open and remove cover plates from terminal box and protection terminal box. In the terminal boxes: a. check for signs of moisture ingress and signs of terminal arcing and overheating b) check tightness and secureness of cable lugs c) re-torque the connection fasteners c) when closing up, renew seal or seal with silicone sealer Alternatively, or in addition to checking terminals for arcing/overheating**, use an infra-red detector to check junction box for "hot spots" under load.** Remove fan cowling, clean fan impellor and cover, check for secure mounting of fan on rotor

	shaft. Re-install fan cowling. Check v-belts ,adjust tension and replace worn out v-belts. Check motor base or flange mountings. Check coupling hub or v-belt hub for secureness - look specifically for wear at keyway and secureness of taper lock bush and nut. For sealed bearings, check that all seals are undamaged and still in place. For grease bearings, lubricate with hand pump. For slip ring motors: a) open brush chambers, clean out dust using vacuum cleaner or dry, compressed air b) check brushes for wear and measure length, replace as needed c. check condition of slip rings and clean/dress as needed Remove all lockouts, reinstate power, start-up motor and check for correct running as per running checks. Re-select motor operation mode as required by the process

VRV SYSTEM- SPLIT UNITS WIRE CENTRES (ATNS BUILDINGS, & OVAL and other OFFICES (Diffusers and Wall Thermostats)

Frequency	Description of works
Weekly	Check abnormal condition such as High or Low Temperatures and make changes where necessary. Check the condition and operation of the outdoor units. • Check if there is power supply to the units. • Check for any gas leaks. • Check and listen for any strange abnormal noise
Monthly	Test VAV diffusers and connection to the unit controllers Ensure VAV diffuser heating elements are connected to the occupants' billable power supply. Clean condenser unit
Half Yearly	Test wall thermostats and replace where necessary

AIR HANDLING UNITS and FCU's

Frequency	Description of works
Weekly	Check operation of the AHU's **Check the operation of Fresh and Return Air Dampers and confirm the correct operation of the Economy Cycle**. Check v-belts ,adjust tension and replace worn out v-belts. Check the operation of the **damper motors against the status on the BMS** **Clean and lubricate dampers replace where necessary** **Check the operation of the cooling valve and the duct heater against the status on the BMS** Check if all indication lights on the DB's are working and report any faults to the IMC. Check that the FAN motor and heater banks' AMPS and Voltage are within range. Check fan control switch and thermostat. Check that the Volt meters and Ammeters are functioning according to specification and replace where necessary. Record ambient, leaving (coil) and return air temperatures
Monthly	**Test all the emergency stops** Test all heaters for functionality and a healthy link status with the BMS Check and test the pilot lights (Fan and heater bank status lights) Check and test all switches and replace where necessary **Check and test the fire detection signal relay** Check and test all flow switches and replace where necessary Blow out motors (fan cowl) with industrial blower Check evaporator and condenser fan motor and fan bearings. High and Low pressure cut out switch

	Oil low pressure and cut out switch Check motor mountings and drives Check and test that all three-way and two-way valve actuators are functioning within specification. **Check and test all Temperature sensors and transmitters and healthy status on the BMS.** Check all pressure gauges and replace where necessary Check all the temperature gauges and replace where necessary Test that the fan motor cuts when activated by fire detection Clean filters or replace where necessary
Quarterly	Test and Service (Disassembly and assembly) the VSDs and adjust settings where necessary Check and test all controllers according to operating philosophy and adjust settings/ reprogram where necessary

FRESH AIR , VENTILATION AND EXTRACTION FANS

Frequency	Description of works
Monthly	Clean filter box interior Check wiring Record current drawn by all motors Check motor bearings Check flexible connections between fan and ducting (if applicable) Check electrical connections to motor for any damages Check fan base motor mountings Check **the toilet extraction and fresh air induction fans amps and voltage** **Compile/update fans register**. The register should contain the model, make, power rating, voltage, rated amps and flow rate.
Quarterly	**Label all fans with a supply DB/panel details** **Test all smoke extraction fans and interfacing with the fire detection system**.

System reviews by ECSA registered professionals

Frequency	Description of works	Description of professional performing the review
Yearly	• Provide assurance that the smoke management system conforms with EN12101, and that maintenance is conducted to maintain the technical integrity of the system. • Provide that the fresh air induction and toilet extraction system conforms to part O of SANS 10400. • Provide assurance that the plant rooms' refrigerant leak detection and ventilation system is maintained and functions according to the requirements of SANS 10147 and that the requirements of the Pressure Equipment Regulations are complied with. • **Provide assurance that the HVAC system and smoke vents function according to the fire zoning maps** • Provide an independent assurance that the heat rejection system functions according to design. • Provide a review of where the system	**PRENG/PRTECH Mechanical**

Frequency	Description of works	Description of professional performing the review
	or maintenance can be optimised to improve the overall energy efficiency of the system. • Provide a report to ACSA of findings and recommendations.	
Yearly	• Provide an assurance that the system functions according to the control and operating philosophy • Provide assurance that the system controls and interfaces function according to SANS 10400 and EN12101 • Provide assurance that the control loops are functioning and maintained according to design • Provide assurance that the fire signal relays are functioning according to design. • Provide assurance that the BMS functions according to design • Provide a review of where the system or maintenance can be optimised to improve the overall energy efficiency of the system. • Provide a report to ACSA of findings and recommendations.	**PRENG/PRTECH Electronics/Light Current/Mechatronics**

Equipment Life Span
The life span of the HAVC system varies in years of installation (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 system

Column Heading	Meaning
Asset Group	Maintenance of HVAC asset groups as defined above.
Activity	A short description of the maintenance activity to be performed.
Frequency	The code used to reflect the intervals between which maintenance activities will be performed. The convention used is D = Daily, W = Weekly, M = Monthly, Y = Yearly

Asset Group	Activity	Frequency
Air Conditioner – Chiller Unit (ACH)	Inspection	Daily (D)
	Maintenance	Tri-Monthly (3M)
	Maintenance	Yearly (Y)
Air Conditioner – Console Unit (ACU)	Maintenance	Monthly (M)
	Maintenance	Tri-Monthly (3M)
	Maintenance	Yearly (Y)
Air Conditioner – Cooling Tower (ACT)	Maintenance	Monthly (M)
	Maintenance	Tri-Monthly (3M)
Air Conditioner – Environmental Control (AHI)	Maintenance	Tri-Monthly (3M)
	Maintenance	Yearly (Y)
Air Conditioner – Air Handling Unit (AHU)	Maintenance	Monthly (M)
	Maintenance	Yearly (Y)
Air Conditioner – Air Split Unit (ASU)	Maintenance	Monthly (M)
	Maintenance	Tri-Monthly (3M)
	Maintenance	Yearly (Y)
Air Conditioner – Ventilation Unit (AIR)	Maintenance	Tri-Monthly (3M)
	Maintenance	Six-Monthly (6M)
Air Conditioner – Fan Coil Unit (FCU)	Maintenance	Tri-Monthly (3M)
	Maintenance	Yearly (Y)

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 System are listed on Annex H.
The preventative maintenance previously performed on the HVAC System are listed on Annex F, for the actual work orders with tasks, ACSA Integrated maintenance centre can be contacted to issue the information.
A sample of root cause analysis on the HVAC system 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 system equipment are located on various sites and remote areas within Cape Town International Airport (refer to Annex 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 the HVAC system shall conform to the following Procedure and or other legislative references (Gazetted Standards or OHS Regulations):

Electrical installation Regulation of 2009
Electrical Machinery Regulations
General Machinery Regulation and Driven Machinery Regulations
Pressure Equipment Regulations
SANS 10147 and 347
SANS 10400 Part O
SANS 10400 Part T
EN12101
Insurance Requirements
ACSA maintenance procedure for HVAC System- D080 025M as provided in Annex N.
The preventative maintenance previously performed on the HVAC system are listed on Annex F, for the actual work orders, ACSA Integrated maintenance centre can be contacted.

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 requirements 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 – No Performance bonds and guarantees applicable on the service information
All repair work shall carry a defect free be guaranteed for a period of 3 months after completion of work.

Employer's requirements for the *service*

The contractor will provide complete maintenance of Mechanical , Electricals and HVAC Controls Systems and shall provide all necessary **SAQCC Refrigeration and Gas accreditation** qualified labour, supervision required to carry out inspection, preventative maintenance activity, and keep maintenance records of repair work performed and spare parts utilised. The contractor shall ensure the defects identified and reported during inspection or intervals shall be corrected within the service level agreement stipulated in the contract.

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 ACSA, ACSA 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 borne out of the service level agreement contract.*** The contractor shall NOT add any mark-up to any Hotline related expenses. A "Hotline" agreement shall typically ensure that problems relating to HVAC controls systems are promptly rectified. It is intended that Hotline agreements will be in place with OEMs for HVAC Controls System and all its associated components.

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 at all times – as stipulated in the in the contract This may be amended by mutual arrangement between ACSA and the Contractor from time to time.

The Contractor shall at all times 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 Annex I including legal requirements and minimum competency requirements in Annex U. 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 performance specification- KPI table 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 to avoid low performance damages.

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 trustworthy of the HVAC controls systems activities/procedures in the area. The Contractor shall further ensure that any staff member partaking in baggage pilferage or other criminal activities is immediately removed from site and his permit returned and/or cancelled at the ACSA Permit Office with the knowledge of Service Manager.

All work shall be performed within the required response times – as stipulated in the KPI table . 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 liability and be guaranteed for a period of 3 months after completion of work. Maintenance of Mechanical , Electricals and HVAC controls system availability and performance requirements as per SLA shall be meet at all times as stipulated per the contract agreement in order to avoid low performance damages.

All work shall be performed within the required Response Times – as stipulated in **Annex I** of the service level agreement. Any breakdown impacting on operations shall be attended-to until restored to good reliable condition. No breakdown may be left unreported 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. HVAC system availability and performance requirements as per OEM shall be met at all times as stipulated per the contract agreement in order to avoid penalties.

All work shall be charged according to the Price 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.

Upon completion of the work, the Contractor shall complete a comprehensive written logbook-service report in respect of HVAC system, listing all activities undertaken, additional work performed and submit this report to the Employer’s representative.

All consumables such as cleaning materials will be supplied by the Contractor at his/her own cost. The costs are limited to the provision made in the cost breakdown. It should be noted that the operation amount should include all standby fees and cell phone support

The Contractor will be responsible for providing all resources 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 exclusions to the above should be clearly communicated in the returnable schedules when submitting the tender.

The Contractor shall ensure that all building areas in proximity to HVAC System as well as areas of immediate works are maintained in a broom-swept state.

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 Operational 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, correct PPE and a uniquely numbered reflective jacket (for easy identification via CCTV).

Furthermore, Contractor will be expected to be present for essential power simulation and Fire End to End testing during predetermined intervals that will be communicated to the contractor. It should be noted that ACSA will not compensate the service provider for being present for both test as these falls under Planned Maintenance activity price schedule.

Location of the works

The Works are located at Cape Town International Airport at various locations – mostly in controlled areas. It is crucial for the Contractor to note that Cape Town International Airport is a National Key Point and governed as such.

6.3 Interpretation and terminology

The following abbreviations are used in this Service Information:

Abbreviation	**Meaning given to the abbreviation**
ACSA	Airports Company South Africa
CTIA	Cape Town International Airport
OEM	Original Equipment Manufacturer
PPE	Personal Protective Equipment
CCTV	Closed Circuit Television
RCA	Root Cause Analysis
OHSACT	Occupational Health and Safety Act No. 85 of 1993
SANS	South African National Standard
SABS	South African Bureau of Standards
SHE-File	Safety and Healthy File
CTB	Central Terminal Building
SOB	Southern Office Building
HVAC	Heating, Ventilation, and Air Conditioning

7 Management strategy and start up.

7.1 The *Contractor*'s plan for the *service*

The Contractor's plan for the service will informs both the employer and service manager the contractor's detailed intention on how the contractor will provide the service. The plan shall consist of working methods as well as details of the resources, including the Equipment the contractor intends to use. This will enable the Service Manager to monitor the contractor performance and to access the adherence to KPI table.

The contractor plan should cover the following which should be submitted and attached on the NEC contract as **Annexure. The contract plan should be submitted for acceptance as per contract data requirements clause 21.1 – 30 days from the date of contract.**

- The starting date and the end of the service period
- The order and timing of the work of the Employer and Others as last agreed with then by the Contractor or , if not agreed as stated in the service information
- Provision
    - Time risk allowances
    - Health and safety requirements and
    - The procedures set out in the contract.
- The dates when, in order to provide the service in accordance with his plan, the contractor will need.
    - Access to the Affected Property as stated in the service information.
    - Acceptances
    - Plan and maintenance , equipment and other things to be provided by the employer and
    - Information from Others
- For each Operational and Resources Plan Proposal, a statement of how the contractor plans to do the work identifying the principal Equipment and other resources which he plans to use i.e. The tenderer must submit a comprehensive proposal that shows **Operation Plan and Resource Plan Proposal** in the form of organogram.

    - Resources to conduct both plan and corrective maintenance on the SLA and achieve the KPI in maintaining the HVAC system i.e. chillers, AHU`s FCU`s, split units, VRV`s, cooling towers BMS, water treatment, ducting.
    - The proposal should not be limited to manpower only it should cover equipment -instruments and tools
    - The tender must submit organogram for all resources identified under the operation plan to enable the service provider to achieve the KPI and SLA.
- Other information which the service information requires the contractor to show on a plan submitted for acceptance.

The service provider should consider below on their service plan for reporting and ensuring to meet the KPI requirements.

Operational hours

Normal airport operational hours shall be **from 04:00 to 00:20** for every day of the year but will be confirmed/amended by the Service Manager from time to time. Down-time for HVAC system for routine maintenance shall be arranged with the Operations Manager/ Service Manager and relevant stakeholders to suit airport operations. The Contractor must allow for sufficient after-hours work in order for scheduled work not to interfere with airport operations. For any scheduled work/plan maintenance that is carried outside the normal working hours will not be charged against ACSA as it falls under price activity schedule.

Response Times

The Contractor must at all times comply with the following:

Response time shall be calculated as the time taken from the fault being reported (via IMC, 3rd party, or other) to the time the fault is cleared, the relevant device becomes available for use.

100% of all after hour breakdowns shall be responded to within 45 minutes. Response time shall be measured as the time taken from reporting the call, to the technician arriving at the relevant piece of equipment.

Any breakdown impacting on operations shall be attended-to until restored to good reliable condition. This implies that no breakdown may be left unattended or incomplete for the next day or shift.

ACSA will hold the Contractor liable for any costs incurred by any party as a result of negligence or unreasonable poor performance by the Contractor including excessive time taken to effect repairs.

Closure Duration

Closure duration is defined as the time elapsed since the maintenance call was logged at the IMC to the time the contractor reports to the IMC that the problem has been resolved.

95% of all breakdowns will be restored to good working condition within 1.5 Hours, unless a special agreement exists with the employer's agent. Include escalation procedure. The contractor must report any defect immediately to ACSA.

In the event of a HVAC system or its related component being unavailable, it will be the sole responsibility of the Contractor to advise the Infrastructure Monitoring Control (IMC) as well as Contract Manager immediately.

Defect free liability period.

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 or as per OEM specifications.

Maintenance Management

Contractor is expected to adhere to a 90/10 planned vs. unplanned maintenance split on monthly basis.

On arrival to site (airport) to attend to a callout, a contractor need to notify IMC (ACSA Helpdesk at CIAHELPDESK@airports.co.zaor +27 (0) 21 937 1257) and also notify IMC (ACSA Helpdesk) on completion of the repair work before leaving the site (airport).

Checklists and Logbooks

- Technical checklists and logbooks to be kept and verified by ACSA personnel as per OEM or SANS standard.
- Audits will be performed on ad hoc basis to assess quality of checklists and logbooks.

DAR (Data Analysis and Reporting)

- Weekly and Monthly feedback report to be compiled and submitted to ACSA mechanical maintenance department stipulating per area cost breakdown, findings and recommendations. This report should state number of failures, availability and reliability of the particular equipment. Daily reports to be available on request.

- If an incident or deviation occurs, an RCA (Root Cause Analysis) investigation to be carried out along with ACSA mechanical maintenance personnel to determine the root cause and corrective actions required to bring the physical asset back online.
- A technical investigation report of any incident should be submitted within 24 hours to ACSA Mechanical Maintenance Department.
- Inventory control audits report to be submitted on monthly basis.

A management report that consists of a task list should be submitted for all repairs and replacements and not just an invoice.

Evaluation

Contractors will be evaluated on the following:

Safety & Housekeeping	Safety warning sign in place
	Isolation/ cordon/ Barricading off area
	Apology sign in place
	Store room
	Control Room
Security	ID card always clearly visible
	Clear sign of the name of company
	Low worker turn over
Reliability	No repeat incident on equipment
	Adherence to SLAs
	Availability of equipment as per contract
	Keep agreed spares available
	Staff complete as per contract schedule
	Competency of staff
Finance	Quotes must be submitted within specific timeframe and assessment as per contract data will apply
	Invoices submitted to finance department on time and with correct order numbers
	Cost control and efficiency improvements
	Attach third party quotation/invoice for any third-party financial transaction
	Submit financial statements on monthly basis
Uniforms	To be properly dressed in overalls with company name on the back for identification. Must be clearly visible and neat.
Quality of workmanship	Work to be done according to correct engineering practices and standards.
	Workmanship to be of a good quality
Submission of safety documents to ACSA safety department on monthly basis	Adhering to OHS Act
	No safety incidents

Identification of Contractors On-Site

It is expected that contractors wear visible company uniform when entering the premises as a form of identification.

Continuous Improvement Program and the Computerised 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. Contract to provide a detailed annual proposal to the employer and the implementation thereof will be at employer's discretion.

1. An improvement in the availability of systems
2. An improvement on the maximum number of short ships attained
3. An improvement on the in-system time
4. An improvement on the minimization of spares holding (for example by increasing Mean Time to Failure of components) 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.

ACSA has implemented a Computerised Maintenance Management System (CMMS). The Contractor shall take all reasonable actions to ensure that they facilitate successful implementation and execution of the CMMS work orders. 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.

Improvement Initiatives

ACSA, CTIA, encourages a practice of continual improvement and will welcome any proposal that will reduce the incidence of specific problems or occurrences improve work methodologies and also are of financial benefit to the organisation.

A contractor is required/ expected to present at least one (1) improvement initiatives twice a year.

7.2 Management meetings

The Contractor will be expected to attend meetings relating to Safety, maintenance, contract management and other issues that may arise from time to time on monthly basis or any other prescribed terms. 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. There will be minutes kept for this meeting for record purposes.

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Safety audit	Monthly on last Thursday of every month at 10H00	SOB ACSA Admin offices	ACSA Safety Dept. and Contractor.
Risk register and compensation events	Monthly on last Thursday of every month at 10H00	SOB ACSA Admin offices	Employer and Contractor.
Overall contract progress and feedback	Monthly on last Thursday of every month at 10H00	SOB ACSA Admin offices	Employer and Contractor

Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *service*. Records of these meetings shall be submitted to the *Service Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

7.3 *Contractor*'s management, supervision and key people

Human resources

The following minimum standards shall apply to resourcing:

1. Regarding a first line response to any breakdown of the HVAC. Taking into account current airport access control infrastructure and security arrangements and taking into account the physical layout of the plants, the Contractor shall ensure a sufficient quantity of staff in order to meet or exceed the Service Level Agreement as per **Annex I**

2. The rostered maintenance staff compliment shall be sufficient to perform all required preventative and reactive/breakdown maintenance for each month. Cost incurred by the contract should be covered by maintenance fees unless outside OEM maintenance specification or unless ad-hoc.

3. During operational hours, the Contractor must have sufficient personnel to successfully attend to at least two simultaneous breakdowns as per contract requirements.

4. During operational hours, the Contractor must have Site Manager who:
    a) Is suitably qualified and experienced to resolve breakdowns and system stoppages of a nature that would require a person with HVAC knowledge, Electronics and Mechanical training.
    b) Is suitably qualified and experienced to work on any electrical panels and mechanical components.
    c) Is able to successfully interact with Fire Protection Service Provider and OEM "hotline" personnel.

d) Is of a level of seniority to successfully direct and manage Contractor staff and possible sub-contractors when there is a breakdown and can successfully interact with airport operational staff and airport management.

