



NEC3 Engineering & Construction Contract

Between Airports Company South Africa
(Registration no: 1993/004149/06)

and [Insert at award stage]
(Reg No. _____)

**for Design and build of a refrigerant leak detection and
gas extraction system for the chiller plants over a
period of 24 months.**

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CONTRACT No.

Part C1: Agreements & Contract Data

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C1.1 Form of Offer & Acceptance

Offer

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

Design and build of a refrigerant leak detection and gas extraction system for the chiller plants over a period of 24 months at O.R. Tambo International Airport

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

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

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

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

Signature(s)

.....

Name(s)		
Capacity		
For the tenderer:		

(Insert name and address of organisation)

Name & signature of witness		Date
Tenderer's CIDB registration number:		

Acceptance

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

The terms of the contract, are contained in:

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

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

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

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

Signature(s)

Name(s)

Capacity

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

.....
(Insert name and address of organisation)

Name &
signature of
witness

Date

.....

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

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

Note:

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

No.	Subject	Details
1		
2		
3		
4		
5		
6		
7		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

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

For the tenderer:

For the Employer

Signature

Name

Capacity		
On behalf of	<i>(Insert name and address of organisation)</i>	<i>(Insert name and address of organisation)</i>
Name & signature of witness		
Date		

C1.2a ECC3 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
	dispute resolution Option	A: Priced contract with activity schedule
	and secondary Options	W1: Dispute resolution procedure
		X2 Changes in the law
		X5: Sectional Completion
		X7: Delay damages
		X13: Performance Bond
		X16: Retention
		X18: Limitation of liability
		Z: Additional conditions of contract
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The <i>Employer</i> is (Name):	Airports Company South Africa SOC Limited (reg. no: 1993/004149/06), a juristic person incorporated in terms of the company laws of the Republic of South Africa
	Address	Registered office at OR Tambo International Airport Airports Company South Africa, 3rd Floor ACSA North Wing Offices

O R Tambo International Airport
Kempton Park
1627

10.1	The <i>Project Manager</i> is: (Name)	
	Address	Airports Company South Africa O R Tambo International Airport ACSA Admin. Building 3rd Floor North Wing Offices Kempton Park 1627
	e-mail	
10.1	The <i>Supervisor</i> is: (Name)	
	Address	Airports Company South Africa O R Tambo International Airport ACSA Admin. Building 3rd Floor North Wing Offices Kempton Park 1627
	e-mail	
11.2(13)	The <i>works</i> are	Design and build of a refrigerant leak detection and gas extraction system for the chiller plants over a period of 18 months, as fully described in C3.
11.2(14)	The following matters will be included in the Risk Register	Long-lead equipment Hazardous materials.
11.2(15)	The <i>boundaries of the site</i> are	O.R. Tambo International Airport
11.2(16)	The Site Information is in	Part 4: Site Information
11.2(19)	The Works Information is in	Part 3: Scope of Work and all documents
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa
13.1	The <i>language of this contract</i> is	English
13.3	The <i>period for reply</i> is	3 Working days

2 The *Contractor's* main responsibilities

Data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in *italics* used in this section are identified elsewhere in this Contract Data.

3 Time

11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	78 weeks after the Contract Date. The contract terminates exactly 78 weeks after the Contract Date unless it is changed according to this contract.	
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	Condition to be met	key date
		Stage 1 confirmation, measured surveys, design basis and coordinated Stage 2 concept design accepted.	4 weeks after the Contract Date
		Coordinated Stage 3 design, discipline calculations, design-risk review and native application/cloud architecture accepted.	10 weeks after the Contract Date
		Stage 4 issued-for-construction design, software/cloud documentation and construction readiness accepted.	16 weeks after the Contract Date
		Application/cloud development environment established and accepted by ACSA ICT/Cybersecurity.	24 weeks after the Contract Date
		Long-lead detection, extraction, electrical and control equipment procured and available for FAT or delivery.	36 weeks after the Contract Date

		Mechanical, electrical, detection, alarm and controls installation complete at Domtex, KB2, Western Precinct and Cargo; cloud platform and native mobile application build complete.	60 weeks after the Contract Date
		Cybersecurity verification completed and all critical and high-risk findings closed.	66 weeks after the Contract Date
		SAT and performance certification completed for each plant room; end-to-end integration and user-acceptance testing accepted.	70 weeks after the Contract Date
		Operations and maintenance training completed.	76 weeks after the Contract Date
		Complete handover dossier and Stage 6 close-out accepted and Completion achieved.	78 weeks after the Contract Date

X5	The completion date for each section of the works is:	Section	Completion Date
		Domtex chiller plant	70 weeks after the Contract Date
		KB2 chiller plant	70 weeks after the Contract Date
		Western Precinct chiller plant	70 weeks after the Contract Date
		Cargo chiller plant	70 weeks after the Contract Date

30.1	The <i>access dates</i> are:	Part of the Site	Date
		Domtex and KB2 chiller plants	Starting Date, subject to permits

		and approved access
	Western Precinct and Cargo chiller plants	Starting Date, subject to permits and approved access
	Central BMS/IMC interface areas	Starting Date, subject to permits and approved access
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	2 weeks of the Contract Date.
31.2	The <i>starting date</i> is	The Contract Date.
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	4 weeks.
35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.	
4	Testing and Defects	
42.2	The <i>defects date</i> is	52 weeks after Completion of the whole of the works.
43.2	The <i>defect correction period</i> is	One week for safety-critical detection, alarm, extraction and BMS defects; two weeks for other Defects, unless the Project Manager accepts another period.
47	The Contractor submits a quality plan for acceptance within:	4 weeks of the Contract Date.
5	Payment	
50.1	The <i>assessment interval</i> is	between the 7th calendar day of each successive month.
51.1	The <i>currency of this contract</i> is the	South African Rand.
51.2	The period within which payments are made is	4 weeks after receipt of a valid tax invoice .

6	Compensation events	There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.
7	Title	There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.
8	Risks and insurance	
80.1	These are additional <i>Employer's</i> risks	1. None.
84.1	The <i>Employer</i> provides these insurances from the Insurance Table	See Annexure D to this Contract Data provided by the Employer.
84.1	The <i>Employer</i> provides these additional insurances	The terms and other matters applicable to these insurances provided by the Employer (and to insurances generally) are detailed in the insurance schedule attached as section C1.4 to the contract ("the insurance Schedule)
84.1	The <i>Contractor</i> provides these additional insurances	As stated in C1.4
84.2	The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the <i>works</i> , Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) caused by activity in connection with this contract for any one event is	Whatever the <i>Contractor</i> deems necessary in addition to that provided by the <i>Employer</i>.
84.2	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract for any one event is	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Contractor's</i> common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R [●].
9	Termination	There is no reference to Contract Data in this section of the core clauses and terms in italics

used in this section are identified elsewhere in this Contract Data.