5. The Contractor shall assume responsibility for resolving any issue that might be experienced from time to time with the HVAC system. This will relate to any problem that might be experienced with the HVAC System and its components.

6. As part of his duties the Contractor:
   a) Shall ensure that (at his cost) back-ups are current and available on site (including all required spares that might be necessary to effect restores).
   b) Shall ensure that other faults/issues outside the scope of this contract but impacting on the HVAC System are expedited with the relevant persons.
   c) Shall submit preliminary incidents reports to the ACSA Service Manager regarding the cause and resolution of faults within 24 hrs of each eventuality.
   d) Shall submit full incidents reports to the ACSA Service Manager regarding the cause and resolution of faults within 48 hrs of each eventuality after the incident has been resolved.
   e) Shall maintain an up-to-date HVAC controls configuration drawing and keep it readily available on site.
   f) Shall, within reason, remain up to date with changes to the ACSA- HVAC System and build professional work relationships with all relevant parties, whether it be OEM or ACSA contractors or other.

All the information to the above breakdowns and stoppages exceeding agreed response times shall be logged with the ACSA IMC (Infrastructure Monitoring and Control department) at (021) 937 1257 or email CIAHELPDESK@airports.co.za

Conversely once the problem has been resolved the contractor will advise the IMC (Infrastructure Monitoring and Control department) at (021) 937 1257.

7.4 Provision of bonds and guarantees

The form in which a bond or guarantee required by the *conditions of contract* is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.4, Sureties.

7.5 Documentation control

All contractual communications will be in the form of properly compiled letters or forms attached to e-mails and not as a message in the e mail itself.

The contractor will submit maintenance and inspection reports after each service in report format agreed between the service manager and the contractor.

A list of attainable replacements parts, by part number shall be furnished when requested by Service Manager and the contractor will be responsible to maintain an up-to-date inventory of commonly replaced spare parts by parts number.

7.6 Invoicing and payment

The contractor will submit financial statement on monthly basis. On the last day of each month, the Service Provider shall deliver original invoices to the Company in respect of the Services. The invoice must contain the following minimum information and/or be substantiated by the following documentation:

- amount due in respect of VAT.
- the Service Provider's VAT registration number.
- such additional information and/or documentation as the Company may reasonably require from time to time.

Payment will take place within 30 (Thirty) Business Days after receipt by the Company of a duly prepared original invoice.

All payments shall be made by electronic transfer into the Service Provider's bank account, initially being the account set out in (Contract Data) hereto.

The Company may set off any amounts due and payable from the Service Provider pursuant to the terms of this Agreement as per **Annex I** – Low service damages against any amounts payable by the Company to the Service Provider on any invoice. If the amounts payable by the Service Provider to the Company exceed the amounts payable by the Company to the Service Provider pursuant to an outstanding invoice under this Agreement, then, at the Company's option, the Service Provider shall either issue a credit note for the net amount which the Company may set off against any other invoices rendered by the Service Provider, or promptly pay the amount to the Company.

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

The Contractor shall address the tax invoice to
ACSA Employee Name: _____
and include on each invoice the following information:

Name and address of the Contractor and the Service Manager.
The contract number and title.
Contractor's VAT registration number.
The Employer's VAT registration number **4930138393.**
Description of service provided for each item invoiced based on the Price List.
Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT.
(add other as required)

Electronic payments

The Contractor should arrange with ACSA's finance department for making all payments electronically

7.7 Contract change management

Use of standard forms
Management of the works

It is noted that:

a) The required labour resources and skills for this contract is prescribed in detail and will be a measure in calculating the monthly contract fee. The contractor is fully responsible to ensure that labour resources remain adequate in order to maintain required service levels and system performance levels as prescribed in Section 6 and 7.1 "The contractor's plan for the service". Only in the event were ACSA prescribes certain additions to the labour force (over and above to what is already prescribed), will that particular labour resource be included as a measurable item in the Activity Schedule.
b) The prices per activity are based on the total "package" and should one activity be removed from the contract scope the other prices will be reviewed by the Contractor as well.
c) Personal computers will be purchased by the contractor for administration of the contract.
d) Provisional parking fees will be made, if the contractor's staff are utilising the ACSA public parking.
e) The contractor to pay telephone costs, if utilising any telephone linked to ACSA telephone network.
f) The contract to provide own computers and administration material required to operate during the duration of this contract.
g) The contractor to pay for own office rental fees, if the contractor's staff are utilising the ACSA office areas.

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.

Incidents and Events Reports

The contractor shall conduct RCA (root cause analysis) for incidents and events encountered on the infrastructure and submit a detail technical incident report within 48hrs.

7.8 Records of Defined Cost to be kept by the *Contractor*

Daily records

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

The Contractor shall keep in a safe place every statutory certification record book detailing inspection and test, maintenance, examination and any related incidents. 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 file will result in immediate cancellation of the contract**

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. COP of each chiller compared to design.
3. **ENERGY Consumption of the HVAC plant compared to previous year in same period.**
4. Energy and water optimisation activities conducted.
5. Maintenance work (including % of scheduled maintenance work completed)
6. Daily checks performed.
7. Maintenance plan for the next month
8. The latest spares inventory
9. Assets register up to date including equipment data.
10. Root cause analysis records
11. Safety/Environmental or legislative issues and compliance
12. Outstanding maintenance/contractual issues

The contractor shall keep copies of all reports for at least 3 years. All reports shall be in a format as agreed with the Service Manager from time to time. **Further if the information provided is deemed insufficient Service Manager/Contract manager has the right to withhold the monthly fee until the sufficient information is provided.**

7.9 Insurance provided by the *Employer*

It is important that the Contractor recognises that his risks include those shown in C1.4. Consequently, even if such insurance are effected by the Employer, the Contractor should satisfy himself as to the adequacy of the policy and cover.

The Contractor should inform the Service Manager of any discrepancy between the Employer-provided insurances as stated in the Contract Data.

7.10 Training workshops and technology transfer

The contractor will perform on job training workshops when required, as well as any obligation for technology transfer being included as part of the service or at the end of the service period.
Training of ACSA staff and/or other stakeholders on HVAC system, and their Components and its operation
- 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

The ACSA 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.

7.11 Design and supply of Equipment

The Contractor shall ensure that the design is fit for the purpose intended. As far as applicable to maintenance and operations, the design will be in accordance with the mutually agreed specifications.

The *Contractor* is still liable if, after having made the equipment to details have been accepted, it fails because it did not comply with the Service Information. Failure to comply gives the Service Manager the right, but not the obligation, to reject the design.

7.12 Things provided at the end of the *service period* for the *Employer*'s use

7.12.1 Equipment

The clause requires the Contractor to return to the Employer at the end of the service period things which have been provided by the Employer for the Contractor's use i.e. The inventory materials and spares that were purchased by the Employer during the tenure of the contract should be returned provided the contractor still holds some in stock and any other equipment that was purchased by the Employer.

7.12.2 Information and other things

The Contractor grants to the Employer, with effect from the starting date or, in the case of documents or other matters not yet in existence, with effect from the creation thereof (and notwithstanding the Completion or termination of this contract),
- An irrevocable royalty-free non-exclusive license to use all of the documents provided to Provide the Services (including, but not limited to calculations, computer programmes and other software, drawings, manuals, models and other documents of a technical nature), for any purpose whatsoever, including for the purpose of operating, repairing, maintaining, dismantling, re-assembling and making adjustments to all parts of the Services. The Contractor procures that each Subcontractor executes all and any further documents and takes all and any other actions as may be required in order to give effect to this license.
- After the term service, the contractor shall return all valid permits to the Service Manager including the permits of all contractor staff that had service terminated.

8 Health and safety, the environment and quality assurance

8.1 Health and safety risk management

The Contractor shall comply with the health and safety requirements contained under C1.3: Occupational Health and Safety Agreement of this Service Information.

Addition to the above the **Annexes J and U** will be applicable.

8.2 Environmental constraints and management

The Contractor shall comply with the environmental criteria and constraints stated in below including **Annex L**:

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

8.3 Quality assurance requirements

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.

9 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.

Spare Parts Requirements

The contractor shall provide spare parts list for repairs of each unit and ensures the supply of replacement parts are manufactured by the original equipment manufacturers(OEM) or parts are substantiated as equal by the Contractor and shall be approved by ACSA representative. The contractor shall have readily sufficient available spares for delivery and installation/repairs for HVAC. Maintenance under this contract shall provide a constant, high-quality service to properly protect all equipment from deterioration and to provide constant peak performance of HVAC resulting in a minimum of down time to the system.

A list of attainable replacements parts by part number shall be furnished every month and when requested by Service Manager and the contractor will be responsible to maintain an up-to-date inventory and charged ACSA accordingly. It should be noted the failure from the contractor to keep an up-to-date inventory it will be the responsibility of the service provider to source the required spares and be available within 24 Hours in case of breakdown or need for the spares. The contractor will be responsible for providing all the critical spares foreseeable for the use in the HVAC Controls Systems.

9.1 People

9.1.1 Minimum requirements of people employed

Refer to **Annex I**

9.1.2 BBBEE and preferencing scheme

1) In terms of the PPPFA Regulation 4, an organ of state can apply pre- qualifying criteria to advance certain designated groups
2) Only tenderers meeting the following criteria may submit proposals:
   - a tenderer having a stipulated minimum B-BBEE status level of contributor 1 or 2; and
   - an EME or QSE; and
   - a tenderer subcontracting a minimum of 30% to-
     (i) an EME or QSE which is at least 51% owned by black people; or
     (ii) an EME or QSE which is at least 51% owned by black people who are youth; or
     (iii) an EME or QSE which is at least 51% owned by black people who are women; or
     (iv) an EME or QSE which is at least 51% owned by black people with disabilities; or
     (v) an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships; or
     (vii) an EME or QSE which is at least 51% owned by black people who are military veterans;
3) By submitting a Proposal, the bidder certifies that the information and documents provided are true, correct and devoid of any fraudulent misrepresentations. ACSA reserves its right to seek further legal action in the event that the bidder fails to comply with this paragraph.
4) A bidder that fails to meet the above- mentioned pre-qualification criteria, will be disqualified.

9.2 Subcontracting

9.2.1 Preferred subcontractors

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.

9.2.2 Subcontract documentation, and assessment of subcontract tenders

Refer to point 9.2.1

9.2.3 Limitations on subcontracting

Refer to point 9.2.1

9.2.4 Attendance on subcontractors

The contractor shall at his own cost provide the following general attendance on the subcontractors

- Access to the site and places where the subcontractor work is to be carried out, including the reasonable related requirements which belongs to the contractor
- Provision of water and lighting and all other requirements
- To be part of the monthly arranged meeting with the service manager

9.3 Plant and Materials

9.3.1 Specifications

Plant and Materials are defined as items intended to be included in the Affected Property. This refers to replacement of worn or defective parts, routine replacement as part of regular preventative maintenance and supply of spare parts. Therefore, it will be prerogative of the Service provider in consultation with Service

Manager how repairs are carried out - can the item be fixed up or must it be replaced by a new one. All new parts should be replaced with original OEM prescribed parts and the quality should be in accordance with SABS, SANS, ANSI standards.

9.3.2 Correction of defects

Service provider in consultation with Service Manager will decide how repairs are carried out - can the item be fixed up or must it be replaced by a new one. The repairs or replacement must be in line with the service level agreement as stated in the service information **Annex I** to avoid low service damages. Further the defect free liability period will be applicable for any work that has been executed.

9.3.3 *Contractor*'s procurement of Plant and Materials

It will be the contractor's responsibility to make sure is to order, codify, expedite, freight, import, transport to the Affected Property and deliver and store procured parts and materials in the correct manner before installation. The Employer may require warranties from suppliers to be in favour of the Employer and not just to the Contractor. The Employer may also need schedules of vendor data for his own use after the end of the service period.

The Contractor will respect OEM warrantees to ACSA at all times 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 at all times.

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 will have to build relationships with the various key OEM's.
The Contractor must adhere to all airport requirements regarding fire, health and safety when procuring replacement parts and/or other equipment or spares.

9.3.4 Tests and inspections

The test and inspection will be applicable as per Annex K and including when inspections and tests are to be carried out by agents of the Employer for the new installation , reports and/or certificates must be submitted.

10 Working on the Affected Property

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 ACSA's business. Therefore, within reason and with prior arrangement with the Contractor, ACSA might require the following from time to time:

- Assisting with emergency repairs on equipment excluded from this Contract
- Assisting with operations relating to breakdowns on equipment excluded from this Contract
- **Re-scheduling of work to accommodate other contractors or operational requirements**
- 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 System
- Providing access to other contractors
- Attending co-ordination and planning meetings
- Removing rubble and/or equipment from site
- Training of ACSA staff and/or other stakeholders
- Co-operating with ACSA Security relating to security issues
- Use of guards and hoarding is priority to prevent accident on public patrons and stakeholders when working is taking place.
- Notification of works and hot works permits must be acquired from time to time if such works require the need.

The ACSA 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.

10.1 *Employer*'s site entry and security control, permits, and site regulations

ACSA CTIA site is regarded as a National Key Point of Entry
The following National Key Point Requirements shall be adhered to:

- Criminal clearance check
- Zero alcohol tolerance
- Access to site through valid Permits
- Medical Clearance Certification

Service provider staff are not allowed to operate without valid permits at any time and Service Manager has a right to instruct the individuals contravening permit rules to leave the site and the service provider will be held accountable, and this may lead to contract termination.

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 in order 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

10.2 People restrictions, hours of work, conduct and records

ACSA reserves the right to verify all personnel employed under this contract. Furthermore, ACSA reserves the right to order that personnel that are not adequately qualified or suited for this contract are removed from the site. **It is very important that the Contractor to note some restrictions and hours of work may apply to this contract to avoid operation interruption as a result, night work will be unavoidable, and the Contractor should price accordingly**

10.3 Health and safety facilities on the Affected Property

Annex J and this part is in C1.3 in this contract

10.4 Environmental controls, fauna & flora

This matter has been dealt with in the general environmental requirements referred to **Annex L**

10.5 Cooperating with and obtaining acceptance of Others

The Contractor's duty is to co-operate with Others as expressed under the service information.

Where the Contractor's work may affect or interfere with the activities of the Employer or Others, it is important that interfaces in respect of physical location and timing are agreed by all parties and shown on the contractor's plan.

The exchange of information on health and safety matters is particularly important in order to comply with the law as well as with the contract.

10.6 Records of *Contractor*'s Equipment

The Contractor shall have all Tools and Special Equipment, necessary for the execution of the works, either on site or readily available at his/her premises and shall be recorded and certified as stipulated per table below. This cover owned or hired equipment's as long it will be used on site i.e. Scaffolding, cherry pickers, Ladders, Gas testing equipment

Tool Description	QTY	Date Acquired	Date Return

10.7 Equipment provided by the *Employer*

The Contractor must keep record of all the Tools and Special Equipment including OEM Manuals provided by the employer and be returned in good working condition/ replaced if misplaced after the contract duration has expired.

10.8 Site services and facilities

10.8.1 Provided by the *Employer*

The Contractor shall provide everything else necessary for Providing the Service. The Employer will provide in the way of power, water, telecoms, ablutions, fire protection and lighting (etc)

10.8.2 Provided by the *Contractor*

The Contractor is to provide in the way of accommodation, storage, vehicles and office equipment for its employees and these are not regarded as any restrictions or minimum requirements concerning the Contractor's and shall provide everything else necessary for providing the Service. The facilities upon the expiry of the contract shall be left in conducive/clean state.

10.9 Control of noise, dust, water and waste

Refer to Annex L

10.10 Hook ups to existing works

NONE

10.11 Tests and inspections

Refer to **Annex K**

11 List of drawings

11.1 Drawings issued by the *Employer*

None of the drawings issued by the *Employer* however OEM manuals with drawings are available for referencing.

12 Task Order

Refer to clause X 19. This Option can be used when all the services to be provided under the contract are to be instructed by Task Order, or when other services are being provided under the contract, and Tasks are added as necessary. For example, Ad hoc works.

Task Order form for use when work within the *service* is instructed to be carried out within a stated period of time on a Task-by-Task basis

Task Order No. **[●]** *service* .**[●]**

To: **[●]**.....
..... (*Contractor*)

I propose to instruct you to carry out the following task:

Description **[●]**

Starting date **[●]**

Completion Date **[●]**

Delay damages per week **[●]**

Please submit your price and programme proposals below.

Signed: Date

(For *Employer*)

Total of Prices for items of work on the Price List (details attached) R._____

Total of Prices for items of work not on the Price List (details attached). R._____

Total of the Prices for this Task Order R _____

The programme for the Task is ..... [ref] (attached)

Signed: Date

(For *Contractor*)

I accept the above price and programme and instruct you to carry out the Task Signed: Date: (For *Employer*)

13 ANNEXEXS TO C3 (Service Information)

Title	Annex number	Applicable or N/A
Schedule of Equipment	Annex A	Applicable
Equipment commissioning dates	Annex B	Applicable
Equipment life span	Annex C	Applicable
Site information	Annex D	Applicable
Risk assessment	Annex E	Applicable
Previous completed PMs	Annex F	Applicable
Root cause analysis	Annex G	Applicable
Estimated times for breakdowns/faults	Annex H	Applicable
Service Level Agreement	Annex I	Applicable
OHS Act Appointment by Contractor	Annex J	Applicable
Minimum Maintenance Programme	Annex K	Applicable
Environmental Terms and Conditions	Annex L	Applicable
Maintenance of HVAC systems Spares List	Annex M	Applicable
ACSA maintenance procedure for HVAC System - D080 025M	Annex N	Applicable
HVAC systems – standard operating procedure	Annex O	Applicable
Maintenance of HVAC systems – Electrical lockout procedure	Annex P	Applicable
Cape Town International Airport – operating instruction for HVAC	Annex Q	Applicable
HVAC systems - Fire Emergency procedure	Annex R	Applicable
IMCC procedure	Annex S	Applicable
Internal and external factors outside the contractor's control	Annex T	Applicable
ACSA Mechanical Standardised Minimum: legal requirements and minimum competency requirements	Annex U	Applicable
ACSA Inventory management procedure	Annex V	Applicable
Guarantees and warrantees to be maintained	Annex W	N/A

ANNEX A

SCHEDULE OF EQUIPMENT

Equipment to be serviced and inspected comprises of:

Chillers ancillary equipment, Cooling Towers, Pumps, Piping and Valves
BMS control system and associated field equipment's
Trane Chiller control summit system
Electrical Drive Motors & Ahu's / Fcu's
MCC and DB Panels
Fans / Extractions
Air Curtains
Split Units(Offices- Workshops), Hiross Units(Package units) - Wire Centres & ATNS Substations
VRV Systems
Grille / Diffusers / Disc Valves
Pipe, Duct work and insulation
Water treatment Dosing pumps, meters and ancillary equipment

The table below depicts the areas forming part of this maintenance contract.