10 Data for main Option clause

A	Priced contract with activity schedule	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.
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11 Data for Option W1

W1.1	The <i>Adjudicator</i> is (Name)	The person selected from the panel of adjudicators listed in Annexure C of this Contract Data, by the party intending to refer a dispute to him.
W1.2(3)	The <i>Adjudicator nominating body</i> is:	The Chairman of the Johannesburg Society of Advocates, or his successor or his nominee.
W1.4(2)	The <i>tribunal</i> is:	Arbitration.
W1.4(5)	The <i>arbitration procedure</i> is	The latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	In the city where the Site is located, within South Africa.
	The person or organisation who will choose an arbitrator	
	1. if the Parties cannot agree a choice or	the Chairman for the time being or his nominee of
	2. if the arbitration procedure does not	the Association of Arbitrators (Southern Africa) or
	state who selects an arbitrator, is	its successor body.

12 Data for secondary Option clauses

X2	Changes in the law	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.
X7	Delay damages (but not if Option X5 is also used)	
X7.1	Delay damages for Completion of the whole of the <i>works</i> are	R1,000 per calendar day, subject to the contractual limit stated in the Z clauses.

X13	Performance bond	
X13.1	The amount of the performance bond is	5% of the total of the Prices excluding VAT.
X16	Retention (not used with Option F)	
X16.1	The <i>retention percentage</i> is	5% of each amount due; retention-free amount R0; maximum retention 5% of the total of the Prices.
X18	Limitation of liability	
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	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 <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	The Total Costs Incurred and/or Damages Suffered to the Employer's Property
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to	The Total Costs Incurred and/or Damages Suffered
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	The Total Costs Incurred and/or Damages Suffered
X18.5	The <i>end of liability date</i> is	The date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.
Z	The <i>Additional conditions of contract</i> are	
		Z1 to Z24 below.

AMENDMENTS TO THE CORE CLAUSES

Z1 Interpretation and the law

- Z1.1 Add to core clause 12.3:** Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Project Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.
- Z1.2 Add the following as a new core clause 12.5:**
- Z1.2.1** In this contract:
- Z1.2.1.1** references to any Party to the Contract include its successors or permitted assigns;
 - Z1.2.1.2** references to the Contractor include the obligations of its personnel;
 - Z1.2.1.3** the references to the provisions of any law include such provisions as amended, re-enacted or consolidated from time to time in so far as such amendment, re-enactment or consolidation applies or is capable of applying to any works under this Contract;
 - Z1.2.1.4** references to this Contract and any deed, Contract or instrument are deemed to include references to this Contract or such other deed, agreement or instrument as amended, novated, supplemented, varied or replaced from time to time;
 - Z1.2.1.5** references to a "person" include a natural person, company or any other artificial person or other corporate entity, a charity, trust, partnership, joint venture, syndicate, or any other association of persons;
 - Z1.2.1.6** references to "month" means a calendar month;
 - Z1.2.1.7** headings are for convenience only and are not taken into consideration in the interpretation of the Contract;
 - Z1.2.1.8** where any number of days is prescribed, those days are reckoned exclusively of the first and inclusively of the last day unless the last day falls on a day that is not a working day, in which event the last day is the next succeeding working day;
 - Z1.2.1.9** any provision in Contract that is or may become illegal, invalid or unenforceable in any jurisdiction is ineffective to the extent of such prohibition or unenforceability in such jurisdiction and is treated as severed from the balance of Contract in such jurisdiction, without invalidating the remaining provisions of Contract in such jurisdiction or affecting it in any other jurisdiction;
 - Z1.2.1.10** references to any amount means that amount exclusive of VAT, unless the amount expressly includes VAT;
 - Z1.2.1.11** the rule of construction that if general words or terms are used in association with specific words or terms that are a species of a particular genus or class, the meaning of the general words or terms shall be restricted to that same class shall not apply, and whenever the word "including" is used followed by

specific examples, such examples shall not be interpreted so as to limit the meaning of any word or term to the same genus or class as the examples given;

- Z1.2.1.12** the rule of construction that the Contract is interpreted against or to the disadvantage of the party responsible for the drafting or preparation of Contract does not apply;
- Z1.2.1.13** words and abbreviations that have well known technical or trade meanings are used in the Contract in accordance with such recognized meanings;
- Z1.2.1.14** references to a "*subsidiary*" or a "*holding company*" is references to a direct or indirect subsidiary or holding company as defined in the law of the jurisdiction of the place of incorporation of the company that has a subsidiary or holding company and "*affiliate*" is any company that is under common control with such subsidiary or holding company;
- Z1.2.1.15** time is of the essence in the performance of the parties' respective obligations.

Z2 The Project Manager and Supervisor: add the following at the end of core clause 14.2:

- Z2.1** The Project Manager and the Supervisor may take an action which they have delegated.

Z3 Early Warning: add the following at the end of core clause 16.2:

- Z3.1** The Contractor ensures that a subcontractor attends risk reduction meeting if its attendance would assist in deciding the actions to be taken.

Z4 Providing the Works: Delete core clause 20.1 and replace with the following:

- Z4.1** The *Contractor* provides the works in accordance with the Works Information and warrants that the results of the Works, when complete, shall be fit for their intended purpose as stated in the Works Information, and if no such purposes is stated, the ordinary purpose of the Works.

Z5 Subcontracting:

- Z5.1** **The following clause is added as a new core clause 26.4:** "Within 5 days of request by the *Project Manager*, the Contractor provides proof to the *Project Manager* that the Contractor's payment obligations towards its Subcontractors have been discharged. Failure by the Contractor to provide such proof to the satisfaction of the *Project Manager* entitles the *Employer* to instruct the *Project Manager* to certify payment directly to any such Subcontractor and the *Contractor* shall have no recourse to recover such amounts from the *Employer*. Such direct payment do not create privity of contract between the Employer and such Subcontractor. The *Employer* may recover such direct payment from the *Contractor*."

Z6 Other responsibilities: add the following at the end of core clause 27:

- Z6.1** The *Contractor* has satisfied himself, prior to the Contract Date, as to the completeness, sufficiency and accuracy of all information and drawings provided to him as at the Contract Date.