Asset Description	Areas	Quantity /Units	Maintenance Frequency		
			Monthly	Quarterly	Yearly
Primary System- Chillers - Cooling Tower & Ancillary Equip(Pumps) + Elec Distribution Board	CTB, Terminal 1 and T5	12			
Secondary System- AHU+ Elec Distribution Boards	Terminal 1	29			
Secondary System- AHU+ Elec Distribution Boards	Terminal 2	9			
Secondary System- AHU+ Elec Distribution Boards	CTB	52			
Secondary FCU+ Electrical Distribution Boards	SOB	53			
Supply Ventilation Fresh Air Fans	CTB, Terminal 1 ,T5 ,Oval, SOB & PLB	131			
Smoke Fans ,Air Relief & Extraction Fans	CTB, Terminal 1 ,T5 ,Oval, SOB, Power & Lighting & Fire	115			
Cargo Smoke Vents	Cargo Warehouse	7			
Toilet Extraction Fans	CTB, Terminal 1 ,T5,Car Rentals , OVAL and SOB	76			
VRV and DX Split Units	Various Building	273			
IT Wire Centres	Dx Split & DX Down blower Units	85			

Restaurants Common Duct cleaning

Item	Area & Duct Connection	Length(m)	Restaurant
1	Ground Floor – Landside - Same Ducts		Steers
			Barcelo's
			Debonair
2	Ground Floor Landside – Separate duct		Woolworths
3	3rd Floor South – landside- Separate duct		KFC
4	3rd Floor North – landside- Separate duct		Mugg & Bean
5	3rd Floor - Common Duct		Ocean Basket
			Wimpy
			Primi Express
6	3rd Floor – Separate Duct		Spur
7	Ground Floor- Airside – Separate Duct		Mugg & Bean
8	Mezzanine Floor- Airside – Separate Duct		Alba lounge
9	Mezzanine Floor- Airside – Common Duct		Mugg & Bean
			Wimpy

DESCRIPTION	TYPE/UNIQE ID No.	MAKE	BUILDING	FLOOR	LOCATION
FRESH AIR FAN	FAN -1	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A5
FRESH AIR FAN	FAN -2	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A5
FRESH AIR FAN	FAN -3	SYSTEMAIR	AIR BRIDGE	2nd	Air Bridge-A5
FRESH AIR FAN	FAN -4	SYSTEMAIR	AIR BRIDGE	2nd	Air Bridge-A5
FRESH AIR FAN	FAN -5	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A6
FRESH AIR FAN	FAN -6	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A6
FRESH AIR FAN	FAN -7	SYSTEMAIR	AIR BRIDGE	2nd	Air Bridge-A6
FRESH AIR FAN	FAN -8	SYSTEMAIR	AIR BRIDGE	2nd	Air Bridge-A6
FRESH AIR FAN	FAN -9	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A7
FRESH AIR FAN	FAN -10	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A7
FRESH AIR FAN	FAN -11	SYSTEMAIR	AIR BRIDGE	2nd	Air Bridge-A7
FRESH AIR FAN	FAN -12	SYSTEMAIR	AIR BRIDGE	2nd	Air Bridge-A7
FRESH AIR FAN	FAN -13	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A8
FRESH AIR FAN	FAN -14	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A8
FRESH AIR FAN	FAN -15	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A9
FRESH AIR FAN	FAN -16	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A9
FRESH AIR FAN	FAN -17	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A10
FRESH AIR FAN	FAN -18	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A10
FRESH AIR FAN	FAN -19	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A11
FRESH AIR FAN	FAN -20	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A11
FRESH AIR FAN	FAN -21	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A12
FRESH AIR FAN	FAN -22	SYSTEMAIR	AIR BRIDGE	1st	Air Bridge-A12
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A5
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A5
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A6
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A6
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A7
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A7
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE -A8
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A8
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE -A9
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A9
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A10
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A10
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A11

SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A11
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A12
SPLIT UNIT	CASSETTE	GREE	AIR BRIDGE	1st	AIRBRIDGE - A12
FRESH AIR FAN	FAN	AMS	Car Rental	Ground	South Toilets FEMALE
FRESH AIR FAN	FAN	AMS	Car Rental	Ground	North Toilets FEMALE
FRESH AIR FAN	FAN	AMS	Car Rental	Ground	Capital, Tempest & Avis
FRESH AIR FAN	FAN	AMS	Car Rental	Ground	South Toilets
FRESH AIR FAN	FAN	AMS	Car Rental	Ground	North Toilets
FRESH AIR FAN	FAN	AMS	Car Rental	CEILING	First and Woodford
FRESH AIR FAN	FAN	AMS	Car Rental	CEILING	Hertz and Avis
FRESH AIR FAN	FAN	AMS	Car Rental	CEILING	Europe Car and Avis
FRESH AIR FAN	FAN	AMS	Car Rental	CEILING	Budget
SPLIT UNIT	MIDWALL	Daikin	Car Rental	Ground	Server Room: First Car
SPLIT UNIT	MIDWALL	Daikin	Car Rental	Ground	Server Room: Hertz
SPLIT UNIT	MIDWALL	Daikin	Car Rental	Ground	Server Room: Avis
SPLIT UNIT	MIDWALL	Daikin	Car Rental	Ground	Server Rm: Europcar
SPLIT UNIT	MIDWALL	Daikin	Car Rental	Ground	Server Room: Budget
SPLIT UNIT	MIDWALL	Daikin	Car Rental	Ground	Kiosk: Woodford
SPLIT UNIT	A/C SPLIT UNIT	Daikin	Car Rental	Ground	Kiosk: First Car
SPLIT UNIT	A/C SPLIT UNIT	Daikin	Car Rental	Ground	Kiosk: Thrifty
SPLIT UNIT	A/C SPLIT UNIT	Daikin	Car Rental	Ground	Kiosk: Hertz
SPLIT UNIT	A/C SPLIT UNIT	Daikin	Car Rental	Ground	Kiosk: Avis
SPLIT UNIT	A/C SPLIT UNIT	Daikin	Car Rental	Ground	Kiosk: Europcar
SPLIT UNIT	A/C SPLIT UNIT	Daikin	Car Rental	Ground	Kiosk: Budget
SPLIT UNIT	A/C SPLIT UNIT	Daikin	Car Rental	Ground	Kiosk: Tempest
SPLIT UNIT	A/C SPLIT UNIT	Daikin	Car Rental	Ground	Kiosk: Capital
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Woodford
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	First Car
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	First Car
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	First Car

FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Thrifty
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Hertz
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Hertz
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Avis
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Avis
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Avis
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Avis
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Avis
UNDER CEILING (VRV_INDOOR)	Underceieling	Daikin	Car Rental	Ground	Europcar
MIDWALL (VRV_INDOOR)	Midwall	Daikin	Car Rental	Ground	Europcar
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Europcar
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Europcar
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Europcar
MIDWALL (VRV_INDOOR)	Midwall	Daikin	Car Rental	Ground	Bidvest
MIDWALL (VRV_INDOOR)	Midwall	Daikin	Car Rental	Ground	Bidvest
MIDWALL (VRV_INDOOR)	Midwall	Daikin	Car Rental	Ground	Bidvest
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Bidvest
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Bidvest
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Bidvest
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Tempest
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Tempest
FANCOIL (VRV_INDOOR)	Hideaway	Daikin	Car Rental	Ground	Capital
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 1 - VRV Capital & Tempest
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 1 - VRV Capital & Tempest
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 2, VRV Bidvest & Europcar

VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 2, VRV Bidvest & Europcar
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 2, VRV Bidvest & Europcar
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 3, VRV AVIS
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 3, VRV AVIS
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 4, VRV Hertz & Thrifty
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 4, VRV Hertz & Thrifty
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 5, VRV First & Woodford
VRV_OUTDOOR	Condensing Unit	Daikin	Car Rental	Ground	System 5, VRV First & Woodford
UN_SU	A/C SPLIT UNIT	YORK	Cargo Building	1st	CARGO
UN_SC	Console		Cargo Building	1st	Bid air
UN_SC	Console		Cargo Building	1st	Bidar
UN_SU	A/C SPLIT UNIT	GREE	Container (Battery Room)	1st	AIRFIELD
AIR HNDLING UNIT	AHU-1.4	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.1	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.10	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.11	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.12	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.13	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.14	HPI	CTB	Ground	North Plantroom
AIR HNDLING UNIT	AHU - 1.15	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.16	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.17	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.18	HPI	CTB	Ground	North Plantroom
AIR HNDLING UNIT	AHU - 1.19	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.2	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.20	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.21	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.22	HPI	CTB	1st	South Plantroom - Domestic Arrivals

AIR HNDLING UNIT	AHU - 1.23	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.24	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.25	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.26	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.27	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.28	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.29	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.3	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.30	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.31	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.32	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.33	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.34	HPI	CTB	1st	South Plantroom - Domestic Arrivals
AIR HNDLING UNIT	AHU - 1.35	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.36	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.37	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.5	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.6	HPI	CTB	1st	North Plantroom
AIR HNDLING UNIT	AHU - 1.7	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.8	HPI	CTB	1st	South Plantroom
AIR HNDLING UNIT	AHU - 1.9	HPI	CTB	1st	South Plantroom
CHILLER	CH1	TRANE	CTB	1st	South Plantroom
CHILLER	CH2	TRANE	CTB	1st	South Plantroom
CHILLER	CH3	TRANE	CTB	1st	South Plantroom
CHILLER	Ch4	TRANE	CTB	1st	South Plantroom
CHILLER	Ch5	TRANE	CTB	1st	South Plantroom

DX UNIT	ACSA - 1.1	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	ACSA - 1.2	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	Other 1.1	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	Other 1.3	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	Other 1.5	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	Other 1.7	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	SITA - 1.1	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	SITA - 1.2	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	UPS/Battery 1.1	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	UPS/Battery 1.2	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC - G.5	LIEBERT EMERSON	CTB	Ground	North Next to ATMS
DX UNIT	WC - G.6	LIEBERT EMERSON	CTB	Ground	North Next to ATMS
DX UNIT	WC / IT - 1.1	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.10	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.11	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.12	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.13	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.14	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.15	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.16	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.2	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.3	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.4	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.5	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.6	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.7	LIEBERT EMERSON	CTB	1st	Service Passage

DX UNIT	WC / IT - 1.8	LIEBERT EMERSON	CTB	1st	Service Passage
DX UNIT	WC / IT - 1.9	LIEBERT EMERSON	CTB	1st	Service Passage
EXTRACTION FAN	EF - 1.4	DONKIN	CTB	1st	First Floor
EXTRACTION FAN	EF - 2.9	DONKIN	CTB	1st	First Floor
EXTRACTION FAN	EF - G.3	DONKIN	CTB	1st	First Floor
SMOKE EXTRACTION FAN	SEF 1.2	DONKIN	CTB	1st	First Floor
SMOKE FAN	SF - 1.3	DONKIN	CTB	1st	First Floor
SMOKE FAN	SF - 1.4	DONKIN	CTB	1st	First Floor
SMOKE FAN	SF - 1.7	DONKIN	CTB	1st	First Floor
SMOKE FAN	SF - 1.8	DONKIN	CTB	1st	First Floor
LIFT SHAFT PRESSURISATION FAN	LCPF - 1.1	DONKIN	CTB	1st	First Floor
LIFT SHAFT PRESSURISATION FAN	LCPF - 1.2	DONKIN	CTB	1st	First Floor
SMOKE FAN	SF - 1.1	DONKIN	CTB	1st	First Floor
SMOKE FAN	SF - 1.2	DONKIN	CTB	1st	First Floor
SMOKE FAN	SF - 1.5	DONKIN	CTB	1st	First Floor
SMOKE FAN	SF - 1.6	DONKIN	CTB	1st	First Floor
EXTRACTION FAN	EF - 1.3	DONKIN	CTB	1st	First Floor
FAN	OAF - 1.1	DONKIN	CTB	1st	First Floor
SMOKE EXTRACTION FAN	S.E.F-1.2.1	DONKIN	CTB	1st	First Floor
SMOKE EXTRACTION FAN	SEF - 1.1	DONKIN	CTB	1st	First Floor
SMOKE EXTRACTION FAN	SEF - 1.2	DONKIN	CTB	1st	First Floor
SMOKE EXTRACTION FAN	SEF - 1.3	DONKIN	CTB	1st	First Floor
SMOKE EXTRACTION FAN	SEF - 1.4	DONKIN	CTB	1st	First Floor
SMOKE EXTRACTION FAN	SEF 1.1	DONKIN	CTB	1st	First Floor
EXTRACTION FAN	EF - UPS / Battery	SODECA	CTB	1st	First Floor
FAN COIL UNIT	FCU - 1.1	ECHO-AIRE	CTB	1st	First Floor - Exclusives Books Office
CONDENSOR WATER PUMP	COWP.1	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
CONDENSOR WATER PUMP	COWP.2	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
CONDENSOR WATER PUMP	COWP.3	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom

CONDENSOR WATER PUMP	COWP.4	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
CONDENSOR WATER PUMP	COWP.5	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
PRIMARY CHILLED WATER PUMP	PCWP. 1	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
PRIMARY CHILLED WATER PUMP	PCWP. 2	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
PRIMARY CHILLED WATER PUMP	PCWP. 3	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
PRIMARY CHILLED WATER PUMP	PCWP. 4	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
PRIMARY CHILLED WATER PUMP	PCWP. 5	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
SECONDARY CHILLED WATER PUMP	SCWP.1	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
SECONDARY CHILLED WATER PUMP	SCWP.2	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
SECONDARY CHILLED WATER PUMP	SCWP.3	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
SECONDARY CHILLED WATER PUMP	SCWP.4	D & D PUMPS	CTB	1st	First Floor - Chiller Plantroom
SPLIT UNIT	SPLIT UNIT	DAIKIN	CTB	1st	SITA OFFICE 1ST FLOOR SOUTH
SPLIT UNIT	SPLIT UNIT	DAIKIN	CTB	1st	SITA OFFICE 1ST FLOOR SOUTH
SPLIT UNIT	SPLIT UNIT	DAIKIN	CTB	1st	SAA CORE-ROOM 1ST FLOOR SOUTH
COOLING TOWER	CT1	Baltimore Air-cool Company	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
COOLING TOWER	CT2	Baltimore Air-cool Company	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
COOLING TOWER	CT3	Baltimore Air-cool Company	CTB	2nd	2nd Floor - Cooling Towers Outside Plant

COOLING TOWER	CT4	Baltimore air coil Company	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
COOLING TOWER	CT5	Baltimore air coil Company	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.1	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.10	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.2	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.3	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.4	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.5	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.7	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.8	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
LIFT SHAFT PRESSURISATION FAN	LCPF - R.2	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
LIFT SHAFT PRESSURISATION FAN	LCPF - R.3	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - 2.6	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
EXTRACTION FAN	EF - R.10	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
SMOKE FAN	SF - R.7	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
SMOKE FAN	SF - R.8	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
SMOKE FAN	SPF - R.2	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant

SMOKE FAN	SPF - R.3	DONKIN	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
FAN COIL UNIT	FCU - 1.2	ECHO-AIRE	CTB	2nd	2nd Floor - Cooling Towers Outside Plant
SPLIT UNIT	SPLIT UNIT	DAIKIN	CTB	2nd	2ND FLOOR WET REFUSE - SOUTH
AIR HNDLING UNIT	AHU - 3.1A	HPI	CTB	3rd	ACDB - 3/1 - 3rd Floor
AIR HNDLING UNIT	AHU - 3.1B	HPI	CTB	3rd	ACDB - 3/1 - 3rd Floor
AIR HNDLING UNIT	AHU - 3.2	HPI	CTB	3rd	ACDB - 3/2 - 3rd Floor
AIR HNDLING UNIT	AHU - 3.3	DONKIN	CTB	3rd	ACDB - 3/2 - 3rd Floor
DX UNIT	WC / IT - 3.1	LIEBERT EMERSON	CTB	3rd	Local Isolator - 3rd Floor
DX UNIT	WC / IT - 3.2	LIEBERT EMERSON	CTB	3rd	Local Isolator - 3rd Floor
DX UNIT	WC / IT - 3.3	LIEBERT EMERSON	CTB	3rd	Local Isolator - 3rd Floor
DX UNIT	WC / IT - 3.5	LIEBERT EMERSON	CTB	3rd	Local Isolator - 3rd Floor
DX UNIT	WC / IT - 3.7	LIEBERT EMERSON	CTB	3rd	Local Isolator - 3rd Floor
DX UNIT	WC / IT - 3.8	LIEBERT EMERSON	CTB	3rd	Local Isolator - 3rd Floor
EXTRACTION FAN	EF - 3.1	FAN	CTB	3rd	Local Isolator - 3rd Floor
EXTRACTION FAN	EF - 3.2	FAN	CTB	3rd	Local Isolator - 3rd Floor
EXTRACTION FAN	EF - 3.3	FAN	CTB	3rd	Local Isolator - 3rd Floor
EXTRACTION FAN	EF - 3.4	FAN	CTB	3rd	Local Isolator - 3rd Floor
EXTRACTION FAN	EF - R.8	DONKIN	CTB	3rd	Third Floor
EXTRACTION FAN	EF - R.3	DONKIN	CTB	3rd	Third Floor
EXTRACTION FAN	EF - R.4	DONKIN	CTB	3rd	Third Floor
EXTRACTION FAN	EF - R.5	DONKIN	CTB	3rd	Third Floor
SMOKE FAN	MUAF - 3.1	DONKIN	CTB	3rd	Third Floor
AIR HNDLING UNIT	AHU - 4.1	HPI	CTB	4th	4th Floor North Plantroom
AIR HNDLING UNIT	AHU - 4.2	HPI	CTB	4th	4th Floor North Plantroom
AIR HNDLING UNIT	AHU - 4.3	HPI	CTB	4th	4th Floor North Plantroom
AIR HNDLING UNIT	AHU - 4.4	HPI	CTB	4th	4th Floor South Plantroom

AIR HNDLING UNIT	AHU - 4.5	HPI	CTB	4th	4th Floor South Plantroom
AIR HNDLING UNIT	AHU - 4.6	HPI	CTB	4th	4th Floor South Plantroom
AIR HNDLING UNIT	AHU - 4.7	HPI	CTB	4th	4th Floor South Plantroom
AIR HNDLING UNIT	AHU - 4.8	HPI	CTB	4th	4th Floor North Plantroom
AIR HNDLING UNIT	AHU - 4.9	HPI	CTB	4th	4th Floor North Plantroom
DX UNIT	JOC - 4.1	LIEBERT EMERSON	CTB	4th	Fourth Floor
DX UNIT	JOC - 4.2	LIEBERT EMERSON	CTB	4th	Fourth Floor
EXTRACTION FAN	EF - R14	DONKIN	CTB	4th	Fourth Floor
SMOKE FAN	SF - R.9	DONKIN	CTB	4th	Fourth Floor
SMOKE FAN	SF - R10	DONKIN	CTB	4th	Fourth Floor
FRESH AIR FAN	ARF - R.1	DONKIN	CTB	4th	Fourth Floor
FRESH AIR FAN	ARF - R.2	DONKIN	CTB	4th	Fourth Floor
EXTRACTION FAN	E.F-R14	DONKIN	CTB	4th	Fourth Floor
EXTRACTION FAN	E.F-R15	DONKIN	CTB	4th	Fourth Floor
EXTRACTION FAN	EF - R.1	DONKIN	CTB	4th	Fourth Floor
EXTRACTION FAN	EF - R.2	DONKIN	CTB	4th	Fourth Floor
EXTRACTION FAN	EF - R.6	DONKIN	CTB	4th	Fourth Floor
EXTRACTION FAN	EF - R.9	DONKIN	CTB	4th	Fourth Floor
EXTRACTION FAN	EF - R13	DONKIN	CTB	4th	Fourth Floor
LIFT SHAFT PRESSURISATION FAN	LCPF - R.1	DONKIN	CTB	4th	Fourth Floor
FAN	OAF - R.1	DONKIN	CTB	4th	Fourth Floor
FAN	OAF - R.2	DONKIN	CTB	4th	Fourth Floor
SMOKE FAN	SF - R.1	DONKIN	CTB	4th	Fourth Floor
SMOKE FAN	SF - R.2	DONKIN	CTB	4th	Fourth Floor
SMOKE FAN	SF - R.3	DONKIN	CTB	4th	Fourth Floor
SMOKE FAN	SF - R.4	DONKIN	CTB	4th	Fourth Floor
SMOKE FAN	SF - R.5	DONKIN	CTB	4th	Fourth Floor
SMOKE FAN	SF - R.6	DONKIN	CTB	4th	Fourth Floor
STAIRCASE PRESSURISATION FAN	SPF - R.1	DONKIN	CTB	4th	Fourth Floor
AIR HNDLING UNIT	AHU - 1.38	HPI	CTB	1st	Outside Terminal 5
AIR HNDLING UNIT	AHU - 1.39	HPI	CTB	1st	Outside Terminal 5
DX UNIT	WC - G.1	LIEBERT EMERSON	CTB	Ground	Ground Floor
DX UNIT	WC - G.2	LIEBERT EMERSON	CTB	Ground	Ground Floor

DX UNIT	WC - G.3	LIEBERT EMERSON	CTB	Ground	Ground Floor
DX UNIT	WC - G.4	LIEBERT EMERSON	CTB	Ground	Ground Floor
DX UNIT	WC/IT - G.7	LIEBERT EMERSON	CTB	Ground	Ground Floor
DX UNIT	WC/IT - G.8	LIEBERT EMERSON	CTB	Ground	Ground Floor
EXTRACTION FAN	EF - G.1	DONKIN	CTB	Ground	Ground Floor
EXTRACTION FAN	EF - G.2	DONKIN	CTB	Ground	Ground Floor
EXTRACTION FAN	EF - G.3	DONKIN	CTB	Ground	Ground Floor
FAN	OAF - G.1	DONKIN	CTB	Ground	Ground Floor
EXTRACTION FAN	E.F REFUSE (S)	DONKIN	CTB	Ground	GRND FLOOR DRY REFUSE (SOUTH)
EXTRACTION FAN	EF - R.11	DONKIN	CTB	Ground	Ground Floor
EXTRACTION FAN	EF - R.12	DONKIN	CTB	Ground	Ground Floor
EXTRACTION FAN	EF - R.7	DONKIN	CTB	Ground	Ground Floor
FAN	OAF - 1.3	DONKIN	CTB	Ground	Ground Floor
FAN	OAF - G.2	DONKIN	CTB	Ground	Ground Floor
FAN	OAF - G.3	DONKIN	CTB	Ground	Ground Floor
FAN	OAF - G.4	DONKIN	CTB	Ground	Ground Floor
FAN	OAF- 1.2	DONKIN	CTB	Ground	Ground Floor
EXTRACTION FAN	EF - Fuel . 1	DONKIN	CTB	Ground	Ground Floor - Generator Room
EXTRACTION FAN	EF - Fuel . 2	DONKIN	CTB	Ground	Ground Floor - Generator Room
EXTRACTION FAN	EF - Refuse	DONKIN	CTB	Ground	GRND FLOOR WET REFUSE (SOUTH)
SPLIT UNIT	SPLIT UNIT	DAIKIN	CTB	Ground	GRND FLOOR WET REFUSE (SOUTH)
SPLIT UNIT	UPS - G.1	DAIKIN	CTB	Ground	Ground Floor Substations
SPLIT UNIT	UPS - G.2	DAIKIN	CTB	Ground	Ground Floor Substations
SPLIT UNIT	UPS - G.3	DAIKIN	CTB	Ground	Ground Floor Substations
SPLIT UNIT	UPS - G.4	DAIKIN	CTB	Ground	Ground Floor Substations
SMOKE FAN	SF - M&G.1	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.18	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.19	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.20	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.21	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.22	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.23	DONKIN	CTB	Roof	Roof Space

SMOKE FAN	SF - R.10	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.11	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.14	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R.15	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R16	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF - R17	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF-R.12	DONKIN	CTB	Roof	Roof Space
SMOKE FAN	SF-R.13	DONKIN	CTB	Roof	Roof Space
EXTRACTION FAN	-	-	Fire Station Building	Ground	Fire Station
SPLIT UNIT	A/C SPLIT UNIT	DAIKIN	Fire Station Building	Ground	Fire Station
AIR HANDLING UNIT	AHU 1	SIEMANS	Fire Station Building	Mezzanine	Fire Station
CHILLER	Chiller	CIAT	Fire Station Building	Mezzanine	Fire Station
FAN_DIRECT	-	LUFT FAN	Fire Station Building	Mezzanine	Fire Station
FAN_DIRECT	-	ELTA FANS	Fire Station Building	Mezzanine	Fire Station
FAN_DIRECT	-	-	Fire Station Building	Mezzanine	Fire Station
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Office No. 1
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Office No. 1
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Office No. 1
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Office No. 1
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Fire Station, Mezzanine Level
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Fire Station, Mezzanine Level
CHILLED WATER PUMP	CHWP	EBARA	Fire Station Building	Mezzanine	Fire Station
SPLIT UNIT	A/C SPLIT UNIT	Mitsubishi	Fire Station Building	Mezzanine	Fire Station
SPLIT UNIT	A/C SPLIT UNIT	Mitsubishi	Fire Station Building	Mezzanine	Fire Station
SPLIT UNIT	A/C SPLIT UNIT	Mitsubishi	Fire Station Building	Mezzanine	Fire Station
SPLIT UNIT	A/C SPLIT UNIT	Mitsubishi	Fire Station Building	Mezzanine	Fire Station
FANCOIL UNIT	-	-	Fire Station Building	Ground	Fire Station
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Fire Station

FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Fire Station
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Fire Station
FANCOIL UNIT	-	-	Fire Station Building	Mezzanine	Fire Station
EXTRACTION FAN	-		Fire Station Building	Ground	Fire Station
EXTRACTION FAN	-	TOILET EXTRACT FAN.	Fire Station Building	Roof	Fire Station, ROOF UNITS
DX UNIT	HIROSS	LIEBERT EMERSON	Localizer 19	Ground	Airfield - South of Main Runway
DX UNIT	HIROSS	LIEBERT EMERSON	Localizer 01	Ground	Airfield - North of Main Runway
DX UNIT	HIROSS	LIEBERT EMERSON	VOR	Ground	Airfield - North East of Main Runway
DX UNIT	HIROSS	LIEBERT EMERSON	Glidepath 19	Ground	Airfield - North East of Main Runway
DX UNIT	HIROSS	LIEBERT EMERSON	glidepath 01	Ground	Airfield - South East of Main Runway
SPLIT UNIT	A/C SPLIT UNIT	YORK	Localizer 19	Ground	Airfield - South of Main Runway
SPLIT UNIT	A/C SPLIT UNIT	PANASONIC	glidepath 01	Ground	Airfield - South East of Main Runway
SPLIT UNIT	A/C SPLIT UNIT	YORK	Sub-station	Ground	Airfield
SPLIT UNIT	A/C SPLIT UNIT	YORK	Sub-station	Ground	Airfield
SPLIT UNIT	A/C SPLIT UNIT	DUNHAM BUSH	Sub-station	Ground	Airfield
SPLIT UNIT	A/C SPLIT UNIT	YORK	Sub-station	Ground	Airfield
SPLIT UNIT	A/C SPLIT UNIT	YORK	Sub-station	Ground	Airfield
SPLIT UNIT	A/C SPLIT UNIT	DAIKIN	ATNS Building	Ground	BELONGS TO AT&S
SPLIT UNIT	A/C SPLIT UNIT	DAIKIN	ATNS Building	Ground	BELONGS TO AT&S
SPLIT UNIT	A/C SPLIT UNIT	YORK	Sub-station	Ground	Airfield
SPLIT UNIT	A/C SPLIT UNIT	DUNHAM BUSH	Sub-station	Ground	Airfield
EXTRACTION FAN	Fan	-	Parkade 1	Ground	Katanga tickets
EXTRACTION FAN	Fan	-	Parkade 1	Ground	Male Toilets - Lobby A
EXTRACTION FAN	Fan	-	Parkade 1	Ground	Female Toilets Lobby A
EXTRACTION FAN	Fan	-	Parkade 1	Ground	Male Toilets - Lobby C
EXTRACTION FAN	Fan	-	Parkade 1	Ground	Female Toilets Lobby C

EXTRACTION FAN	Fan	S&P	Parkade 2	Ground	Katanga tickets
EXTRACTION FAN	Fan	S&P	Parkade 2	Ground	Katanga tickets - Kitchen
EXTRACTION FAN	Fan	S&P	Parkade 2	Ground	Male & Female Toilets
FRSH AIR FAN	Fan	S&P	Parkade 2	Ground	Bag spot
SPLIT UNIT	Console	York	Parkade 2	Ground	Muslim Prayer Facility
SPLIT UNIT	Console	York	Parkade 2	Ground	Orbis Security
SPLIT UNIT	Console	York	Parkade 2	Ground	Orbis Security
SPLIT UNIT	Console	York	Parkade 2	Ground	Police Station
SPLIT UNIT	Console	York	Parkade 2	Ground	Police Station
SPLIT UNIT	Console	York	Parkade 2	Ground	Police Station
SPLIT UNIT	Console	York	Parkade 2	Ground	Police Station
SPLIT UNIT	Console	York	Parkade 2	Ground	Police Station
SPLIT UNIT	Console	York	Parkade 2	Ground	Police Station
SPLIT UNIT	Console	York	Parkade 2	Ground	Muslim Prayer Facility
SPLIT UNIT	Console	York	Parkade 2	Ground	Muslim Prayer Facility
SPLIT UNIT	Console	York	Parkade 2	Ground	Muslim Prayer Facility
SPLIT UNIT	Mid-wall	Daikin	Parkade 2	Ground	Police Station
SPLIT UNIT	Hideaway	Daikin	Parkade 2	Ground	Police Station
SPLIT UNIT	Mid-wall	Dunham Bush	Parkade 2	Ground	Katanga Pay point
SPLIT UNIT	Mid-wall	Dunham Bush	Parkade 2	Ground	Katanga Pay point
SPLIT UNIT	Mid-wall	Panasonic	Parkade 2	Ground	Katanga Executive Server Room
SPLIT UNIT	Mid-wall	Panasonic	Parkade 2	Ground	Katanga Executive Server Room
SPLIT UNIT	Hideaway	Panasonic	Parkade 2	Ground	Katanga Executive Office
SPLIT UNIT	Hideaway	Daiken	Parkade 2	Ground	Muslim Prayer Facility & Church
SPLIT UNIT	Cassette	Dunham Bush	Parkade 2	Ground	Muslim Prayer Facility
SPLIT UNIT	Cassette	Dunham Bush	Parkade 2	Ground	Muslim Prayer Facility
SPLIT UNIT	Hideaway	L.G.	Parkade 2	Ground	Permit Office
SPLIT UNIT	Hideaway	Samsung	Parkade 2	Ground	Permit Office
SPLIT UNIT	Mid-wall	Alliance	Parkade 2	Ground	Server Room
EXTRACTION FAN	Fan	-	Power & Lighting	Ground	Power & Lighting, M & E

EXTRACTION FAN	Fan	-	Power & Lighting	Ground	Power & Lighting, M & E
EXTRACTION FAN	Fan	-	Power & Lighting	Ground	Power & Lighting, M & E
EXTRACTION FAN	Fan	-	Power & Lighting	Ground	Power & Lighting, M & E
EXTRACTION FAN	Fan	-	Power & Lighting	Ground	Power & Lighting, M & E
EXTRACTION FAN	Fan	-	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Mitsubishi	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Defy	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Mitsubishi	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	YORK	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Mitsubishi	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Defy	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Daikin Inverter	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	McQuay	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	LG	Power & Lighting	Ground	Power & Lighting, M & E
SPLIT UNIT	A/C SPLIT UNIT	York	Power & Lighting	Ground	Power & Lighting, M & E Office
SPLIT UNIT	A/C SPLIT UNIT	LG	Power & Lighting	Ground	Power & Lighting, M & E
DX UNIT	HIROSS	LIEBERT HIROSS	SOB	1st	Wire Centre 19.1
DX UNIT	HIROSS	LIEBERT HIROSS	SOB	1st	Wire Centre 19.1
FANCOIL UNIT	AC1 -3	Air Options	SOB	1st	SOB, 1st Floor
FANCOIL UNIT	AC1 -4	Air Options	SOB	1st	SOB, 1st Floor

FANCOIL UNIT	AC1 -5	Air Options	SOB	1st	SOB, 1st Floor
FANCOIL UNIT	AC1 -6	Air Options	SOB	1st	SOB, 1st Floor
FANCOIL UNIT	AC1 -7	Air Options	SOB	1st	SOB, 1st Floor
FANCOIL UNIT	AC1 -8	Air Options	SOB	1st	SOB, 1st Floor
FANCOIL UNIT	AC1 -9	Air Options	SOB	1st	SOB, 1st Floor
SPLIT UNIT	A/C SPLIT UNIT	York	SOB	1ST	Wire Centre 19.1
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	SOB	3rd	Core Room 01
SPLIT UNIT	FCU	Air Options	SOB	1st	ACSA Security New
FANCOIL UNIT	AC2 - 1	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC2 - 2	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC2 - 3	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC2 - 4	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC2 - 5	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC2 - 6	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC2 - 7	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC2 - 8	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC2 - 9	Air Options	SOB	2nd	SOB, 2nd Floor
FANCOIL UNIT	AC3 - 1	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 2	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 3	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 4	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 5	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 6	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 7	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 8	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 9	Air Options	SOB	3rd	SOB, 3rd Floor
FANCOIL UNIT	AC3 - 10	Air Options	SOB	3rd	SOB, 3rd Floor
SPLIT UNIT	A/C SPLIT UNIT	SAMSUNG	SOB	3rd	Core Room 01
SPLIT UNIT	A/C SPLIT UNIT	SAMSUNG	SOB	3rd	SOB Tetra Room 01
FANCOIL UNIT	ACLG - 1	Air Options	SOB	Lower Ground	Airside, Lower Ground Floor
FANCOIL UNIT	ACLG - 2	Air Options	SOB	Lower Ground	Airside, Lower Ground Floor
FANCOIL UNIT	ACLG - 3	Air Options	SOB	Lower Ground	Airside, Lower Ground Floor
FANCOIL UNIT	ACLG - 4	Air Options	SOB	Lower Ground	Airside, Lower Ground Floor
FANCOIL UNIT	ACG - 1	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 2	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 3	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 9	Air Options	SOB	Ground	Airside, Ground Floor

FANCOIL UNIT	ACG - 10	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 11	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 15	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 16	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 17	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 18	Air Options	SOB	Ground	Airside, Ground Floor
FANCOIL UNIT	ACG - 4	Air Options	SOB	Ground	Landside, Ground Floor
FANCOIL UNIT	ACG - 5	Air Options	SOB	Ground	Landside, Ground Floor
FANCOIL UNIT	ACG - 6	Air Options	SOB	Ground	Landside, Ground Floor
FANCOIL UNIT	ACG - 7	Air Options	SOB	Ground	Landside, Ground Floor
FANCOIL UNIT	ACG - 8	Air Options	SOB	Ground	Landside, Ground Floor
FANCOIL UNIT	ACG - 12	Air Options	SOB	Ground	Landside, Ground Floor
FANCOIL UNIT	ACG - 13	Air Options	SOB	Ground	Landside, Ground Floor
FANCOIL UNIT	ACG - 14	Air Options	SOB	Ground	Landside, Ground Floor
FANCOIL UNIT	ACG - 19	Air Options	SOB	Ground	Conference Centre - Landside
FANCOIL UNIT	ACG - 20	Air Options	SOB	Ground	Conference Centre - Landside
FANCOIL UNIT	ACG - 21	Air Options	SOB	Ground	Conference Centre - Landside
SPLIT UNIT	A/C SPLIT UNIT	Platonik	SOB	Lower Ground	Airside, Lower Ground Floor
SPLIT UNIT	A/C SPLIT UNIT	Platonik	SOB	Lower Ground	Airside, Lower Ground Floor
SPLIT UNIT	A/C SPLIT UNIT	Platonik	SOB	Lower Ground	Airside, Lower Ground Floor
SPLIT UNIT	A/C SPLIT UNIT	Platonik	SOB	Lower Ground	Airside, Lower Ground Floor
SPLIT UNIT	A/C SPLIT UNIT	Panasonic	SOB	Lower Ground	SAA Technical
SPLIT UNIT	A/C SPLIT UNIT	Panasonic	SOB	Lower Ground	bid air
SPLIT UNIT	A/C SPLIT UNIT	Airdale	SOB	Lower Ground	Swissport
SPLIT UNIT	A/C SPLIT UNIT	Carrier	SOB	Lower Ground	Swissport

SPLIT UNIT	A/C SPLIT UNIT	Daikin	SOB	1st	WC G1
SPLIT UNIT	A/C SPLIT UNIT	York	SOB	Unknown	
SPLIT UNIT	A/C SPLIT UNIT	York	SOB	3rd	
EXTRACTION FAN	Fan		SOB	Ground	landside
EXTRACTION FAN	Fan		SOB	Ground	
EXTRACTION FAN	Fan		SOB	3rd	
EXTRACTION FAN	Fan		SOB	3rd	
EXTRACTION FAN	Fan		SOB	Unknown	FAN SEIZED
EXTRACTION FAN	Fan	Donkin	SOB	3rd	
EXTRACTION FAN	Fan		SOB	2nd	
EXTRACTION FAN	Fan		SOB	1st	
EXTRACTION FAN	Fan		SOB	1st	
FRESH AIR FAN	Fan	Donkin	SOB	Lower Ground	SOB Airside, SA Express
FRESH AIR FAN	Fan	Donkin	SOB	Lower Ground	SOB, KLM
FRESH AIR FAN	Fan	Donkin	SOB	Ground	SOB, Menzies
FRESH AIR FAN	Fan	Donkin	SOB	Ground	SOB, Swissport
EXTRACTION FAN	Fans - Extract	Donkin	SOB	Ground	bid air Toilet Ext fan Female
EXTRACTION FAN	Fans - Extract	Donkin	SOB	Ground	bid air Toilet Ext Fan Male
EXTRACTION FAN	Fans - Extract	Donkin	SOB	Ground	Menzies F/M toilet
EXTRACTION FAN	Fans - Extract	Serial C	SOB	Lower Ground	SAA Express, Toilet
EXTRACTION FAN	Fans - Extract	Serial C	SOB	Lower Ground	SAA Express, Toilet
EXTRACTION FAN	Fan	-	SOB	Ground	SOB Grd Toilet
EXTRACTION FAN	Fan	-	SOB	Ground	SOB Grd Toilet
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	SOB	3rd	Tetra Room
SPLIT UNIT	A/C SPLIT UNIT	York	SOB	1st	JOC 3
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	SOB	1st	WC 19.1
SPLIT UNIT	A/C SPLIT UNIT	SAMSUNG	SOB	Unknown	AIRSIDE SAA
SPLIT UNIT	A/C SPLIT UNIT	SAMSUNG	SOB	Unknown	AIRSIDE SAA
SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	1st	SOB
SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	3rd	COURTYARD
SPLIT UNIT	A/C SPLIT UNIT	Daikin Indoor	SOB	3rd	Core Room 01
SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	Unknown	SOB 3/12
SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	Unknown	IT CENTRE
SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	Unknown	AIRSIDE
SPLIT UNIT	A/C SPLIT UNIT	ALLIANCE AIR	SOB	Unknown	SAA CONTROL RM
SPLIT UNIT	A/C SPLIT UNIT	ALLIANCE AIR	SOB	Unknown	SAA CONTROL RM
SPLIT UNIT	A/C SPLIT UNIT	ALLIANCE AIR	SOB	Unknown	SAA CONTROL RM

SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	Unknown	SOB
SPLIT UNIT	A/C SPLIT UNIT	DUNHAM BUSH	SOB	Unknown	SOB
SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	Unknown	SOB
SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	1st	JOC no1 SOB
SPLIT UNIT	A/C SPLIT UNIT	YORK	SOB	Unknown	SOB
TOILET EXTRACTION	FAN	Unknown	HIGH ACCESS	Ground	HIGH ACCESS
SPLIT UNIT	A/C SPLIT UNIT	Unknown	HIGH ACCESS	Ground	HIGH ACCESS
SPLIT UNIT	A/C SPLIT UNIT	Unknown	HIGH ACCESS	Ground	HIGH ACCESS
SPLIT UNIT	A/C SPLIT UNIT	Unknown	HIGH ACCESS	Ground	HIGH ACCESS
SPLIT UNIT	A/C SPLIT UNIT	Unknown	HIGH ACCESS	Ground	HIGH ACCESS
SPLIT UNIT	A/C SPLIT UNIT	Unknown	CENCURION	Ground	CENCURION
SPLIT UNIT	A/C SPLIT UNIT	Unknown	CENCURION	Ground	CENCURION
SPLIT UNIT	A/C SPLIT UNIT	Unknown	CENCURION	Ground	CENCURION
SPLIT UNIT	A/C SPLIT UNIT	Unknown	CENCURION	Ground	CENCURION
SPLIT UNIT	A/C SPLIT UNIT	Unknown	CENCURION	Ground	CENCURION
TOILET EXTRACTION	FAN	Unknown	G4S	Ground	G4S
SPLIT UNIT	A/C SPLIT UNIT	Unknown	G4S	Ground	G4S
SPLIT UNIT	A/C SPLIT UNIT	Unknown	G4S	Ground	G4S
TOILET EXTRACTION	FAN	Unknown	NEW SECURITY OFFICE	Ground	NEW SECURITY OFFICE
SPLIT UNIT	A/C SPLIT UNIT	Unknown	NEW SECURITY OFFICE	Ground	NEW SECURITY OFFICE
SPLIT UNIT	A/C SPLIT UNIT	Unknown	NEW SECURITY OFFICE	Ground	NEW SECURITY OFFICE
SPLIT UNIT	A/C SPLIT UNIT	Unknown	NEW SECURITY OFFICE	Ground	NEW SECURITY OFFICE
SPLIT UNIT	WINDOW	-	Substation	Ground	AIRFIELD
SPLIT UNIT	A/C SPLIT UNIT	DUNHAM BUSH	Substation	Ground	AIRFIELD
SPLIT UNIT	A/C SPLIT UNIT	YORK	Substation	Ground	AIRFIELD
SPLIT UNIT	A/C SPLIT UNIT	YORK	Substation	Ground	AIRFIELD
SPLIT UNIT	WINDOW	YORK	Substation	Ground	AIRFIELD
FANCOIL UNIT	FCU	Thermopac	T1	1st	Airside 1st Floor Passage
AIR HNDLING UNIT	AHU 13	Thermopac	T1	1st	Plantroom0 1st Floor Duty Free