- Z6.2** The *Contractor* is responsible for the correct setting out of the *Works* in accordance with the original points, lines and levels stated in the *Works* Information or notified by the *Project Manager*, *Supervisor* or the *Employer*. Any errors in the positioning of the *Works* are rectified by the *Contractor* at the *Contractor's* own costs.
- Z7** **Acceleration: add the following new provisions at the end of core clause 36:**
- Z7.1** The *Project Manager's* reply is either:
- Z7.1.1** A notification that the quotation is accepted, in which case, the *Project Manager* changes the Prices, Completion Date and Key Dates and accepts the revised programme; or
- Z7.1.2** A notification that the quotation is not accepted and that the Prices, Completion Date and Key Dates are not changed.
- Z8** **Extending the defects date: add the following as a new core clause 46:**
- Z8.1** If the *Employer* cannot use the *works* due to a Defect, which arises after Completion and before the *defects date*, the *defects date* is delayed by a period equal to that during which the *Employer*, due to a Defect, is unable to use the *works*.
- Z8.2** If part of the *works* is replaced due to a Defect arising after Completion and before the *defects date*, the *defects date* for the part of the *works* which is replaced is delayed by a period equal to that between Completion and the date by when the part has been replaced.
- Z8.3** The *Project Manager* notifies the *Contractor* of the change to a *defect date* when the delay occurs. The period between Completion and an extended *defects date* does not exceed twice the period between Completion and the *defects date* stated in the Contract Data.
- Z9** **Quality Management System: add the following as a new core clause 47:**
- Z9.1** The *Contractor* implements and maintains a quality management system with the requirements stated in the *Works* Information.
- Z9.2** Within the period stated in the Contract Data, the *Contractor* provides the *Project Manager* with a quality plan for acceptance. A reason for not accepting the quality plan is that it does not allow for the *Contractor* to Provide the *Works*.
- Z9.3** If any changes are made to the quality plan, the *Contractor* provides the *Project Manager* with the changes quality plan for acceptance.
- Z9.4** The *Project Manager* may instruct the *Contractor* to correct a failure to comply with the quality plan. This instruction is not a compensation event.
- Z10** **Assessing the amount due:**

- Z10.1** Delete the second bullet point of core clause 50.1 and replace with the following: “within thirteen weeks of termination of this Contract”
- Z11** Final assessment: add the following as a new core clause 53:
- Z11.1** The *Project Manager* makes a final assessment and certifies final payment in accordance with the Contract. The final payment is made within four weeks of the assessment.
- Z11.2** An assessment of the final amount due is conclusive evidence of the final amount due under or in connection with the Contract, unless a Party raises a dispute in relation to the assessment of the final amount due.
- Z11.3** The assessment of the final amount due is changed to include any agreement the Parties reached and/or a decision of the Adjudicator which has not been referred to the tribunal within four weeks of that decision. The changed assessment becomes conclusive evidence of the final amount due under or in connection with the Contract.
- Z12** Notifying compensation events:
- Z12.1** Delete the last sentence in core clause 61.3 and replace with the following: “If the *Contractor* does not notify a compensation event within four weeks of becoming aware of the event, he is not entitled to a change in the Prices, the Completion date or a Key Date and the *Employer* is absolved from all liability in relation to such event.”
- Z13** Assessing compensation events:
- Z13.1** The following is added at the end of core clause 63.4: “the *Contractor* shall only be entitled to changes to the Prices, the Completion Date and/or the Key Date if the compensation event affects the critical path.”
- Z14** Termination
- Z14.1** 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 rescue proceedings”.

AMENDMENTS TO THE SECONDARY OPTION CLAUSES

- Z15** Changes in Law: Add the following clause to secondary option X2 as X2.2:
- Z15.1** A change in law is defined as:
- Z15.1.1** the adoption, enactment, promulgation, coming into effect, repeal, amendment, reinterpretation, change in application or other modification after the Contract Date of any law, excluding (i) the enactment of any bill inside the country, but only if such bill is enacted without any material changes being made to the contents of such bill from the form published in the Gazette (as defined in the Interpretation Act, 1957) as at the Contract Date, and (ii) any such modification in law relating to any

taxes, charges, imposts, duties, levies or deductions that are assessed in relation to a person's income

- Z15.1.2** any permit being terminated, withdrawn, amended, modified or replaced, other than (i) in accordance with the terms upon which it was originally granted, (ii) as a result of the failure by the *Contractor* to comply with any condition set out therein, or (iii) as a result of any act or omission of the *Contractor*, any Subcontractor or any affiliate to the *Contractor*.
- Z16. Delay damages: add the following to secondary Option X7 (if applicable in this contract)**
- Z16.1** If the amount due for the *Contractor's* payment of delay damages reaches the limits stated in this Contract Data for Option X7, the *Employer* may, at its sole discretion, terminate the *Contractor's* obligation to Provide the Works.
- Z16.2** If the *Employer* terminates in terms of this clause, the procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table
- Z17 Performance Bond**
- Z17.1 Amend the first sentence of clause X13.1 to read as follows:** The *Contractor* gives the *Employer* an unconditional, on-demand performance bond, provided by a bank or insurer which the *Project Manager* and the *Employer* have accepted, for the amount stated in the Contract Data and in the form set out in Annexure B of this Contract Data.
- Z17.2 Add the following new clause as Option X13.2:** The *Contractor ensures* that the performance bond is valid and enforceable until the end of the *contract period*. If the terms of the performance bond specify its expiry date and the end of the *contract period* does not coincide with such expiry date, four weeks prior to the said expiry date, the *Contractor* extends the validity of the performance bond until the end of the *contract period*. If the *Contractor* fails to so extend the validity of the performance bond, the *Employer* may claim the full amount of the performance bond and retain the proceeds as cash security
- Z18 Limitation of liability: Insert the following new clause as Option X18.6:**
- Z18.1** The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00.
- Z18.2** Notwithstanding any other clause in this contract, any proceeds received from the security bonds and guarantees provided by the *Contractor* in terms of this Contract and 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

- Z19 Cession, delegation and assignment**

- Z19.1** 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*.
- Z19.2** The *Employer* may, on written notice to the *Contractor*, cede and delegate its rights and obligations under this contract to any person or entity.
- Z20 Joint and several liability**
- Z20.1** 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.
- Z20.2** The *Contractor* shall, within 1 week of the Contract Date, notify the *Project Manager* and the *Employer* of the key person who has the authority to bind the *Contractor* on their behalf.
- Z20.3** 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*.
- Z21 Ethics**
- Z21.1** The *Contractor* undertakes:
- Z21.1.1** 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;
- Z21.1.2** 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.
- Z21.2** 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.
- Z21.3** 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.
- Z22 Confidentiality**

- Z22.1** All information obtained in terms of this contract or arising from the implementation of this contract shall be treated as confidential by the *Contractor* and shall not be used or divulged or published to any person not being a party to this contract, without the prior written consent of the *Project Manager* or the *Employer*, which consent shall not be unreasonably withheld.
- Z22.2** If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the *Project Manager*.
- Z22.3** This undertaking shall not apply to –
- Z22.3.1** 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;
- Z22.3.2** 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;
- Z22.3.3** 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);
- Z22.4** The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.
- Z22.5** The *Contractor* ensures that all his Subcontractors abide by the undertakings in this clause.
- Z23 Liens and Encumbrances**
- Z23.1** 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
- Z24 Intellectual Property**
- Z24.1** 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.
- Z24.2** IP rights remain vested in the originator and shall not be used for any reason whatsoever other than carrying out the *works*.