AIR HNDLING UNIT	AHU 14	Thermopac	T1	1st	Plantroom0 1st Floor Duty Free
AIR HNDLING UNIT	AHU 15	Thermopac	T1	1st	Plantroom0 1st Floor Duty Free
CHILLER	CHI 1	Trane	T1	1st	Chiller Plant Room, Outside
CHILLER	CHI 2	Trane	T1	1st	Chiller Plant Room, Outside
CHILLER	CHI 4	Trane	T1	1st	Chiller Plant Room, Outside
CHILLER	CHI 5	Trane	T1	1st	Chiller Plant Room, Outside
FAN	FAN	Elta Fans	T1	1st	Plantroom 0, EAF - 5
FAN	FAN	Elta Fans	T1	1st	Plantroom O, EAF - I/N
FAN	FAN	Donkin Fans	T1	1st	Chiller Plant Room, Outside
FAN	FAN	Elta Fans	T1	1st	BA Toilet - Duty Free Area
PUMPS	CWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	CWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	CWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	CWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	CWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	CWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	PCWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	PCWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	SCWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	SCWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
PUMPS	SCWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1

PUMPS	SCWP	Provincial Pumps	T1	1st	Chiller Plant Room, Terminal 1
SPLIT UNIT	A/C SPLIT UNIT	York	T1	1st	Terminal 1, Chiller Plant Room
SPLIT UNIT	A/C SPLIT UNIT	York	T1	1st	Terminal 1, Chiller Plant Room
SPLIT UNIT	A/C SPLIT UNIT	Daikin	T1	1st	Wire Centre 4, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	Panasonic	T1	1st	Wire Centre 4, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	York	T1	1st	Wire Centre 1, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	Daikin	T1	1st	Wire Centre 1, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	Daikin	T1	1st	Wire Centre 2, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	Daikin	T1	1st	Wire Centre 2, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	York	T1	1st	Wire Centre 2, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	Daikin	T1	1st	Wire Centre 3, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	York	T1	1st	Wire Centre 3, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	York	T1	1st	Switch Room South, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	York	T1	1st	Switch Room South, Duty Free
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	T1	1st	Emirates, Terminal 1
SPLIT UNIT	A/C SPLIT UNIT	McQuay	T1	1st	Virgin Atlantic, Terminal 1
COOL TOWER	Cool Tw Big	Baltimore	T1	2nd	Cooling Tower Outside
COOL TOWER	Cool Tw Small	Baltimore	T1	2nd	Cooling Tower, Terminal 1
FAN	FAN	Elta Fans	T1	2nd	Duty Free, BA Lounge
FAN	FAN	Nictra	T1	2nd	Duty Free, BA Lounge
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside Int Dept
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside Int Dept
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside Int Dept
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside Int Dept
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside Int Dept

FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside Int Dept
FAN	FAN	-	T1	2nd	Duty Free Airside Int Dept
FAN	FAN	-	T1	2nd	Duty Free Airside Int Dept
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside Int Dept
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside SAA
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside
FAN	FAN	Elta Fans	T1	2nd	Duty Free Airside
FAN	FAN	S & P	T1	2nd	UPS Room
FAN	FAN	Luft Fans	T1	2nd	Toilet ext fan Bag Collect
FANCOIL UNIT	FCU	Thermopac	T1	Ground	B Gate, Boarding Gate,
AHU	AHU 11	Trane	T1	Ground	Plantroom 5 Silver doors
AHU	AHU 2	Trane	T1	Ground	Plantroom 2 Silver doors
AHU	AHU 6	Trane	T1	Ground	Plantroom 3 Silver doors
FAN	FAN	Elta Fans	T1	Ground	Bondeb Store
FCU	FCU	Fan Coil	T1	Ground	Police Intelligence Office
SPLIT UNIT	A/C SPLIT UNIT	York	T1	Ground	Wire Centre 6 - B Gates
SPLIT UNIT	A/C SPLIT UNIT	York	T1	Ground	Terminal 1, Delivery
AHU	AHU 10	Trane	T1	Mezzanine	Plantroom 4, Terminal 1
AHU	AHU 12	Thermopac	T1	Mezzanine	Plantroom 5, Level 2
AHU	AHU 16	Thermopac	T1	Mezzanine	Plantroom 2, Level 2
AHU	AHU 17	Thermopac	T1	Mezzanine	Plantroom 2, Level 2
AHU	AHU 18	Thermopac	T1	Mezzanine	Plantroom 3, Level 2
AHU	AHU 19	Thermopac	T1	Mezzanine	Plantroom 3, Level 2
AHU	AHU 20	Thermopac	T1	Mezzanine	Plantroom 3, Level 2
AHU	AHU 21	Thermopac	T1	Mezzanine	Plantroom 3, Level 2

AHU	AHU 22	Thermopac	T1	Mezzanine	Plantroom 4, Level 2
AHU	AHU 23	Thermopac	T1	Mezzanine	Plantroom 4, Level 2
AHU	AHU 24	Thermopac	T1	Mezzanine	Plantroom 4, Level 2
AHU	AHU 25	Thermopac	T1	Mezzanine	Plantroom 5, Level 2
AHU	AHU 26	Thermopac	T1	Mezzanine	Plantroom 5, Level 2
AHU	AHU 27	Thermopac	T1	Mezzanine	Plantroom 5, Level 2
AHU	AHU 3	Trane	T1	Mezzanine	Plantroom 2, Level 2
AHU	AHU 4	Trane	T1	Mezzanine	Plantroom 2, Level 2
AHU	AHU 5	Trane	T1	Mezzanine	Plantroom 2, Level 2
AHU	AHU 7	Trane	T1	Mezzanine	Plantroom 3, Level 2
AHU	AHU 8	Trane	T1	Mezzanine	Plantroom 3, Level 2
AHU	AHU 9	Trane	T1	Mezzanine	Plantroom 4, Level 2
FAN	FAN	Elta Fans	T1	Mezzanine	Plantroom 2
FAN	FAN	Elta Fans	T1	Mezzanine	Plantroom 2
FAN	FAN	Elta Fans	T1	Mezzanine	Plantroom 3
FAN	FAN	Elta Fans	T1	Mezzanine	Plantroom 3
FAN	FAN	Elta Fans	T1	Mezzanine	Plantroom 4
FAN	FAN	Elta Fans	T1	Mezzanine	Plantroom 4
FAN	FAN	Elta Fans	T1	Mezzanine	Plantroom 5
AIR HNDLING UNIT	AHU 1	Trane	T1	-	Arrivals Hall, Plantroom 1,
FAN	FAN	-	T1	-	Plantroom 2
FAN	FAN	-	T1	-	Plantroom 2
FAN	FAN	-	T1	-	Border Police Roof Space by AHU10
FAN	FAN	-	T1	-	Border Police Roof Space
FAN	FAN	-	T1	-	Border Police Roof Space
AIR HNDLING UNIT	AHU 1	Air Vent	T1	Mezzanine	ICON - Plant room
AIR HNDLING UNIT	AHU 1	No Name	T2	1st	Border Police Plantroom
AIR HNDLING UNIT	AHU 2	No Name	T2	1st	Border Police Plantroom

AIR HNDLING UNIT	AHU 3	No Name	T2	1st	Border Police Plantroom
AIR HNDLING UNIT	AHU 4	Thermopac	T2	1st	Border Police Plantroom
DX UNIT	HIROSS	Liebert Hiros	T2	1st	International - Core Room 2
DX UNIT	HIROSS	Liebert Hiros	T2	1st	International - Core Room 2
DX UNIT	HIROSS	Liebert Hiros	T2	1st	Terminal 2, Transal, Mezz Level
DX UNIT	HIROSS	Liebert Hiros	T2	1st	Terminal 2, Transal, Mezz Level
FAN	FAN	ZIEHL-EBM	T2	1st	Border Police, Toilet
FAN	FAN	ZIEHL-EBM	T2	1st	Border Police, Toilet
FAN	FAN	S & P	T2	1st	Border Police, Toilet
FAN	FAN	Elta Fans	T2	1st	Border Police, Toilet
FAN	FAN	Elta Fans	T2	1st	Border Police, Toilet
SPLIT UNIT	A/C SPLIT UNIT	SAMSUNG	T2	1st	Core Room 2
SPLIT UNIT	A/C SPLIT UNIT	York	T2	1st	Wire Centre - 5
SPLIT UNIT	A/C SPLIT UNIT	Dunham Bush	T2	1st	Border Police Office
SPLIT UNIT	A/C SPLIT UNIT	Daikin	T2	1st	Terminal 2, Transal, Mezz Level
SPLIT UNIT	A/C SPLIT UNIT	LG	T2	1st	I.C.T. POETC Building
SPLIT UNIT	A/C SPLIT UNIT	LG	T2	1st	I.C.T. POETC Building
SPLIT UNIT	A/C SPLIT UNIT	Air Nevo	T2	1st	SITA Office
SPLIT UNIT	A/C SPLIT UNIT	York	T2	1st	SITA Office
SPLIT UNIT	A/C SPLIT UNIT	York	T2	1st	SITA Office
SPLIT UNIT	A/C SPLIT UNIT	Air-Nevo	T2	1st	Core Room 2
AHU			T2	Basement	
AHU			T2	Basement	
AHU			T2	Basement	
FAN	EXT. FAN	Elta Fans	T2	Basement	
FAN	FAN	Donkin	T2	Basement	
SPLIT UNIT	A/C SPLIT UNIT	York	T2	Basement	Inside Sub-station
SPLIT UNIT	A/C SPLIT UNIT	York	T2	Basement	Inside Sub-station
FAN	FAN	S & P	T2	Mezzanine	Opposite Emirates

AHU	AHU 10	Thermopac	T2	Roof	Border Police
AHU	AHU 5	No Name	T2	Roof	Border Police
AHU	AHU 6	No Name	T2	Roof	Border Police
FAN	FAN	Elta Fans	T2	Roof	Border Police
FAN	FAN	Elta Fans	T2	Roof	Border Police
FAN	FAN	Elta Fans	T2	Roof	Border Police
COOL TOWER	Cooling Tower	Baltimore	T5	1st	Terminal 5, Outside
COOL TOWER	Cooling Tower	Baltimore	T5	1st	Terminal 5, Outside
AHU	AHU 1	No Name	T5	2nd	Terminal 5
AHU	AHU 2	No Name	T5	2nd	Terminal 5
AHU	AHU 3	No Name	T5	2nd	Terminal 5
AHU	AHU 4	No Name	T5	2nd	Terminal 5
AHU	AHU 5	No Name	T5	2nd	Terminal 5
CHI	Chiller 1	Trane	T5	Ground	Terminal 5
CHI	Chiller 2	Trane	T5	Ground	Terminal 5
CHI	Chiller 3	Trane	T5	Ground	Terminal 5
PUMPS	COWP 1	NONE	T5	Ground	Terminal 5
PUMPS	COWP 2	NONE	T5	Ground	Terminal 5
PUMPS	COWP 3	NONE	T5	Ground	Terminal 5
PUMPS	PCWP 1	NONE	T5	Ground	Terminal 5
PUMPS	PCWP 2	NONE	T5	Ground	Terminal 5
PUMPS	PCWP 3	NONE	T5	Ground	Terminal 5
PUMPS	SCWP 1	NONE	T5	Ground	Terminal 5
PUMPS	SCWP 2	NONE	T5	Ground	Terminal 5
PUMPS	SCWP 3	NONE	T5	Ground	Terminal 5
FAN	FAN	AMS	T5	Roof	Terminal 5, Roof
FAN	FAN	AMS	T5	Roof	Terminal 5, Roof
FAN	FAN	LUFT	T5	Roof	Terminal 5, Roof
FAN	FAN	AMS	T5	Roof	Terminal 5, Roof
FAN	FAN	AMS	T5	Roof	Terminal 5, Roof
FAN	FAN	AMS	T5	Roof	Terminal 5, Roof
FAN	FAN	AMS	T5	Roof	Terminal 5, Roof
FAN	FAN	AMS	T5	Roof	Terminal 5, Roof
FAN	FAN	AMS	T5	Roof	Terminal 5, Roof
FAN	FAN	LUFT	T5	Roof	Terminal 5, Roof
FAN		Donkin	T5	Roof	Terminal 5, Roof
FAN		Donkin	T5	Roof	Terminal 5, Roof
FAN	FAN	MIXFLOW	T5	Roof	Terminal 5, Roof
FAN		Elta	T5	Roof	Terminal 5, Roof
FAN		Buffalo	T5	Roof	Terminal 5, Roof
FANCOIL UNIT	FCU	AIRCON ENGIN	T5	Unknown	Terminal 5

FANCOIL UNIT	FCU	AIRCON ENGIN	T5	Unknown	Terminal 5
COOLING TOWER PUMPS 1	PUMPS	-	T5	Roof	Terminal 5
COOLING TOWER PUMPS 2	PUMPS	-	T5	Roof	Terminal 5
SPLIT UNIT	A/C SPLIT UNIT	DAIKIN	T5	Unknown	Court Yard
SPLIT UNIT	A/C SPLIT UNIT	DAIKIN	T5	Unknown	Court Yard
SPLIT UNIT	A/C SPLIT UNIT	DAIKIN	T5	Unknown	Court Yard
SPLIT UNIT	A/C SPLIT UNIT	York	T5	Unknown	Elec room
SPLIT UNIT	A/C SPLIT UNIT	Panasonic	T5	Unknown	BT Cape
SPLIT UNIT	A/C SPLIT UNIT	York	T5	Unknown	UPS Room
SPLIT UNIT	A/C SPLIT UNIT	DAIKIN	T5	Unknown	Case Key
SPLIT UNIT-CASSETTE	A/C SPLIT UNIT	MITSUBISHI	T5	FIRST	COMAIR
SPLIT UNIT	A/C SPLIT UNIT	MITSUBISHI	T5	Unknown	Human Resource
SPLIT UNIT	A/C SPLIT UNIT	DAIKIN	T5	Unknown	Wire Centre
SPLIT UNIT	A/C SPLIT UNIT	MITSUBISHI	T5	Unknown	737
SPLIT UNIT	A/C SPLIT UNIT	MITSUBISHI	T5	Unknown	SAA Lost Baggage
SPLIT UNIT	A/C SPLIT UNIT	MITSUBISHI	T5	Unknown	Baggage Room
SPLIT UNIT	A/C SPLIT UNIT	MITSUBISHI	T5	Unknown	Board Room
DX UNIT	DX SPLIT UNIT	unknown	T5	GROUND	Server Room Airside Offices Fox8
DX UNIT	DX SPLIT UNIT	unknown	T5	GROUND	Server Room Airside Offices Fox8
SPLIT UNIT	A/C SPLIT UNIT	York	T5	Unknown	Airside Offices Fox8
SPLIT UNIT	A/C SPLIT UNIT	York	T5	Unknown	Airside Offices Fox8
SPLIT UNIT	A/C SPLIT UNIT	York	T5	Unknown	Airside Offices Fox8
SPLIT UNIT	A/C SPLIT UNIT	York	T5	Unknown	Airside Offices Fox8
SPLIT UNIT	A/C SPLIT UNIT	GREE	T5	FIRST	Airliner Offices Fox8
AIR HANDLING UNIT	AHU	HPI	PROTOCOL LOUNGE	Ground	Ground Floor
EXTRACTION FANS	FAN	DONKIN	PROTOCOL LOUNGE	Ground	Ground Floor
EXTRACTION FANS	FAN	DONKIN	PROTOCOL LOUNGE	Ground	Ground Floor
EXTRACTION FANS	FAN	DONKIN	PROTOCOL LOUNGE	Ground	Ground Floor
SPLIT UNIT	A/C SPLIT UNIT	Daikin	PROTOCOL LOUNGE	Ground	Ground Floor

SPLIT UNIT	A/C SPLIT UNIT	Daikin	PROTOCOL LOUNGE	Ground	Ground Floor
PUMPS	PUMP	CHARLSON	Oval Office Building	Lower	Lower Ground Floor Store
EXTRACTION FANS	FAN	S&P MXVENT-TD	Oval Office Building	Basement	Basement Store Extraction
EXTRACTION FANS	EA G.1	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor Male
EXTRACTION FANS	EA G.2	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor Female
EXTRACTION FANS	EA 1.1	S&P MXVENT-TD	Oval Office Building	Ground	First Floor Male
EXTRACTION FANS	EA 1.2	S&P MXVENT-TD	Oval Office Building	Ground	First Floor Female
EXTRACTION FANS	EA 2.1	S&P MXVENT-TD	Oval Office Building	Ground	Second Floor Male
EXTRACTION FANS	EA 2.2	S&P MXVENT-TD	Oval Office Building	Ground	Second Floor Female
FRESH AIR FANS	FA G.1	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G1
FRESH AIR FANS	FA G.2	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G2
FRESH AIR FANS	FA G.3	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G3
FRESH AIR FANS	FA G.4	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G4
FRESH AIR FANS	FA G.5	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G5
FRESH AIR FANS	FA G.6	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G6
FRESH AIR FANS	FA G.O N.B	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G7 New Building
FRESH AIR FANS	FA G.7 O.B	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G7 Old Building
FRESH AIR FANS	FA G.8 N.B	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G8 New Building
FRESH AIR FANS	FA G.8 O.B	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G8 old Building
FRESH AIR FANS	FA G.9	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G9
FRESH AIR FANS	FA G.10	S&P MXVENT-TD	Oval Office Building	Ground	Ground Floor G10
FRESH AIR FANS	FA 1.1	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.1
FRESH AIR FANS	FA 1.2	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.2
FRESH AIR FANS	FA 1.3	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.3
FRESH AIR FANS	FA 1.4	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.4

FRESH AIR FANS	FA 1.5	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.5
FRESH AIR FANS	FA 1.6	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.6
FRESH AIR FANS	FA 1.7	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.7
FRESH AIR FANS	FA 1.8	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.8
FRESH AIR FANS	FA 1.9	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.9
FRESH AIR FANS	FA 1.10	S&P MXVENT-TD	Oval Office Building	FIRST	First Floor 1.10
FRESH AIR FANS	FA 2.1	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.1
FRESH AIR FANS	FA 2.2	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.2
FRESH AIR FANS	FA 2.3	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.3
FRESH AIR FANS	FA 2.4	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.4
FRESH AIR FANS	FA 2.5	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.5
FRESH AIR FANS	FA 2.6	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.6
FRESH AIR FANS	FA 2.7	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.7
FRESH AIR FANS	FA 2.8	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.8
FRESH AIR FANS	FA 2.9	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.9
FRESH AIR FANS	FA 2.10	S&P MXVENT-TD	Oval Office Building	SECOND	Second Floor 2.10
A/C SPLIT UNIT-HIDE-AWAY	A/C G.1	Daikin-FBQ 140	Oval Office Building	Ground	Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.2	Daikin-FBQ 140	Oval Office Building	Ground	Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.3	Daikin-FBQ 71	Oval Office Building	Ground	Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.4	Daikin-FBQ 71	Oval Office Building	Ground	Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.5	Daikin-FBQ 140	Oval Office Building	Ground	New Ground Floor Storey
A/C SPLIT UNIT-HIDE-AWAY	A/C G.6	Daikin-FBQ 100	Oval Office Building	Ground	New Ground Floor Dafe
A/C SPLIT UNIT-HIDE-AWAY	A/C G.7	Daikin-FBQ 71	Oval Office Building	Ground	New Ground Floor Dafe
A/C SPLIT UNIT-HIDE-AWAY	A/C G.8	Daikin-FBQ 100	Oval Office Building	Ground	New Ground Floor Dafe
A/C SPLIT UNIT-HIDE-AWAY	A/C G.9	Daikin-FBQ 100	Oval Office Building	Ground	New Ground Floor Dafe

A/C SPLIT UNIT-HIDE-AWAY	A/C G.10	Daikin-FBQ 71	Oval Office Building	Ground	New Ground Floor Storey
A/C SPLIT UNIT-HIDE-AWAY	A/C G.11	Daikin-FBQ 71	Oval Office Building	Ground	New Ground Floor Storey
A/C SPLIT UNIT-HIDE-AWAY	A/C G.12	Daikin-FBQ 71	Oval Office Building	Ground	New Ground Floor Vacant office
A/C SPLIT UNIT-HIDE-AWAY	A/C G.13	Daikin-FBQ 71	Oval Office Building	Ground	New Ground Floor Vacant office
A/C SPLIT UNIT-HIDE-AWAY	A/C G.14	Daikin-FBQ 100	Oval Office Building	Ground	New Ground Floor Vacant office
A/C SPLIT UNIT-HIDE-AWAY	A/C G.15	Daikin-FBQ 100	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.16	Daikin-FBQ 140	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.17	Daikin-FBQ 140	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.18	Daikin-FBQ 100	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.19	Daikin-FBQ 100	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.20	Daikin-FBQ 100	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.21	Daikin-FBQ 100	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.22	Daikin-FBQ 100	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C G.23	Daikin-FBQ 71	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-CASSETTE	A/C G.24	Daikin-FCQ 71	Oval Office Building	Ground	Existing Ground Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.1	Daikin-FBQ 140	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.2	Daikin-FBQ 140	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.3	Daikin-FBQ 71	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.4	Daikin-FBQ 71	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.5	Daikin-FBQ 140	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.6	Daikin-FBQ 100	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.7	Daikin-FBQ 71	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.8	Daikin-FBQ 100	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.9	Daikin-FBQ 100	Oval Office Building	FIRST	New First Floor

A/C SPLIT UNIT-HIDE-AWAY	A/C 1.10	Daikin-FBQ 71	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.11	Daikin-FBQ 71	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.12	Daikin-FBQ 140	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.13	Daikin-FBQ 140	Oval Office Building	FIRST	New First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.14	Daikin-FBQ 140	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.15	Daikin-FBQ 140	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.16	Daikin-FBQ 140	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.17	Daikin-FBQ 100	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.18	Daikin-FBQ 100	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.19	Daikin-FBQ 100	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.20	Daikin-FBQ 100	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.21	Daikin-FBQ 100	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 1.22	Daikin-FBQ 71	Oval Office Building	FIRST	Existing First Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.1	Daikin-FBQ 140	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.2	Daikin-FBQ 140	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.3	Daikin-FBQ 71	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.4	Daikin-FBQ 71	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.5	Daikin-FBQ 140	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.6	Daikin-FBQ 100	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.7	Daikin-FBQ 71	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.8	Daikin-FBQ 100	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.9	Daikin-FBQ 100	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.10	Daikin-FBQ 71	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.11	Daikin-FBQ 71	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.12	Daikin-FBQ 140	Oval Office Building	Second	New Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.13	Daikin-FBQ 140	Oval Office Building	Second	New Second Floor

A/C SPLIT UNIT-HIDE-AWAY	A/C 2.14	Daikin-FBQ 140	Oval Office Building	Second	Existing Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.15	Daikin-FBQ 140	Oval Office Building	Second	Existing Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.16	Daikin-FBQ 140	Oval Office Building	Second	Existing Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.17	Daikin-FBQ 100	Oval Office Building	Second	Existing Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.18	Daikin-FBQ 100	Oval Office Building	Second	Existing Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.19	Daikin-FBQ 100	Oval Office Building	Second	Existing Second Floor
A/C SPLIT UNIT-HIDE-AWAY	A/C 2.20	Daikin-FBQ 100	Oval Office Building	Second	Existing Second Floor
A/C SPLIT UNIT-CASSETTE	A/C 2.21	Daikin-FCQ	Oval Office Building	Second	Existing Second Floor
A/C SPLIT UNIT-MIDWALL	A/C	Daikin-	Oval Office Building	Ground	Security Room
A/C SPLIT UNIT-MIDWALL	A/C	Daikin-	Oval Office Building	Ground	Security Room
A/C SPLIT UNIT-MIDWALL	A/C	Daikin-	Oval Office Building	Ground	Benchmark
A/C SPLIT UNIT-MIDWALL	A/C	Daikin-	Oval Office Building	Ground	Benchmark Boardroom
A/C SPLIT UNIT-	A/C	Daikin-	Oval Office Building	unknown	unknown
A/C SPLIT UNIT-	A/C	Daikin-	Oval Office Building	unknown	unknown
A/C SPLIT UNIT-	A/C	Daikin-	Oval Office Building	unknown	unknown
A/C SPLIT UNIT-	A/C	Daikin-	Oval Office Building	unknown	unknown
A/C SPLIT UNIT-	A/C	Daikin-	Oval Office Building	unknown	unknown
A/C SPLIT UNIT-	A/C	Daikin-	Oval Office Building	unknown	unknown

	WIRE CENTRES AND CORE ROOMS AND SUBSTATION – SPLITS UNIT AND HIROSS UNIT
1	CTB-CR3
2	CTB-CR4
3	INT-WC-5
4	INT-CR-2
5	INT-WC-2
6	INT-WC-3
7	INT-WC-1
8	INT-WC-6
9	WC-1
10	SOB-CR1
11	SOB-WC-G1

12	SOB-WC-19.1
13	SOB-WC-19.2
14	CTB-WC-1.2
15	CTB-WC-1.3
16	CTB-WC-1.4
17	CTB-WC-1.5
18	CTB-WC-G.3
19	CTB-WC-1.6
20	CTB-WC-G.8
21	CTB-WC-3.5
22	CT-WC-3.2
23	CTB-WC3.3
24	CTB-WC-3.1
25	CTB-WC-G.2
26	DOM-WC12
27	CTB-WC1.9
28	CTB-WC1.7
29	CTB-WC1.8
30	CTB-WC-1.10
31	INT-WC-4
32	Fox 3-WC
33	Fox 5-WC
34	MSP1-WC-1
35	WC-Car Rental
36	CIA-MSP-WC-1
37	MSP2-4-5
38	DOM-WC-8
39	WC-5
40	WC-3
41	T1 Sub station
42	Northern courtyard substation
43	Southern Courtyard substation
44	T5 substation
45	SOB substation
46	Localisers -Airside
47	Baggage UPS Battery
48	Radio Battery Room Split unit – 1st Floor South

ANNEX B

Equipment Commissioning Dates

	Terminal 1 HVAC Building	Terminal 5 HVAC Building	Central Terminal Building	CAR Rentals Building	CARGO Building
2002	09-Dec				
2005		17- Jan			
2010			30-Oct	30-April	

	Parkade 1 Building	Parkade 2 Building	Power and Lighting Building	ILS and Airside Substations Buildings	Fire and Lighting Building	Oval Building
2010						
2015						
2016						
2018						
2019						
2020						

ANNEX C

Equipment Life Span

Item	Location	Life Span
AIR CONDITIONER - CHILLER UNIT / CHIILLER UNIT	CTB, Terminal 1 and Terminal 5	20
AIR CONDITIONER - COOLING TOWER / COOLING TOWER	CTB, Terminal 1 and Terminal 5	20
AIR CONDITIONER - CONSOLE UNIT	Parkade 1 and Terminal 5	7
AIR CONDITIONER - ENVIRONMENT CONTROL / ENVIRONMENT CONTROL	Various Locations	15
AIR CONDITIONER - AIR HANDLING UNIT / AIR HANDLING UNIT	CTB, Terminal 1 and Terminal 5	15
AIR CONDITION - SPLIT UNIT	Various Locations	7
AIR CONDITIONER - VENTILATION UNIT / VENTILATION UNIT	CTB, Terminal 1 and Terminal 5	15
AIR CONDITIONER - FAN COIL UNIT	SOB and Terminal 1	7
ELECTRICAL PANEL - DISTIBUTION BOARD	CTB, Terminal 1 and Terminal 5	20
SCADA / SYSTEM - SCADA	SOB	10
VENTILATOR	CTB, Terminal 1 and Terminal 5	15
PIPING	CTB, Terminal 1 and Terminal 5	30
WATER TREATMENT SYSTEM	CTB, Terminal 1 and Terminal 5	15
PUMP SET	CTB, Terminal 1 and Terminal 5	10

ANNEX D

Site Information

Description
The services are situated on the airside of Cape Town International Airport the services taking place on various and remote areas within the boundary limits of the Cape Town International Airport.

General Site Conditions

Temperature (Min - Max)	6ºC to 40ºC
Relative Humidity	15% to 75%
Wind	Varies daily
Height above Sea Level	46 m
Slope (Existing/Modified)	N/A
Seismic	N/A

ANNEX E

Risk assessment

OHS Risks

#	Department	Tenant / Sub-department	Activity / Task / Service	Risk Name	Risk Description	Control Measure Name	Control Measure Description
1	Operations: M&E	Mechanical	Maintenance of HVAC system	Fire hazard, fatalities	Flammable Material	Procedure	Remove all flammable material (papers, plastic etc.)
2	Operations: M&E	Mechanical	Maintenance of HVAC system	Injuries, fatalities.	Oil spillage	Procedure	ARFF department on standby if required. Contractor to have a spill containment kit to contain the spill, while ARFF is contacted through the IMC.
3	Operations: M&E	Mechanical	Maintenance of HVAC system	Occupational injury	Flying Objects	Procedure	Eye and Hand protection must be worn (Wear of Safety Glasses). Record of receiving PPE is to be kept on file,
4	Operations: M&E	Mechanical	Maintenance of HVAC system	Fire hazard, injuries, fatalities.	Hot work conducted such as grinding, welding	Procedure	Hot work permit be issued prior commencement of work. Fire equipment to be serviceable.
5	Operations: M&E	Mechanical	Maintenance of HVAC system	Occupational injury	Tripping Hazard	Procedure	Demarcate Working Area Ensure the slippery or tripping hazards are removed

6	Operations : M&E	Mechanical	Maintenance of HVAC system	Hearing loss	Noise generated from the aircraft and dollies	Training	Ear protection must be worn. Record of receiving PPE is to be kept on file Airside Induction Training is mandatory prior to receiving a permit to work at the airport. Refresher training is provided every 2 years thereafter.
7	Operations : M&E	Mechanical	Maintenance of HVAC system	Aircraft damage, fatalities	persons and vehicle in the airside	Training	On the job training is performed after Airside Induction Training is received.
8	Operations : M&E	Mechanical	Maintenance of HVAC system	Aircraft damage, fatalities	Moving Machinery	Training, Procedure	Airside Induction Training is mandatory prior to receiving a permit to work at the airport. Refresher training is provided every 2 years thereafter.
9	Operations : M&E	Mechanical	Maintenance of HVAC system	Occupational injuries	Hand Injury	Training, Procedure	Hand protection must be worn (gloves). Record of receiving PPE is to be kept on file. Airside Induction Training is mandatory prior to receiving a permit to work at the airport.

							Refresher training is provided every 2 years thereafter.
10	Operations: M&E	Mechanical	Maintenance of HVAC system	FOD injected by aircraft, property damage, injuries	Vehicle and tools on at Aprons	Procedure	Area Demarcation during work where applicable and All tools & demarcation to be removed after work
11	Operations: M&E	Mechanical	Maintenance of HVAC system	Property damage, vehicle damage, injuries	Driving of vehicles at airside	SWP	AVOP training should be done by drivers with valid driver's license. Vehicles should be deemed serviceable or roadworthy by safety department.

Administrative Risks

Risk Number	Risk Description and Mitigations
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; low service damages will be levied and failing rehabilitation, the contract will be terminated as specified in this contract
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; low service damages will be levied and failing rehabilitation, the contract will be terminated as specified in this contract

6	Not meeting set MTTR target; low service damages will be levied and failing rehabilitation, the contract will be terminated as specified in this contract
7	Spares list not being updated could lead to extended equipment down times; low service damages will be levied, and failing rehabilitation, the contract will be terminated as specified in this contract
8	Root cause analysis not performed could lead to repeated equipment failures; low service damages will be levied and failing rehabilitation, the 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 paid on time
13	Updated and compliant safety file regarding Covid 19 PPE and risk assessment, as per OHS and regulation. low service damages will be levied, and failing rehabilitation, the contract will be terminated as specified in this contract
14	Any change in the law that is reinforced as per clause X2(Changes in the law)

ANNEX F

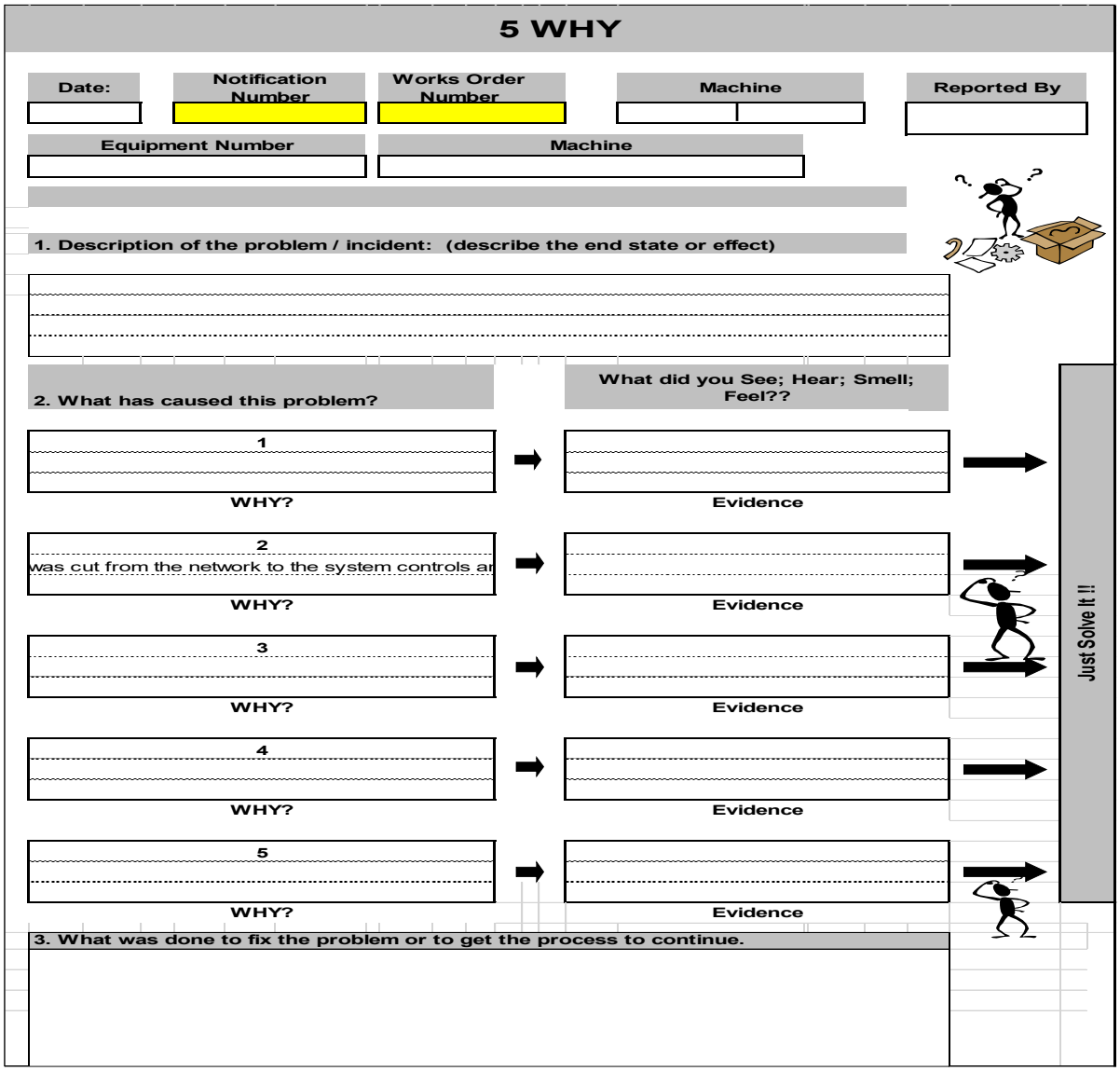
Previously completed PMs

The list of preventative maintenance previously performed with activities on the HVAC systems and actual work orders is available on request, ACSA Integrated maintenance centre can be contacted to issue.

ANNEX G

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.



Root Cause

4. Proposed preventative measures

Damage Code	
Dirty	
Erratic Operation	
Faulty Indication	
Flow	
Jammed	
Leaks	
Loose	
Noisy	
Limits	
Out of Position	
Physically Damaged	
Pressure	
Temperature	
Trips	
Jtility/ Service Failure	
Vibrates	
Will Not Reset	
Will Not Run	
Other	

Cause Code	
Blown	
Broken	
Dirty	
Fatigue	
Leak	
Liquid Ingress	
Lubrication	
Misaligned	
Perished	
Pressure	
Soiled	
Temperature	
Worn	
Other	x

Corrective Activity	
Adjusted	
Aligned	
Calibrated	
Cleaned	
Investigated	
Lubricated	
Temporary Mod	
Removed	
Repaired	
Replaced	
Reset	
Tightened	
Setup	

Name:		Name:	
	Printer		**Supervisor**
Sign:		**Sign:**	

ANNEX H

Estimated times for breakdowns/faults.

Item #	Call description	Estimated time to repair (hrs.) from the ACSA system as per Annexure H for information only
1	Insufficient cooling or heating – settings	0.5
2	Filter -clog/dirty filter	0.5
3	Thermostat – sensor /control	0.5
4	Aircon Water Leaks /drainage problems	1.5
5	Refrigerant leaks	2
6	Breakers / fuses faulty	0.5
7	Capacitors faulty - not cooling	0.5
8	Compressor faulty –	2
9	Evaporator coils- icing on pipes / condenser coils clogged	1.5
10	Worn Contactor	1
11	Aircon too cold or hot	0.5
12	Noise on the Aircon	1
13	Diffuser hanging loose	1
14	No Air flow on the aircon	1
15	Chiller tripped on Low /High refrigerant	1.5
16	Electrical Motor Faulty	1.5
19	Faulty relay and Contactors	2
20	Overload Trips -related to VSD	2.5
21	Faulty Dampers	2
22	Other: Unforeseen breakdown	
23	Other: Unforeseen breakdown	
24	Other: Unforeseen breakdown	

ANNEX I
Service Level Agreement

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. Down-time of HVAC system for routine maintenance shall be arranged with the Service Manager and Informed IMC in advance to suit airport operations. 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 Supervisor	Whenever deemed necessary	Mon-Fri (08:00-16:30) and whenever deemed necessary by the Employer
Technician (s) and Assistant Technician (s)	Whenever deemed necessary	Mon-Fri (08:00-16:30) and Whenever deemed necessary by the Employer or the Artisan
Artisan Fitter/Millwright	Whenever deemed necessary	Mon-Fri (08:00-16:30) and Whenever deemed necessary by the Employer
Air Conditioning and Refrigeration Gas Practitioner	Whenever deemed necessary	Mon-Fri (08:00-16:30) and Whenever deemed necessary by the Employer
Control Technicians	Whenever deemed necessary	Mon-Fri (08:00-16:30) and Whenever deemed necessary by the Employer or the Electricians
Electricians and Assistant Electricians	Whenever deemed necessary	Mon-Fri (08:00-16:30) and Whenever deemed necessary by the Employer

* 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.

Availability, mean time before failure, mean time to repair and callout response times
The Contractor must comply with the following minimum system performance benchmarks:

The Period of review shall be Monthly.

ACSA has authority to give the contractor the call-out, the authority will be from both IMC and Service Manager.

Service Level table
The following service levels are the minimum acceptable service levels for this contract.