- Z24.3** 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.
- Z24.4** 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.
- Z24.5** 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:
- Z24.5.1** the *Contractor's* design, manufacture, construction or execution of the Works;
- Z24.5.2** the use of the *Contractor's* Equipment, or
- Z24.5.3** the proper use of the Works.
- Z24.6** 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.

Annexure A: One-in-ten-year-return *weather data* obtained from SA Weather Bureau for [weather station]

If any one of these *weather measurements* recorded within a calendar month, before the Completion Date for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the amount stated below then the *Contractor* may notify a compensation event.

	<i>Weather measurement</i>				
Month	Cumulative rainfall (mm)	Number of days with rain more than 10mm	Number of days with min air temp < 0 deg.C	Number of days with snow lying at 08:00 CAT	[Other measurements if applicable]
January	[•]	[•]	[•]	[•]	
February	[•]	[•]	[•]	[•]	
March	[•]	[•]	[•]	[•]	
April	[•]	[•]	[•]	[•]	
May	[•]	[•]	[•]	[•]	
June	[•]	[•]	[•]	[•]	
July	[•]	[•]	[•]	[•]	
August	[•]	[•]	[•]	[•]	
September	[•]	[•]	[•]	[•]	
October	[•]	[•]	[•]	[•]	
November	[•]	[•]	[•]	[•]	
December	[•]	[•]	[•]	[•]	

Only the difference between the more adverse recorded weather and the equivalent measurement given above is taken into account in assessing a compensation event.

Annexure B: Pro forma Security Bonds and Guarantee

Pro forma Performance Bond – Demand Guarantee (for use with Option X13)

(to be reproduced exactly as shown below on the letterhead of the Bank providing the Bond / Guarantee)

[Insert *Contractor's* name and registered address]

Bank reference No.

Date:

Dear Sirs,

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

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

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

- | | | |
|-----|------------------------|--|
| 1.7 | "Guaranteed Sum" means | 5% of contract value excluding VAT which must be submitted within 10 working days from notification of award |
| 1.8 | "works" means | Design and build of a refrigerant leak detection and gas extraction system for the chiller plants over a period of 18 months |
3. At the instance of the *Contractor*, we the undersigned _____ and _____, in our respective capacities as _____ and _____ of the Bank, and duly authorized thereto, confirm that we hold the Guaranteed Sum at the disposal of the *Employer* as security for the proper performance by the *Contractor* of all of its obligations in terms of and arising from the Contract and hereby undertake to pay to the *Employer*, on written demand from the *Employer* received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.
 4. A demand for payment under this guarantee shall be made in writing at the Bank's address and shall:
 1. be signed on behalf of the *Employer* by a director of the *Employer*;
 2. state the amount claimed ("the Demand Amount");
 3. state that the Demand Amount is payable to the *Employer* in the circumstances contemplated in the Contract.
 4. Notwithstanding the reference herein to the Contract the liability of the Bank in terms hereof is as principal and not as surety and the Bank's obligation/s to make payment:
 1. is and shall be absolute provided demand is made in terms of this bond in all circumstances; and
 2. is not, and shall not be construed to be, accessory or collateral on any basis whatsoever.
 3. The Bank's obligations in terms of this Guarantee:
 1. shall be restricted to the payment of money only and shall be limited to the maximum of the Guaranteed Sum; and
 2. shall not be discharged and compliance with any demand for payment received by the Bank in terms hereof shall not be delayed, by the fact that a dispute may exist between the *Employer* and the *Contractor*.
 3. The *Employer* shall be entitled to arrange its affairs with the *Contractor* in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the *Contractor* or any variation under or to the Contract.
 4. Should the *Employer* cede its rights against the *Contractor* to a third party where such cession is permitted under the Contract, then the *Employer* shall be entitled to cede to such third party

the rights of the *Employer* under this Guarantee on written notification to the Bank of such cession.

5. This Guarantee:

1. shall expire on the Expiry Date until which time it is irrevocable;
 1. is, save as provided for in **Error! Reference source not found.** above, personal to the *Employer* and is neither negotiable nor transferable;
 2. shall be returned to the Bank upon the earlier of payment of the full Guaranteed Sum or expiry hereof;
 3. shall be regarded as a liquid document for the purpose of obtaining a court order; and
 4. shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the Courts of the Republic of South Africa.
 5. will be invalid and unenforceable if any claim which arises or demand for payment is received after the Expiry Date.
1. The Bank chooses domicilium citandi et executandi for all purposes in connection with this Guarantee at the Bank's Address.

Signed at _____ on this _____ day of _____ 20__

For and on behalf of the Bank

Bank Signatories(s)

Name(s) (printed)

Witness(s)

Bank's seal or stamp

Annexure C: ACSA Panel of Adjudicators

One of the following adjudicators shall be selected by the referring party as and when a dispute arises. This panel is valid for a period of three years, commencing on 1 May 2020.

Potential Adjudicator	Email Address	Chamber
Adv. Mkhululi Duncan Stubbs	duncan.stubbs@gmail.com	Thulamela Chambers
Adv. Arzhar Bham SC	bhamae@law.co.za	Victoria Mxenge
Adv. Mohhamed Chohan SC	chohann@counsel.co.za	Group One
Adv. Benny Makola	benny.makola@gmail.com	Group 621
Adv. Vincent Maleka SC	ivmaleka@mweb.co.za	Thulamela Chambers
Adv. Chris Loxton SC	loxton@counsel.co.za	Group One

Annexure D: ACSA Insurance Clauses

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

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

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

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

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

Section 1 Of The Policy – Contract Works

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

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

This insurance contains the following limitations and warranties;

Open Trench Limitation

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

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

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

Section II of the Policy – Contractors Public Liability

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

Section III of the Policy – Removal Of Lateral Support Liability

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

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

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

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

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

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

c) **Design & Construct Professional Indemnity Insurance** which provides indemnity against legal liability to pay compensation as a result of any actual or alleged negligent act, error or omission in the performance of the Professional Duties of the insured and arising from the execution of this project. The limit of indemnity under this insurance shall be ***R25,000,000 in the aggregate during**

the annual policy period of insurance that ACSA effect such cover during the policy period from 1 April to 31 March during each policy period of insurance.

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

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

Professional Duties do not include:

- a) Labour and construction work which would normally be the responsibility of the building or engineering contractor.
- b) Supervision of the construction works usually undertaken by a building or engineering contractor.