Item	Benchmark*
HVAC System - Availability	Availability must be a minimum of 99.5% per month.
Average Monthly Chiller COP	3
Condenser water quality criteria	Turbidity – equivalent to TSS of 25ppm – 1ppm is equivalent 3 NTU Ph range: 8 - 9 TDS: minimum of 1250 ppm Chlorides + Sulphates > 400 mg/l
Average monthly temperature drop across the cooling tower	Delta T = 5 degrees or more
Yearly plant Energy savings	5% saving on preceding year
HVAC System - MTTR	0.967 Hrs.
HVAC System - MTBF	48 Hrs.
% of planned maintenance completed per month	100%
Response time for call during normal working time	20 minutes on land side and 30 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 time for call outs (after working hours, weekend and holidays)	60 minutes on land side and on the airside
Closure of Planned Maintenance (PM) Work Orders (WO) (Planned by ACSA)	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)
Closure of Corrective Maintenance (CM) Work Orders (WO)	All CM WO shall be closed with 1 working day from date of issuing to contractor (Issued by ACSA either by mail or manual collection)

*The PMs' and work Orders are not closed until all works have been correctly completed and the correct completed documents have been sent to both the IMC and the Service Manage.
** Availability, MTTR and MTBF as defined in the IMC procedure.

Formula and Definitions

Availability	Definition
Total operating time	Time interval during which and item is performing its required function
Total operating time + downtime related to failures	Downtime related to failures =Total downtime lost due to failures

Reliability	Definition
Total operating time	Time interval during which and item is performing its required function
Number of failures	Failure: termination of the ability of an item to perform a required

Maintainability	Definition
Total time to restoration	Time interval during which an item is in downstate due to failure
Total number of failures	Termination of the ability of an item to perform a required function

Emergency Response time
ACSA deems an emergency as a situation caused by unforeseen circumstance. This is only instances where:
Delaying sourcing 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

3.1 Response Times

The Contractor must at all times comply with the following:

Response time shall be calculated as the time taken from the fault being reported (via IMC, 3rd party, or other) to the time the fault is cleared, and the relevant device becomes available for use.

100% of all Call-out breakdowns shall be responded to within 20 minutes on landside and 30 minutes on airside. Response time for call outs after working hours, weekend and holidays is 60 minutes on land side and on the airside. Response time shall be measured as the time taken from reporting the call, to the technician arriving at the relevant piece of equipment.

Any breakdown impacting HVAC operations shall be attended-to until restored to good reliable condition. This implies that no breakdown may be left unattended or incomplete for the next day or shift.

ACSA will hold the Contractor liable for any costs incurred by any party as a result of negligence or unreasonable poor performance by the Contractor including excessive time taken to effect repairs.

3.2 Closure Duration

Closure duration is defined as the time elapsed since the maintenance call was logged at the IMC to the time the contractor reports to the IMC that the problem has been resolved.

95% of all breakdowns will be restored to good working condition within 1.5 hour, unless a special agreement exists with the employer's agent. Include escalation procedure. The contractor must report any defect immediately to ACSA.

In the event of a HVAC System or its related component being unavailable, it will be the sole. responsibility of the Contractor to advise the Infrastructure Monitoring Control (IMC) as well as Contract Manager immediately.

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.

Assessments and Reviews

Safety issues and file reviewed monthly 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.

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:
*Any availability less than 91% for six consecutive months (which is the entirely the contractor's fault) will lead to contract termination.

Failure to meet the cooling capacity demand for each plant will result in a 15% deduction in maintenance fees. The following system must be available to meet cooling demand. - Terminal 1 (T1) – **Three (3) chillers and cooling towers.** - Terminal 5 (T5)– **Two (2) chillers and cooling towers** - Central Terminal Building (CTB) – **Four (4) chillers and cooling towers**	15 % of monthly service fee
To drive energy savings, manual operation must be avoided. The start/stop schedule for chillers and their auxiliary equipment, including AHUs, should be programmed for shutdown on the BMS. **Failure to schedule any equipment on the BMS system or Trane Summit will result in low service damages**	R 2 000/month for each equipment not scheduled to stop/start during non-operation hours
Across all AHU's the pressure differential required to be maintained between 50- 250 Pa	1000/ month per AHU
Not meeting system MTTR of 0.967 Hrs (i.e. MTTR >0.967 Hrs).	R10 000/month
Not meet system MTBF 48 Hrs (i.e. MTBF > 48Hrs)	R10 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
Not meeting Condenser water quality criteria- The water treatment should be lab tested for accurate results for conductivity-based TDS testing or gravimetric analysis (lab result to be submitted on monthly basis to prevent scaling and corrosion , control biological growth and optimise water blowdowns cycles.	R5 000/month
The contractor will have **three months from the start of the contract** to optimize condenser water usage by **reducing TDS levels** while minimizing **bleed-off/blowdowns**. They must provide **monthly water quality readings** to demonstrate progress, and failure to maintain low TDS readings or reduce water usage may result in 5% deduction	5% of monthly service fee
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).	R4 000/month

Note work is complete after the PMs have been correctly completed returned to the contract manager and the ACSA IMC to be closed out.	
Not turning PO into completed works / completion certificate on agreed times lines as stated in Risk register	R4 000.00 / per PO / month
Other occupational health and safety act 85 of 1993 which are criminal offences according to the OHS act	Termination
3 Months Consecutive (monthly on contract period) occupational health and safety act 85 of 1993 of the same offence/class	Termination
Failure to provide/produce the System reviews by ECSA registered professional reports as per SLA requirements	Termination

Item Description	Response Time	
Negligence to calls with no proper feedback and causes ACSA reputation damage	during normal	R1 000.00/event

Discretionary quarterly 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.

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Innovation and Continuous improvement

Item No.	Innovation Achieved	Payment presentence
1	Innovative with proven 15% cost savings on HVAC maintenance and repairs - **Energy Consumption Trends** – Compare before-and-after energy usage for system - **Consistent Performance** – Assess whether the system maintains optimal temperature, airflow, and humidity levels with minimal fluctuations. - **Frequency of Breakdowns** – Track the number of unplanned failures before and after implementation - **Mean Time Between Failures (MTBF) and Mean Time to Repair (MTTR)**	Only 10% of One Month's maintenance & inspection costs

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.

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

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 J

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 K

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.

MAINTENANCE TASKS FOR AIR CONDITIONER – CHILLER UNIT

The tasks listed are high level/ minimum tasks. The contractor is expected to complete all tasks as OEM requirements, scope of works on the contract, as listed on the approved inspection sheet and as per the CMMS PMs'.

Activity	Task Description	Frequency
Maintenance	Check for normal operations Check for any abnormalities	Daily (D)
Maintenance	Measure and record temperature, pressures and amps	Weekly (W)
Maintenance	1) Check proper functioning of controls, gauges and electric panel Check oil and refrigerant charge and any refrigerant leaks Inspect for structural looseness and tighten if required	Tri-Monthly (3M)
Maintenance	Remove Oil sample for analysis and report (where applicable) Check the condition of all safety devices and calibrate if required Annual Winter service Check the condenser tubes for fouling	Yearly (Y)

MAINTENANCE TASKS FOR AIR CONDITIONER – CONSOLE UNIT

The tasks listed are high level/ minimum tasks. The contractor is expected to complete all tasks as OEM requirements, scope of works on the contract, as listed on the approved inspection sheet and as per the CMMS PMs'.

Activity	Task Description	Frequency
Maintenance	Clean and check operation	Monthly (M)
Maintenance	Check gas charge and record operating pressure	Tri-Monthly (3M)
Maintenance	Clean the entire unit and check operation Check for leaks and abnormal vibration	Yearly (Y)

Maintenance Tasks for Air Conditioner – Cooling Tower

The tasks listed are high level/ minimum tasks. The contractor is expected to complete all tasks as OEM requirements, scope of works on the contract, as listed on the approved inspection sheet and as per the CMMS PMs'

Activity	Task Description	Frequency
Maintenance	Inspect for leaks and check condition of valves Inspect that eliminators are clean and secure (where applicable) Inspect fan motor, bearing and drive Inspect spray system and nozzles	Monthly (M)
Maintenance	Inspect the v-belt and tension if necessary or replace if required Clean the sump and its associates Inspect dampers	Tri-Monthly (3M)

Maintenance Tasks for Air Conditioner

The tasks listed are high level/ minimum tasks. The contractor is expected to complete all tasks as OEM requirements, scope of works on the contract, as listed on the approved inspection sheet and as per the CMMS PMs'

Activity	Task Description	Frequency
Maintenance	Ensure safe working environment and adequate PPE is used Clean and check operation Check for abnormal noises Clean the entire unit and check operation Check for abnormal vibrations Check the condition of the blades Report all findings to the Mechanical Technician	Tri-Monthly (3M)
Maintenance	Ensure safe working environment and adequate PPE is used Clean and check operation Check for abnormal noises Clean the entire unit and check operation Check for abnormal vibrations Check the condition of the blades Report all findings to the Mechanical Technician	Yearly (Y)

Maintenance Tasks for Air Conditioner – Air Handling Unit

The tasks listed are high level/ minimum tasks. The contractor is expected to complete all tasks as OEM requirements, scope of works on the contract, as listed on the approved inspection sheet and as per the CMMS PMs'.

Activity	Task Description	Frequency
Maintenance	Inspect the air handling unit while running Inspect the condition of the drive system Record operating parameters Clean filters	Monthly (M)
Maintenance	Inspect v-belt tension and safety guards. Inspect the proper operation of the dampers and lubricate if necessary	Trio-Monthly (3M)
Maintenance	Perform yearly maintenance as per approved contractor's task list Change filters	Yearly (Y)

Maintenance Tasks for Air Conditioner – Split Unit

The tasks listed are high level/ minimum tasks. The contractor is expected to complete all tasks as OEM requirements, scope of works on the contract, as listed on the approved inspection sheet and as per the CMMS PMs'

Activity	Task Description	Frequency
Maintenance	Clean and check operations	Monthly (M)
Maintenance	Check gas charge and record operating pressure	Tri-Monthly (3M)
Maintenance	Clean the entire unit and check operation Check for leaks and abnormal vibration	Yearly (Y)

Maintenance Tasks for Ventilation FANS

The tasks listed are high level/ minimum tasks. The contractor is expected to complete all tasks as OEM requirements, scope of works on the contract, as listed on the approved inspection sheet and as per the CMMS PMs'

Activity	Task Description	Frequency
Maintenance	Inspect drive mounting and bearings for normal operation Inspect the proper operation of the dampers and lubricate if necessary	Tri-Monthly (3M)

Maintenance	Record motor running current Clean fan blades, casing and supports and de-rust if necessary Inspect all the electrical connections	Six-Monthly (6M)

Maintenance Tasks for Air Conditioner – Fan Coil Unit

The tasks listed are high level/ minimum tasks. The contractor is expected to complete all tasks as OEM requirements, scope of works on the contract, as listed on the approved inspection sheet and as per the CMMS PMs'

Activity	Task Description	Frequency
Maintenance	Inspect and clean filter, drip tray, unity and interior and exterior Inspect fan control system Inspect door sealing	Tri-Monthly (3M)
Maintenance	Perform yearly maintenance as per approved contractor's task list Change filters	Yearly (Y)

ANNEX L (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: The name of the contracting waste company Waste disposal site used Monthly reports on quantities – separated into general, hazardous and recycled Maintained file of all Waste Manifest Documents and Certificates of Safe Disposal 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 M

Maintenance of HVAC System Spares List

MSP Number	Part Description	UOM
	Air Con - Armaflex 1/2"	EACH
	Air Con - Armaflex 1/4"	EACH
	Air Con - Armaflex 3/4"	EACH
	Air Con - Armaflex 3/8"	EACH
	Air Con - Armaflex 5/8"	EACH
	Air Con - Canopy Extract Fan 3kW	EACH
	Air Con - Canopy Extract Fan 4kW	EACH
	Air Con - Canopy Extract Fan 5.5kW	EACH
	Air Con - Capacitor - P/No. 10 uF	EACH
	Air Con - Capacitor - P/No. 20 uF	EACH
	Air Con - Capacitor - P/No. 25 uF	EACH
	Air Con - Capacitor - P/No. 30 uF	EACH
	Air Con - Capacitor - P/No. 35 uF	EACH
	Air Con - Capacitor - P/No. 40 uF	EACH
	Air Con - Capacitor - P/No. 45 uF	EACH
	Air Con - Capacitor - P/No. 5 uF	EACH
	Air Con - Capacitor - P/No. 50 uF	EACH
	Air Con - Capacitor - P/No. 60 uF	EACH
	Air Con - Capacitor 15 uF	EACH
	Air Con - Casette Split Unit 24,000 BTU Second Hand Unit	EACH
	Air Con - Centrifugal Fan 9/9 500W	EACH
	Air Con - Compressor 12,000 BTU LT-C1260 HL	EACH
	Air Con - Compressor 12,000 BTU LTUC 1260 BA	EACH
	Air Con - Compressor 12,000 BTU MUH-12 NV	EACH
	Air Con - Compressor 12,000 BTU MUZ-HA 35 VA	EACH
	Air Con - Compressor 12,000 BTU RAJA 12 FS - AAR	EACH
	Air Con - Compressor 15,000 BTU PHU 1.6 VKA	EACH
	Air Con - Compressor 18,000 BTU HLJA 18 FS	EACH
	Air Con - Compressor 18,000 BTU LS-T 186 ABL	EACH
	Air Con - Compressor 18,000 BTU MUH-18 NV	EACH
	Air Con - Compressor 18,000 BTU RAJA 18 FS - AAR	EACH
	Air Con - Compressor 18,000 BTU TLJA 18 FS - AAR	EACH
	Air Con - Compressor 18,000 BTU WM 06 BS	EACH
	Air Con - Compressor 18,000 BTU WMN 18 RC	EACH
	Air Con - Compressor 22,000 BTU PUK 2 VKA	EACH
	Air Con - Compressor 24,000 BTU HLJA 24 FS	EACH
	Air Con - Compressor 24,000 BTU MUH-24 NV	EACH
	Air Con - Compressor 24,000 BTU RAJA 24 FS - AAR	EACH
	Air Con - Compressor 24,000 BTU YKJA 24 FS - AAR	EACH

	Air Con - Compressor 26,000 BTU LS-T 266 ABL	EACH
	Air Con - Compressor 26,000 BTU PUK 2.5 VKA	EACH
	Air Con - Compressor 30,000 BTU WM 10 BS	EACH
	Air Con - Compressor 32,000 BTU PUK 3 VKA	EACH
	Air Con - Compressor 36,000 BTU RAJA 36 FS - AAR	EACH
	Air Con - Compressor 36,000 BTU YOJA 36 FS - AAR	EACH
	Air Con - Compressor 45,000 BTU DF 41 AD - AT	EACH
	Air Con - Compressor 45,000 BTU MOR 45035	EACH
	Air Con - Compressor 48,000 BTU CEF 164 MH	EACH
	Air Con - Compressor 60,000 BTU PUK 8 YKA	EACH
	Air Con - Compressor 9,000 BTU	EACH
	Air Con - Compressor 9,000 BTU MUH-09 LV	EACH
	Air Con - Compressor 9,000 BTU MUH-09 NV	EACH
	Air Con - Compressor 9,000 BTU RAJA 09 FS - AAR	EACH
	Air Con - Compressor 9,000 BTU WM 03 BS	EACH
	Pump Condensate Mini Orange RXD 1496	EACH
	Air Con - Condenser Fan 32,000 BTU PUK 3 VKA	EACH
	Air Con - Condenser Fan 60,000 BTU PUK 8 YKA	EACH
	Air Con - Condenser Fan 12,000 BTU LT-C1260 HL	EACH
	Air Con - Condenser Fan 12,000 BTU LTUC 1260 BA	EACH
	Air Con - Condenser Fan 12,000 BTU MUH-12 NV	EACH
	Air Con - Condenser Fan 12,000 BTU MUZ-HA 35 VA	EACH
	Air Con - Condenser Fan 12,000 BTU RAJA 12 FS - AAR	EACH
	Air Con - Condenser Fan 15,000 BTU PHU 1.6 VKA	EACH
	Air Con - Condenser Fan 18,000 BTU HLJA 18 FS	EACH
	Air Con - Condenser Fan 18,000 BTU LS-T 186 ABL	EACH
	Air Con - Condenser Fan 18,000 BTU MUH-18 NV	EACH
	Air Con - Condenser Fan 18,000 BTU RAJA 18 FS - AAR	EACH
	Air Con - Condenser Fan 18,000 BTU TLJA 18 FS - AAR	EACH
	Air Con - Condenser Fan 18,000 BTU WM 06 BS	EACH
	Air Con - Condenser Fan 18,000 BTU WMN 18 RC	EACH
	Air Con - Condenser Fan 22,000 BTU PUK 2 VKA	EACH
	Air Con - Condenser Fan 24,000 BTU HLJA 24 FS	EACH
	Air Con - Condenser Fan 24,000 BTU MUH-24 NV	EACH
	Air Con - Condenser Fan 24,000 BTU RAJA 24 FS - AAR	EACH
	Air Con - Condenser Fan 24,000 BTU YKJA 24 FS - AAR	EACH
	Air Con - Condenser Fan 26,000 BTU LS-T 266 ABL	EACH
	Air Con - Condenser Fan 26,000 BTU PUK 2.5 VKA	EACH
	Air Con - Condenser Fan 30,000 BTU WM 10 BS	EACH
	Air Con - Condenser Fan 36,000 BTU RAJA 36 FS - AAR	EACH
	Air Con - Condenser Fan 36,000 BTU YOJA 36 FS - AAR	EACH
	Air Con - Condenser Fan 45,000 BTU DF 41 AD - AT	EACH
	Air Con - Condenser Fan 45,000 BTU MOR 45035	EACH
	Air Con - Condenser Fan 48,000 BTU CEF 164 MH	EACH
	Air Con - Condenser Fan 9,000 BTU MUH-09 LV	EACH

	Air Con - Condenser Fan 9,000 BTU MUH-09 NV	EACH
	Air Con - Condenser Fan 9,000 BTU RAJA 09 FS - AAR	EACH
	Air Con - Condenser Fan 9,000 BTU WM 03 BS	EACH
	Air Con - Condenser Fan Motor	EACH
	Air Con - Contactor 12Amp	EACH
	Air Con - Contactor 25Amp	EACH
	Air Con - Contactor 32Amp	EACH
	Air Con - Contactor 9Amp	EACH
	Air Con - Contactors 40A	EACH
	Overload contactors 11.0-16.0A	EACH
	Overload contactors 24.5-30.0A	EACH
	Overload contactor 28.0-40.0A	EACH
	7.5 KW Contactor	EACH
	13 KW Contactor	EACH
	15 KW Contactor	EACH
	18 KW Contactor	EACH
	Air Con - Controller - P/No. FX07	EACH
	Air Con - Controller - P/No. FX15	EACH
	Air Con - Controller A419	EACH
	Air Con - Controller SQS65	EACH
	Air Con - Copper Pipe 1/2"	EACH
	Air Con - Copper Pipe 1/4"	EACH
	Air Con - Copper Pipe 3/4"	EACH
	Air Con - Copper Pipe 3/8"	EACH
	Air Con - Copper Pipe 5/8"	EACH
	Air Con - Filter Driers 1/2"	EACH
	Air Con - Filter Driers 1/4"	EACH
	Air Con - Filter Driers 3/4"	EACH
	Air Con - Filter Driers 3/8"	EACH
	Air Con - Filter Driers 5/8"	EACH
	Air Con - Filter Media 5mm	EACH
	Air Con - Heaters for Reheat Diffuses	EACH
	Air Con - Humidity Sensor - P/No. HT-9006-URW	EACH
	Air Con - Indoor PC Board 12,000 BTU LT-C1260 HL	EACH
	Air Con - Indoor PC Board 12,000 BTU LTUC 1260 BA	EACH
	Air Con - Indoor PC Board 12,000 BTU MUH-12 NV	EACH
	Air Con - Indoor PC Board 12,000 BTU MUZ-HA 35 VA	EACH
	Air Con - Indoor PC Board 12,000 BTU RAJA 12 FS - AAR	EACH
	Air Con - Indoor PC Board 15,000 BTU PHU 1.6 VKA	EACH
	Air Con - Indoor PC Board 18,000 BTU HLJA 18 FS	EACH
	Air Con - Indoor PC Board 18,000 BTU LS-T 186 ABL	EACH
	Air Con - Indoor PC Board 18,000 BTU MUH-18 NV	EACH
	Air Con - Indoor PC Board 18,000 BTU RAJA 18 FS - AAR	EACH
	Air Con - Indoor PC Board 18,000 BTU TLJA 18 FS - AAR	EACH
	Air Con - Indoor PC Board 18,000 BTU WM 06 BS	EACH