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

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

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

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

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

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

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

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

Section 1 Of The Policy – Contract Works

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

Section 2 Of The Policy – Contractors Public Liability

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

Section 3 Of The Policy – Removal Of Lateral Support Liability

R75,000 each and every claim.

b) Contract Works SASRIA

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

c) Design & Construct Professional Indemnity Insurance

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

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

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

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

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

Airports Company South Africa:

Nokulunga Masiza

Tel: +27 (0)11 723 1400

M: +27 (0)79 512 0532

Nokulunga.Masiza@airports.co.za

Buhle Mnguni

D: +27 (0)11 723 1400

M: +27 (0)74 535 9075

Buhle.Mnguni@airports.co.za

- b) Preserve damage and make it available for inspection by a representative of the Insurers.
- c) Wherever possible, photographs of damage should be taken.
- d) Inform the police authorities promptly in the event of loss or damage by theft, burglary or any malicious persons(s) for the purpose of recovering any property so lost, discovering the guilty person or persons, and having him, her or them duly prosecuted.
- e) Advise the Insurers of any other insurance(s) which may cover the same loss, damage or injury, or any part thereof.
- f) Give to the Insurers every assistance to enable the Insurers to settle or resist any claim against the Insured, or institute any proceedings;
- g) On completion the Claims Advice Form, the form must be sent to the Employers Insurance Brokers for further action (the original may be emailed to the Employers Insurance Broker). (Please do not remove the Claims Advice Form out of this document. Rather photocopy the form and send the copy to the Employers Insurance Brokers).
- h) The Employer and the employers Insurance brokers / Insurers or their appointed loss adjusters shall have the right to make all and any enquiry's on the Site of the Works or elsewhere as to the cause and results of any such occurrence and the Contractor shall co-operate in carrying out such enquiry's.
- i) The Contractor, Project Managers and Consultants must allow free access to Insurers' assessors for the purpose of investigating and assessing the loss or damage.
- j) The Contractor must not proceed with the making good any off the loss without the prior authorisation of the Insurers.**

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

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

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

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

1. Insurance Effected by the Contractor.

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

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

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

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

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

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

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

In the event that a claim is made against the Employer in connection with such insurance, the Contractor shall indemnify and hold harmless the Employer against any such claim.

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

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

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

Should the Contractor believe that the Employer effected Contract Works, Public Liability and Design & Construct Professional Indemnity deductibles as noted in Clause 1.1(a) and (c) be considered to be unacceptable to the Contractor, then the Contractor must obtain Buy Down cover for these deductibles to a deductible considered by the Contractor as being acceptable in respect of the works being undertaken.

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

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

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

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

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

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

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

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

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

j) Miscellaneous Insurance

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

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

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

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

2.4 Sub-Contractors.

The Contractor shall:

- a) ensure that all potential and appointed Sub-contractors are aware of the whole contents of these Insurance Clauses, and
- b) enforce the compliance by sub contract agreement between the Contractor and Sub-Contractor and where applicable that the Sub Contractor effect similar insurance relating to the insurances required to be effected by the Contractor under Clause 2 (Contractor effected insurances).

APPENDIX A

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

Send to : Airports Company South Africa

E-Mail The Following People :

Nokulunga.Masiza@airports.co.za

Buhle.Mnguni@airports.co.za

*

.....

.....

.....

.....

.....

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

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

Date of loss: _____

Reported to site agent by: _____ Date: _____

Reported to Insurance Broker by: _____ Date: _____

Locality of Incident _____

How did the loss occur (cause)? _____

Details and nature of loss or damage to Contract Works _____

Details of other property damaged _____

Names and address of witnesses _____

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

Person whom assessor should contact _____

Telephone/Mobile Numbers Of Contact Person _____

Email Address of Contact Person _____

C1.2b Contract Data

Part two - Data provided by the *Contractor*

Notes to a tendering contractor:

1. Please read both the NEC3 Engineering and Construction Contract (April 2013) and the relevant parts of its Guidance Notes (ECC3-GN)¹ in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 152 to 154 of the ECC3 Guidance Notes.
2. The number of the clause which requires the data is shown in the left-hand column for each statement however other clauses may also use the same data

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

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	% %
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience:	

¹ Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see www.ecs.co.za

	2 Name: Job Responsibilities: Qualifications: Experience:	CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .
11.2(14)	The following matters will be included in the Risk Register	

PART 2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	
C2.2	The <i>activity schedule</i>	

C2.1 Pricing assumptions: Option A

The *conditions of contract*

How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract, April 2013 (ECC3) Option A states:

Identified and defined terms	11.2	(20) The Activity Schedule is the <i>activity schedule</i> unless later changed in accordance with this contract.
		(22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.
		(27) The Price for Work Done to Date is the total of the Prices for each group of completed activities and each completed activity which is not in a group. A completed activity is one which is without Defects which would either delay or be covered by immediately following work.
		(30) The Prices are the lump sum prices for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

Option A is a lump sum form of contract where the work is broken down into activities, each of which is priced by the tendering contractor as a lump sum. Only completed activities are assessed for payment at each assessment date; no part payment is made if the activity is not completed by the assessment date.

Function of the Activity Schedule

Clause 54.1 in Option A states: "Information in the Activity Schedule is not Works Information or Site Information". This confirms that instructions to do work or how it is to be done are not included in the Activity Schedule but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor*

Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Activity Schedule. The Activity Schedule is only a pricing document.

Link to the programme

Clause 31.4 states that "The *Contractor* provides information which shows how each activity on the Activity Schedule relates to the operations on each programme which he submits for acceptance". Hence when compiling the *activity schedule*, the tendering contractor needs to show each activity on the programme he submits with his tender.

Preparing the *activity schedule*

The tendering contractor prepares the *activity schedule* and should study the ECC3 Guidance Notes pages 19 and 20 before doing so. The *Employer* may have instructed the tendering contractor to include particular activities which he has specified and requires the *Contractor* to identify them in his *activity schedule*.

1. Generally it is the Contractor who prepares the Activity Schedule as part of his tender by breaking down the work described within the Works Information into suitable activities which can be well defined, priced as a lump sum and shown on the programme. The Employer, in his Conditions of Tender or in a Tender Schedule, may have listed some items that he requires the Contractor to include in his activity schedule and be priced accordingly.
2. The Prices are defined in clause 11.2(20) as the lump sum for each activity in the activity schedule and the Price for Work Done to Date (PWDD) (the amount due to the contractor) is defined in clause 11.2(24) as the total of the Prices for each activity that has been completed. Hence activities in the activity schedule should be structured so as to provide an acceptable monthly cash flow as they are only assessed for payment on the assessment date if they have been completed.
3. As the Contractor has an obligation to correct Defects (core clause 43.1) and there is no compensation event for this unless the Defect was due to an Employer's risk, the lump sum Prices must also include for the correction of Defects.
4. If the Contractor has decided not to identify a particular activity, the cost to the *Contractor* of doing the work must be included in, or spread across, the other Prices in order to fulfil the obligation to complete the works for the

tendered total of the Prices.

5. There is no adjustment to the lump sum activity schedule price if the amount, or quantity, of work within that activity 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.
6. Hence the Prices tendered by the Contractor in the *activity schedule* are inclusive of everything necessary and incidental to Providing the Works in accordance with the Works Information, as it was at the time of tender, as well as correct any Defects not caused by an Employer's risk.
7. However, the Contractor does not have to allow in his Prices 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.

An activity schedule could have the following format:

Item No.	Programme Reference	Activity description	Price

C2.2 The *Activity schedule*

The Tenderer completes the Price column. Each price is a lump sum excluding VAT and includes all work, risk and ancillary obligations necessary to complete the activity. An activity is paid only when the activity description has been fully completed, and the applicable requirements of the Scope have been met.

Activity No.	Activity description	Price (Excl. VAT)
1.1	Contract mobilisation and kick-off (Including permits etc)	
1.2	Project execution plan and registers	
1.3	First detailed programme	
1.4	Health, safety, security permits, Site establishment and hoarding	
1.5	Quality, logistics, temporary works and commissioning planning	
2.1	Domtex measured survey and asset verification	
2.2	KB2 measured survey and asset verification	
2.3	Western Precinct measured survey and asset verification	
2.4	Cargo measured survey and asset verification	
2.5	Stage 1 confirmation and design basis	
3.1	Coordinated Stage 2 concept design	
3.2	Stage 2 Construction Health and Safety Agent and constructability review	
4.1	Mechanical Stage 3 design	
4.2	Electrical Stage 3 design	
4.3	Control and instrumentation Stage 3 design	
4.4	Native application and cloud Stage 3 design	
4.5	Civil and structural Stage 3 design	

Activity No.	Activity description	Price (Excl. VAT)
4.6	Stage 3 Construction Health and Safety Agent and coordinated design-risk review	
5.1	Mechanical issued-for-construction package	
5.2	Electrical issued-for-construction package	
5.3	C&I issued-for-construction package	
5.4	Application and cloud issued-for-construction package	
5.5	Construction H&S and Stage 4 readiness	
6.1	Detectors for both sides of each chiller, audible/visual alarms and calibration equipment procurement	
6.2	Extraction and ventilation equipment procurement	
6.3	PLC, I/O modules, PLC/sensor power supplies, IoT gateways and cabling procurement	
6.4	Kotlin Multiplatform mobile and cloud development environment	
6.5	Control-panel and software FAT	
7.1	Domtex builders' work and supports	
7.2	Domtex detection, alarms and controls installation	
7.3	Domtex extraction and electrical installation	
8.1	KB2 builders' work and supports	
8.2	KB2 detection, alarms and controls installation	
8.3	KB2 extraction and electrical installation	
9.1	Western Precinct builders' work and supports	
9.2	Western Precinct detection, alarms and controls installation	
9.3	Western Precinct extraction and electrical installation	
10.1	Cargo builders' work and supports	
10.2	Cargo detection, alarms and controls installation	
10.3	Cargo extraction and electrical installation	
11.1	IoT gateway configuration and secure cloud telemetry integration	R 450,000.00

Activity No.	Activity description	Price (Excl. VAT)
11.2	Continuous cloud database, Firebase services, storage and REST API configuration	R 700,000.00
11.3	Cloud dashboards, analytics and carbon-reporting configuration	R 450,000.00
11.4	Android and iOS Kotlin Multiplatform application development	R 1,100,000.00
11.5	Application architecture, SQLDelight offline database, repositories, ViewModels and nested navigation	R 500,000.00
11.6	Cybersecurity verification, Firebase authentication and exception-handling tests	R 300,000.00
11.7	Source code and reproducible deployment package	R 500,000.00
12.1	Domtex SAT: sensor coverage, alarms, I/O, power and extraction performance certification	
12.2	KB2 SAT: sensor coverage, alarms, I/O, power and extraction performance certification	
12.3	Western Precinct SAT: sensor coverage, alarms, I/O, power and extraction performance certification	
12.4	Cargo SAT: sensor coverage, alarms, I/O, power and extraction performance certification	
12.5	End-to-end IoT, REST API, database, dashboard, analytics and Android/iOS user-acceptance testing	
12.6	Consolidated commissioning and CONSTRUCTION HEALTH AND SAFETY AGENT Stage 5 close-out	
13.1	Operations and maintenance training	
13.2	Complete handover dossier	
13.3	Stage 6 close-out and Completion	
14.1	Final BMS/IMCS integration by an ACSA-appointed specialist	R 650,000.00
14.2	Independent extraction-performance testing	R 50,000.00
14.3	Specialist or statutory certification	R 50,000.00
14.4	Verified pre-existing hazardous-material remediation	R 50,000.00

Activity No.	Activity description	Price (Excl. VAT)
14.5	Major additional electrical capacity	R 200,000.00
15.	12 Months Maintenance fee	R
Subtotal (Price Excl. VAT)		R
Vat (15%)		R
**Grand total A (Price Incl. VAT)		R

*All mounts to entered exclusive of VAT.

**Grand Total A to be carried over to Form of Offer

C3: Scope of Work

1. Description of the works

1.1 Employer's objective

The Employer requires a complete design-and-build system for four live chiller plants that detects and reports refrigerant leaks, initiates two-stage alarms and extraction, provides secure local and remote monitoring through a native mobile application and cloud platform, and records refrigerant loss and carbon-dioxide-equivalent emissions without interrupting required chiller availability.

1.2 Locations and equipment

Chiller plant	Location / known equipment	Contractor's verification
Domtex chiller plant	ORTIA; exact room limits and equipment schedule to be verified.	Mandatory measured survey and asset verification.
KB2 chiller plant	ORTIA; exact room limits and equipment schedule to be verified.	Mandatory measured survey and asset verification.
Western Precinct chiller plant	Two AHI Carrier 23XRV 3031 chillers and three AHI Carrier 30RQP 0520 units.	Verify manufacturer, model, capacity, refrigerant, charge, compressors, circuits and available interfaces.
Cargo chiller plant	ORTIA; exact room limits and equipment schedule to be verified.	Mandatory measured survey and asset verification.

The equipment information supplied by the Employer is indicative and is not a warranty of completeness or accuracy. The Contractor verifies all information before design and procurement and allows for normal discrepancies reasonably discoverable during a competent tender and post-award survey.

1.3 Interpretation and completeness

- 1.3.1 The Scope states performance outcomes. The Contractor provides all design, manufacture, supply, delivery, storage, protection, installation, configuration, testing, commissioning, certification, documentation, making good, components, accessories and ancillary work required for a complete working system.
- 1.3.2 Where requirements conflict, legislation and statutory requirements take precedence, followed by the Contract Data, this Scope, accepted Contractor design and manufacturer requirements. The Contractor notifies the Project Manager and does not adopt a lower requirement without acceptance.
- 1.3.3 Acceptance of a design, programme, sample, method statement or test does not transfer the Contractor's design responsibility or relieve the Contractor of any obligation.

2. Contractor's design and professional services

2.1 Design responsibility

The Contractor completes the design from FIDPM Stage 1 confirmation through Stages 2 to 6. The coordinated design is fit for purpose, compliant, constructible within airport constraints and maintainable.