	Air Con - Indoor PC Board 18,000 BTU WMN 18 RC	EACH
	Air Con - Indoor PC Board 22,000 BTU PUK 2 VKA	EACH
	Air Con - Indoor PC Board 24,000 BTU HLJA 24 FS	EACH
	Air Con - Indoor PC Board 24,000 BTU MUH-24 NV	EACH
	Air Con - Indoor PC Board 24,000 BTU RAJA 24 FS - AAR	EACH
	Air Con - Indoor PC Board 24,000 BTU YKJA 24 FS - AAR	EACH
	Air Con - Indoor PC Board 26,000 BTU LS-T 266 ABL	EACH
	Air Con - Indoor PC Board 26,000 BTU PUK 2.5 VKA	EACH
	Air Con - Indoor PC Board 30,000 BTU WM 10 BS	EACH
	Air Con - Indoor PC Board 32,000 BTU PUK 3 VKA	EACH
	Air Con - Indoor PC Board 36,000 BTU RAJA 36 FS - AAR	EACH
	Air Con - Indoor PC Board 36,000 BTU YOJA 36 FS - AAR	EACH
	Air Con - Indoor PC Board 45,000 BTU DF 41 AD - AT	EACH
	Air Con - Indoor PC Board 45,000 BTU MOR 45035	EACH
	Air Con - Indoor PC Board 48,000 BTU CEF 164 MH	EACH
	Air Con - Indoor PC Board 60,000 BTU PUK 8 YKA	EACH
	Air Con - Indoor PC Board 9,000 BTU MUH-09 LV	EACH
	Air Con - Indoor PC Board 9,000 BTU MUH-09 NV	EACH
	Air Con - Indoor PC Board 9,000 BTU RAJA 09 FS - AAR	EACH
	Air Con - Indoor PC Board 9,000 BTU WM 03 BS	EACH
	Air Con - Motor for Diffuses (VAV)	EACH
	Air Con – R410 A disposal Cylinder 11.3kg	Kilogram
	Air Con - Outdoor PC Board 12,000 BTU LT-C1260 HL	EACH
	Air Con - Outdoor PC Board 12,000 BTU LTUC 1260 BA	EACH
	Air Con - Outdoor PC Board 12,000 BTU MUH-12 NV	EACH
	Air Con - Outdoor PC Board 12,000 BTU MUZ-HA 35 VA	EACH
	Air Con - Outdoor PC Board 12,000 BTU RAJA 12 FS - AAR	EACH
	Air Con - Outdoor PC Board 15,000 BTU PHU 1.6 VKA	EACH
	Air Con - Outdoor PC Board 18,000 BTU HLJA 18 FS	EACH
	Air Con - Outdoor PC Board 18,000 BTU LS-T 186 ABL	EACH
	Air Con - Outdoor PC Board 18,000 BTU MUH-18 NV	EACH
	Air Con - Outdoor PC Board 18,000 BTU RAJA 18 FS - AAR	EACH
	Air Con - Outdoor PC Board 18,000 BTU TLJA 18 FS - AAR	EACH
	Air Con - Outdoor PC Board 18,000 BTU WM 06 BS	EACH
	Air Con - Outdoor PC Board 18,000 BTU WMN 18 RC	EACH
	Air Con - Outdoor PC Board 22,000 BTU PUK 2 VKA	EACH
	Air Con - Outdoor PC Board 24,000 BTU HLJA 24 FS	EACH
	Air Con - Outdoor PC Board 24,000 BTU MUH-24 NV	EACH
	Air Con - Outdoor PC Board 24,000 BTU RAJA 24 FS - AAR	EACH
	Air Con - Outdoor PC Board 24,000 BTU YKJA 24 FS - AAR	EACH
	Air Con - Outdoor PC Board 26,000 BTU LS-T 266 ABL	EACH
	Air Con - Outdoor PC Board 26,000 BTU PUK 2.5 VKA	EACH

	Air Con - Outdoor PC Board 30,000 BTU WM 10 BS	EACH
	Air Con - Outdoor PC Board 32,000 BTU PUK 3 VKA	EACH
	Air Con - Outdoor PC Board 36,000 BTU RAJA 36 FS - AAR	EACH
	Air Con - Outdoor PC Board 36,000 BTU YOJA 36 FS - AAR	EACH
	Air Con - Outdoor PC Board 45,000 BTU DF 41 AD - AT	EACH
	Air Con - Outdoor PC Board 45,000 BTU MOR 45035	EACH
	Air Con - Outdoor PC Board 48,000 BTU CEF 164 MH	EACH
	Air Con - Outdoor PC Board 60,000 BTU PUK 8 YKA	EACH
	Air Con - Outdoor PC Board 9,000 BTU MUH-09 LV	EACH
	Air Con - Outdoor PC Board 9,000 BTU MUH-09 NV	EACH
	Air Con - Outdoor PC Board 9,000 BTU MW 03 BS	EACH
	Air Con - Outdoor PC Board 9,000 BTU RAJA 09 FS - AAR	EACH
	Air Con - Pressure Differential - P/No. 604-9000000	EACH
	Air Con - Reheat Diffuses All Sizes	EACH
	Air Con - Relay 8 pins, 10A, 24V DC 250VAC	EACH
	Air Con - Screen Cable - 0.5mmx4 Core	EACH
	Air Con - Sensor - P/No. A99RY	EACH
	Air Con - Sensor - P/No. TS-9100-8212	EACH
	Air Con - Static Pressure Sensor - P/No. EPT 5215-10	EACH
	Air Con - Transformer 24V	EACH
	Air Pressure Switch	EACH
	Room Temperature Sensor	EACH
	Damper Actuator	EACH
	Valve Actuator	EACH
	Air Con - V-Belt - P/No. 17B - 2840	EACH
	Air Con - V-Belt - P/No. A - 1310	EACH
	Air Con - V-Belt - P/No. A - 1510	EACH
	Air Con - V-Belt - P/No. SPA - 1200	EACH
	Air Con - V-Belt - P/No. SPA - 1400	EACH
	Air Con - V-Belt - P/No. SPA - 1500	EACH
	Air Con - V-Belt - P/No. SPA - 1600	EACH
	Air Con - V-Belt - P/No. SPA - 1700	EACH
	Air Con - V-Belt - P/No. SPA - 1800	EACH
	Air Con - V-Belt - P/No. SPA - 1900	EACH
	Air Con - V-Belt - P/No. SPA - 2000	EACH
	Air Con - V-Belt - P/No. SPA - 2120	EACH
	Air Con - V-Belt - P/No. SPA - 2240	EACH
	Air Con - V-Belt - P/No. SPA - 2500	EACH
	Air Con - V-Belt - P/No. SPA - 2700	EACH
	Air Con - V-Belt - P/No. SPA - 2840	EACH
	Air Con - V-Belt - P/No. SPA - 2990	EACH
	Fanner Wedge Belt VB13NX2532 F SPA 2532	EACH
	Fekner Wedge Belt SPA 1800	EACH

	Pulley 250 x 2 SPB T/L	EACH
	Varispeed – VSD- 3 Phase, 5 HP, 400V 4kw	EACH
	Varispeed – VSD- 3 Phase, 7.5 HP, 400V 5.5kw	EACH
	Varispeed – VSD- 3 Phase, 7.5 HP, 400V 18.5kw	EACH
	Varispeed – VSD- 3 Phase, 15 HP , 400V 11kw	EACH
	Varispeed – VSD-3 phase, 20 HP, 400V 15kw	EACH
	Panel Filters WV350 (595x595x50)	EACH
	Motor 11kw 4P 400/690V	EACH
	Johnson Actuator Valves for AHU(RA-3141-7326)	EACH
	Extractor Fan Motor (Spur) WEG 50Hz/1455RPM 380/660V	EACH
	Motor 4KW 4P 1430RPM IP55 55Hz	EACH
	Isolator GEWISS Rotary 32A 3P SURF/ENCL PVC IP65	EACH
	AHU Motor 22KW 400V 1460RPM 42.9Hz	EACH
	Motor 7.5KW, 2149RPM, 400V 50Hz 3Phase	EACH
	Motor 11kw 1695RPM 400V 50Hz 3Phase	EACH
	Motor 9.2Kw 1695RPM	EACH
	Cooling Tower Motor 15KW 380V/3/50	EACH
	FCU Motor DM45 80W 240V	EACH
	Cooling Tower Vee Belts 3KB 2790(Model FCT2436.A3)	EACH
	Cooling Tower float valve assembly RK011500HP	EACH
	Diffusers VCD 250.1.S595 1.50K Mas MLM24 MPW	EACH
	Diffusers CRD 200 R580 MPW Bayonet type diff.	EACH
	Star Delta Timer 230V	EACH

ANNEX N

ACSA Maintenance Procedure for HVAC System - D080 025M
Available upon request from the ACSA service manager
Further the following legislative must be adhered

Maintenance of HVAC Systems
Pressure Equipment Regulations
SANS 10147 and 347
SANS 10400 Part O
SANS 10400 Part T
EN12101
Insurance Requirements
CIDB Registration in category ME for the service provider
Bidding Entity or Nominated Electrical Subcontractor Registration with the Department of Labour as an Electrical Contractor

ANNEX O

HVAC system – standard operating procedure

SOP Procedure	HVAC System Operation and Maintenance SOP
Purpose	This SOP outlines the procedures for the safe and efficient operation of the Heating, Ventilation, and Air Conditioning (HVAC) system to ensure optimal indoor air quality, temperature, and humidity control.
Scope	Applies to all personnel responsible for operating, monitoring, and maintaining the HVAC system.
Personal Protective Equipment (PPE)	Gloves, eye protection, and hearing protection, as necessary.
Location	Specify HVAC system locations where this SOP applies.
Personnel Involved	Authorized HVAC operators, technicians, and maintenance staff.
Hazards and Risks	Exposure to electrical components, moving parts, high temperatures, refrigerant leaks.

Step	Task	Responsible Person	Equipment Required	Safety Precautions	Expected Outcome
1	**Safety Precautions**	All personnel	PPE (gloves, eye protection, ear protection)	Ensure all personnel wear appropriate PPE, confirm power is off, and follow lockout/tagout procedures.	Safety risks minimized before starting work.
2	**Pre-Operation Checks**	HVAC technician	Inspection tools, replacement filters	Inspect for damage or leaks; check controls and settings, inspect air filters, and confirm electrical supply is operational.	System is safe and ready for startup.
	Inspect System Components			Check ducts, filters, coils, piping, and ensure vents are unobstructed.	All components are undamaged and clear.
	Check Controls and Settings			Verify thermostat settings, check PLC/BMS for alerts.	Control settings are correct; no alarms.
	Review Air Filters		Replacement filters	Ensure filters are clean and installed correctly. Replace if needed.	Clean and properly installed filters.
	Ensure Electrical Supply		Voltage tester	Confirm main power, check circuit breakers and fuses.	Electrical supply is verified.
3	**Startup Procedure**	HVAC operator	HVAC control panel	Ensure startup sequence is followed for main power, control system activation, thermostat setting, and airflow checks.	HVAC system starts up safely and efficiently.
	Turn on Main Power			Switch on main power supply to HVAC system.	Main power activated successfully.
	Activate Control System			Power on BMS, select operating mode, confirm system status is Operational.	Control system is active in the desired mode.
	Set Thermostat Controls		Thermostat control	Adjust thermostat to desired temperature range.	Correct temperature range set.
	Check Airflow and Operation		Thermometers	Ensure airflow to all zones, monitor supply and return air temperatures.	Proper airflow and temperature consistency.

4	**Monitoring During Operation**	HVAC technician	Control panel, logging equipment	Regularly check system status, inspect control panel readouts, and log operational data.	System operates within safe, expected parameters.
	Regular System Checks			Monitor temperatures, humidity, and airflow; check for unusual sounds or odours.	System runs smoothly, with no irregularities.
	Inspect Control Panel Readouts			Confirm readings for temperature, pressure, and humidity; respond to alarms if needed.	All readings are within safe limits.
	Record Operational Data		Logbook, data recording tools	Log key parameters (e.g., every 2 hours) to track performance.	Consistent record of system performance.
5	**Shutdown Procedure**	HVAC operator		Follow shutdown sequence: turn off control system, power down equipment, inspect, and log.	HVAC system shuts down safely.
	Switch Off Control System			Turn off thermostat and control system, ensuring idle status.	Control system is off and idle.
	Power Down Equipment			Deactivate main power, fans, and auxiliary equipment.	All HVAC components are powered off.
	Conduct Final Inspections		Inspection tools	Check for component wear/damage; secure all panels and access points.	System is ready for next operation cycle.
	Log Shutdown Information		Logbook	Record time, date, and relevant shutdown information.	Accurate shutdown records.
6	**Routine Maintenance Schedule**	Maintenance personnel	Filters, coil cleaning supplies	Adhere to maintenance schedule (monthly, quarterly, annually) and update records.	HVAC system operates efficiently over time.
	Monthly: Air filters, belts		Replacement filters, belt tension tools	Inspect and replace air filters and belts as needed.	Filters and belts are in good condition.
	Quarterly: Coils		Coil cleaning solutions	Inspect and clean condenser and evaporator coils.	Coils are clean and free of debris.
	Annually: Full inspection		Various tools	Inspect refrigerant levels, electricals, ductwork, etc.	Full inspection completed; system optimized.

ANNEX P

Maintenance of HVAC system – Electrical lockout procedure

Available upon Request from the ACSA service manager

Electrical Lockout Procedure

SOP Procedure	HVAC Electrical Lockout Procedure
Purpose	To ensure a safe and standardized lockout process for the HVAC system to prevent accidental energization during maintenance or repair.
Scope	Applies to all personnel performing maintenance or repair on HVAC electrical components.
Personal Protective Equipment (PPE)	Insulated gloves, safety glasses, hard hat, lockout tag.
Location	HVAC units, control panels, electrical distribution boards
Personnel Involved	HVAC technician, electrical engineer, safety supervisor
Hazards and Risks	Electrical shock, arc flash, equipment damage, unauthorized energization

Step	Task	Responsible Person	Equipment Required	Safety Precautions	Expected Outcome
1	**Notify Affected Personnel**	HVAC technician	Communication tools (radio, phone)	Inform all personnel in the area of the lockout procedure to be carried out.	All personnel are aware of the lockout procedure.
2	**Identify Energy Sources**	HVAC technician and engineer	Lockout/tagout (LOTO) kit, energy map	Verify all electrical sources connected to the HVAC system, including secondary sources.	All energy sources are identified.
3	**Shut Down Equipment**	HVAC technician		Power down HVAC equipment via the control panel following standard shutdown procedure.	Equipment is powered off safely.
4	**Isolate Energy Sources**	HVAC technician	Circuit breaker panel, lockout devices	Locate and open the circuit breaker or disconnect switch controlling the HVAC system.	System is isolated from all energy sources.
5	**Apply Lockout Devices**	HVAC technician	Lock and tag, lockout devices	Apply lock and tag on the circuit breaker or disconnect switch. Each technician working must use their own lock.	Lockout devices are in place, preventing re-energization.
6	**Release Stored Energy**	HVAC technician	Discharge tool, if required	Release any stored energy in capacitors or other components following safe discharge procedures.	All stored energy is safely discharged.
7	**Verify Isolation**	HVAC technician and supervisor	Multimeter or voltage tester	Test for absence of voltage at the electrical terminals to confirm isolation.	Equipment is verified as fully de-energized.
8	**Complete Lockout Tag**	HVAC technician	Lockout tag, pen	Fill out the lockout tag with relevant information (name, date, reason for lockout) and attach it to the lockout device.	Lockout tag is completed and visible.

9	**Conduct Maintenance or Repair**	Authorized personnel	Tools for maintenance	Proceed with maintenance or repair work on the HVAC system.	Maintenance work proceeds safely.
10	**Inspect Work Area for Completion**	HVAC technician and supervisor		Confirm that all tools and equipment have been removed and that all components are properly reassembled.	Work area is clear and ready for re-energization.
11	**Remove Lockout Devices**	HVAC technician		Each technician removes their lock and tag only after confirming that the work is complete, and the area is clear.	Lockout devices are removed following proper procedure.
12	**Restore Power**	HVAC technician		Close the circuit breaker or reconnect the power supply to the HVAC system.	Power is safely restored to the HVAC system.
13	**Notify Personnel of Completion**	HVAC technician	Communication tools	Inform affected personnel that the lockout is complete, and the equipment is operational.	All personnel are notified that work is complete.

ANNEX Q

Cape Town International Airport – Operating instruction for HVAC system

Same as the Safety Operating Procedure

ANNEX R

HVAC System - Fire Emergency procedure

Available upon Request from the ACSA service manager

ANNEX S

ACSA IMC procedure for call out and work orders

Available upon Request from the ACSA service manager

Maintenance Management

Contractor is expected to adhere to a 90/10 planned vs. unplanned maintenance split on monthly basis.

On arrival to site (airport) to attend to a callout, a contractor need to notify IMC (ACSA Helpdesk at CIAHELPDESK@airports.co.zaor +27 (0) 21 937 1257) and also notify IMC (ACSA Helpdesk) on completion of the repair work before leaving the site (airport).

Checklists and Logbooks

Technical checklists and logbooks to be kept and verified by ACSA personnel as per OEM or SABS standard. Audits will be performed on ad hoc basis to assess quality of checklists and logbooks.

DAR (Data Analysis and Reporting)

Weekly and Monthly feedback report to be compiled and submitted to ACSA mechanical maintenance department stipulating per area cost breakdown, findings and recommendations. This report should state number of failures, availability and reliability of the particular equipment. Daily reports to be available on request.
If an incident or deviation occurs, an RCA (Root Cause Analysis) investigation to be carried out along with ACSA mechanical maintenance personnel to determine the root cause and corrective actions required to bring the physical asset back online.
A technical investigation report of any incident should be submitted within 24 hours to ACSA Mechanical Maintenance Department.
Inventory control audits reports to be submitted on monthly basis.

A management report that consists of a task list should be submitted for all repairs and replacements and not just an invoice.

ANNEX T

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 •Damage by others (users and Third parties) i.e. end users •Incorrect use •Foreign material is system	-No impact to reliability/Maintainability. -Impact on availability from operations view These are some of the occurrences that may not be considered the Normal Operating conditions Impact on availability of the system if faulty
Other	•Lack of information/Drawings •Lack of access due to no fault of the contractor after they have requested access timeously •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) 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 Repairs-No Production hold-up	-Affect Maintainability No impact on service provider. The Risk is not sitting with a single owner The repairs that does not have impact on Availability, except if the repairs are done when the equipment is required to operate

Quality issues	Too cold/Too hot (out of specification), Too cold/Too hot(within Temp specification range)	Availability/Reliability/Maintainability?

ANNEX U

ACSA Mechanical Standardised Minimum: legal requirements and minimum competency requirements and including certificates requirements and maintenance records must be produced when required

Legislative Records / Certificates and Maintenance records needed	Frequency of records
Certificate of Conformity for Refrigerant gas lines	Certificate of Conformity for Refrigerant gas lines
Legionella test and clearance certificate (SANS 10147)	Yearly (Y)
Smoke Extraction fan test records	Monthly (M)
Smoke duct cleaning records	Quarterly
Toilet Extraction fan test records	Monthly (M)
Independent Registered Engineer Roof vents, Fire Dampers, Smoke/Toilet Extraction and Fresh air fans Test Report (Insurance Purposes)	Yearly (Y)
Roof vents test records	Monthly (M)
Fresh air fans test records	Monthly (M)
Maintenance records (As Per Procedure)	Monthly/6 Monthly/Yearly
Fire dampers test records	Monthly (M)
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)
DB Earth leakage test records	Quarterly (Q)
System reviews by ECSA registered professionals	Yearly (Y)

ANNEX V

ACSA Inventory procedure

Available upon Request from the ACSA service manager

ANNEX W

Current Guarantee and Warrantee

No Performance bonds and guarantees applicable on the service information
All repair work shall carry a defect free be guaranteed for a period of 3 months after completion of work. For All new installation will carry a 12months defect free period