- 2.1.1 Confirm the brief, performance criteria, hazards, interfaces and acceptance criteria before commencing detailed design.
- 2.1.2 Undertake all measured surveys, airflow tests, electrical load and fault-level assessments, structural checks, communications surveys and hazardous-area assessments required for design.
- 2.1.3 Prepare coordinated drawings, calculations, specifications, schedules, cause-and-effect matrices, points lists, network architecture, bills of materials, design risk assessments and commissioning plans.
- 2.1.4 Resolve clashes and interfaces before fabrication or installation. Rework arising from uncoordinated design is at the Contractor's cost.
- 2.1.5 Use only suitably qualified, actively registered and competent designers. Each discipline signs its design and as-built deliverables.

2.2 FIDPM deliverables and discipline responsibilities

Stage	Mechanical	Electrical	Control and instrumentation	CONSTRUCTION HEALTH AND SAFETY AGENT / project controls
Stage 1: Initiation	Confirm extraction and ventilation objectives.	Confirm supply and essential-power strategy.	Confirm detection, alarm, reporting, native application, cloud-platform and integration objectives.	Project execution plan; initial design risk review.
Stage 2: Concept	Measured survey; airflow basis; concept layouts and discharge routes.	Load assessment; concept single-line diagrams; earthing and essential-power concept.	Sensor philosophy; redundancy; alarm levels; preliminary application requirements; cloud concept architecture; system architecture and preliminary points list.	Stage 2 programme, cost plan and risk report.

Stage	Mechanical	Electrical	Control and instrumentation	CONSTRUCTION HEALTH AND SAFETY AGENT / project controls
Stage 3: Design development	Calculations; equipment selections; duct sizes; supports and acoustic/weather protection.	Protection study; cable and panel design; schematics and schedules.	Cause-and-effect; control philosophy; native application user and functional requirements; cloud architecture, cybersecurity, network, BMS/IMCS and carbon-reporting design.	Construction Health and Safety Agent Stage 3 report; design risk assessment; constructability review.
Stage 4: Documentation / procurement	Issued-for-construction drawings and specifications.	Issued-for-construction drawings, panel schedules and cable schedules.	Issued-for-construction schematics, I/O list, points list, application and cloud software design description, API specification, cybersecurity design and FAT protocol.	Construction Health and Safety Agent Stage 4 report; construction H&S specification review; approved baseline programme.
Stage 5: Works	Installation inspections; pressure/airflow testing; punch lists.	Installation inspections; test certificates; protection and earthing tests.	Configuration, native application and cloud development, integration, loop tests, cybersecurity testing, FAT/SAT, user-acceptance testing and alarm simulation.	Construction Health and Safety Agent Stage 5 monthly reports; audit reports; progress, quality and risk reporting.
Stage 6: Close-out	As-builts; commissioning and performance certificates; O&M data.	As-builts, COCs, settings and test records.	Final source code and software backup; deployment package; cloud and application as-builts; cause-and-effect; points list; trends, alarms and reporting verification.	Construction Health and Safety Agent Stage 6 close-out report; handover and completion dossier.

2.3 Design submissions and review

- 2.3.1 The Contractor submits a design-submission register within 10 working days after the Starting Date.
- 2.3.2 Each submission is complete, internally checked, signed by the responsible professional and accompanied by a compliance matrix and interface list.
- 2.3.3 The Employer is allowed 10 working days for each complete submission review. Incomplete submissions are returned without review.
- 2.3.4 The Contractor includes reasonable review cycles and correction of non-compliance in its programme and Prices. Comments that require compliance with the stated Scope are not changes to the Scope.
- 2.3.5 The Contractor does not procure or construct affected permanent works before the relevant design is accepted, except at its own risk.

3. Technical requirements

3.1 Refrigerant detection system

- 3.1.1 Provide fixed, industrial-grade refrigerant detectors suitable for the confirmed refrigerants and environmental conditions. General refrigerant sensors are acceptable only where the manufacturer confirms suitability, selectivity, range and accuracy for every refrigerant present.
- 3.1.2 Provide redundant detection coverage. A single sensor failure, removal for calibration or communication failure does not leave a credible leak area unmonitored.
- 3.1.3 Provide refrigerant sensors on both sides of each chiller. Confirm final quantities and locations from the measured survey, refrigerant density, airflow, likely leak points, room geometry and manufacturer guidance; add sensors where required for complete coverage and provide guards where exposed to damage.
- 3.1.4 Detection is continuous. The system supervises sensor fault, calibration due, power failure, communication failure and controller fault.
- 3.1.5 Provide two alarm stages. Stage 1 gives local and remote warning. Stage 2 starts extraction, operates local audible and visual evacuation alarms and escalates the alarm to the monitoring centre. Audible and visual alarms comply with SANS 10147 and the accepted cause-and-effect design.
- 3.1.6 The Contractor determines and documents alarm setpoints against the applicable exposure limits and refrigerant safety standard. Setpoints require Employer acceptance and may not exceed the most stringent applicable statutory or safety limit.
- 3.1.7 Provide a controller/HMI at each plant, common status indication, alarm history, event timestamps, trend storage and secure role-based access.
- 3.1.8 Calibration certificates are traceable to recognised standards. The design supports a three-year sensor calibration interval only where warranted by the selected manufacturer; otherwise the shorter manufacturer interval applies and is stated in the maintenance plan.

3.2 Gas extraction and ventilation

- 3.2.1 Assess existing natural and mechanical ventilation before design. No existing extraction fans or ductwork may be assumed available for reuse.

- 3.2.2 Provide new duty-rated extraction fans, ductwork, grilles, louvres, dampers, make-up air openings or supply fans, weather cowls, guards, flexible connectors, attenuation and all supports.
- 3.2.3 Size the system to the more stringent applicable statutory or safety-standard requirement and demonstrate the design by calculation and witnessed performance testing.
- 3.2.4 Discharge contaminated air outdoors to a safe location that prevents re-entry into buildings, air intakes, occupied areas, ignition-risk areas or public routes.
- 3.2.5 Detection remains continuous. Extraction operates automatically at Stage 2 and may provide background ventilation where required by the accepted design. Manual start and safe local isolation are provided.
- 3.2.6 Fans, ducts, fixings and external equipment are weatherproof, corrosion resistant and suitable for airport environmental exposure. Noise at occupied boundaries complies with applicable limits.
- 3.2.7 The Contractor completes hazardous-area classification where relevant and provides appropriately certified equipment.
- 3.2.8 Extraction performance, airflow direction, discharge safety and alarm interlocks are independently tested and certified.

3.3 Electrical works

- 3.3.1 Survey the existing electrical installation, essential supplies, distribution boards, spare capacity, fault levels, cable routes, earthing and available isolation points.
- 3.3.2 Provide all power, control and communications cabling; containment; glands; labels; earthing; surge protection; isolators; protection; motor starters or variable-speed drives; PLC and sensor power supplies; I/O modules; control panels; and certificates of compliance.
- 3.3.3 Detection, alarm, controls, communications and reporting continue during loss of normal power by connection to an accepted essential supply and integral equipment backup where required. A separate standalone UPS is excluded.
- 3.3.4 Extraction fans are connected to the accepted essential-power source where available. Any major additional capacity identified after the required tender/post-award verification is managed only through the stated provisional sum and prior Project Manager instruction.
- 3.3.5 No connection, outage or energisation is undertaken without an accepted switching plan, permit and coordination with ACSA Electrical Maintenance.

3.4 Control, monitoring and reporting

- 3.4.1 Provide a dedicated local supervisory monitoring and control system for the four chiller plants, including PLCs, required I/O modules and suitable IoT gateway devices for secure cloud telemetry.
- 3.4.2 Use open, non-proprietary interfaces supporting BACnet/IP and Modbus TCP unless the Employer's accepted integration standard requires another published protocol.
- 3.4.3 Provide a central dashboard and secure data services for plant status, alarms, trends, event logs, equipment health, calibration, fan and power status, communications and the native mobile application.

- 3.4.4 Integrate remote monitoring with the Airport Integrated Monitoring Centre, native mobile application and cloud platform through the ACSA-approved network and cybersecurity architecture.
- 3.4.5 Provide the points list, network diagram, IP schedule, access matrix, backup and restore procedure, Employer-owned licences and configuration backups.
- 3.4.6 Calculate refrigerant loss and carbon-dioxide-equivalent emissions using the approved refrigerant inventory and global warming potential. Reports show total loss by plant and refrigerant for each month and year and support Airport Carbon Accreditation Level 2 reporting.
- 3.4.7 The Contractor coordinates the ACSA-appointed final integration specialist. All engineering, points, testing support, attendance, configuration changes and retesting required from the Contractor are included in the Prices.

3.5 Native mobile application and cloud platform

- 3.5.1 Design, develop, test, deploy and commission a native mobile application for the Employer-approved operating system. A responsive website or web-page wrapper is not accepted.
- 3.5.2 Use Kotlin Multiplatform for the shared Android and iOS codebase and Jetpack Compose/Compose Multiplatform Navigation for the application user interface and navigation.
- 3.5.3 Use Ktor for REST API calls, Koin for dependency injection and SQLDelight for the encrypted local database and offline data persistence.
- 3.5.4 Use Firebase Authentication for user authentication, Firebase Cloud Storage for managed file storage and Cloud Firestore for application data requiring Firebase document storage.
- 3.5.5 Implement repository and ViewModel architecture, nested navigation, Kotlin coroutines, centralised exception handling, structured logging and consistent loading, success and error states.
- 3.5.6 Provide secure, near-real-time monitoring of detector values, alarm stage, faults, calibration, extraction fans, power, communications and plant availability at all four plants.
- 3.5.7 Provide filtered push notifications for Stage 1 and Stage 2 alarms, safety-critical faults and loss of power or communications. Users may acknowledge and comment on alarms but may not override, isolate or reset safety controls unless accepted in the cause-and-effect design.
- 3.5.8 Provide role-based access, multi-factor authentication, least-privilege permissions, secure sessions and audit trails for logins, alarm acknowledgements, configuration changes and administration.
- 3.5.9 Supply and configure suitable IoT gateway devices and provide the cloud platform, including secure telemetry ingestion, event processing, notifications, user administration, health monitoring, logging, backup, restore and disaster recovery.

- 3.5.10 Configure a suitable continuously available database for time-series and operational data, with retention, indexing, backup, restoration, scalability and audit requirements defined in the accepted design.
- 3.5.11 Create secure, documented REST APIs for IoT ingestion, mobile application services, dashboards, analytics, reporting and approved third-party integration.
- 3.5.12 Configure dashboards and analytics for plant status, alarms, trends, detector health, extraction performance, refrigerant loss and carbon-dioxide-equivalent reporting.
- 3.5.13 Use a scalable, highly available architecture hosted in an environment accepted by ACSA ICT and Cybersecurity. Document data location and flows, integrations, dependencies, availability, recovery objectives and capacity assumptions.
- 3.5.14 Encrypt data in transit and at rest and apply secure development, vulnerability and dependency management, penetration testing, secrets and certificate management, security logging and remediation of critical and high-risk findings before acceptance.
- 3.5.15 Provide open, documented interfaces and unrestricted Employer access to its data, configuration and credentials. No proprietary dependency may prevent support, export or migration by the Employer or its maintainer.
- 3.5.16 Store current and historical measurements, alarms, acknowledgements, equipment status, calibration records, refrigerant-loss calculations and carbon-dioxide-equivalent reports, with export to PDF and open machine-readable formats.
- 3.5.17 Clearly identify stale data and the last successful synchronisation. Loss of the application, cloud platform or external network does not impair local detection, alarms, extraction, event storage or safe operation; buffered records synchronise when communications return.
- 3.5.18 Complete unit, integration, cybersecurity, performance, failover, backup-and-restore, user-acceptance and field testing, including verified alarms from every plant over approved networks.
- 3.5.19 Provide source code, build and deployment instructions, configuration, database schemas, API and architecture documentation, test evidence, software bill of materials, administrative credentials, signing arrangements and reproducible packages. Provide all licences, subscriptions, certificates, cloud hosting, application distribution and related support required for 24 months after Completion, registered in the Employer's name where applicable, with no additional recurring charge during this period.

3.6 Builders' work and supports

- 3.6.1 Provide all non-fire-rated penetrations, plinths, frames, brackets, access platforms, weatherproof enclosures, equipment supports and making good required for the works.
- 3.6.2 Verify structural capacity and obtain design certification for all supports and attachments.

- 3.6.3 The Contractor does not penetrate a fire-rated wall, floor or barrier. Fire stopping is excluded. Where a fire-rated barrier obstructs the proposed route, the Contractor redesigns the route unless the Project Manager instructs otherwise.

3.7 Equipment and workmanship

- 3.7.1 Equipment is new, unused, current production, supported in South Africa and suitable for at least 10 years of service and spares availability.
- 3.7.2 Use a consistent equipment family across plants where practicable to reduce spares and training requirements.
- 3.7.3 Provide permanent engraved labels, asset numbers, flow arrows, danger notices, cable and terminal identification and plant schematics.
- 3.7.4 Protect existing assets and finishes. Repair damage caused by the Contractor at no additional cost.

4. Applicable legislation and standards

The Contractor complies with the editions applicable at the Contract Date, including amendments, statutory notices and ACSA requirements. Where an edition is not stated, the current adopted edition at the Contract Date applies.

Reference	Application
Occupational Health and Safety Act, 1993 and Construction Regulations, 2014	Health, safety, design risk, construction work and appointments.
Pressure Equipment Regulations and SANS 347	Refrigeration pressure systems, conformity assessment and gas-practitioner requirements.
SANS 10147	Refrigerating systems including safety requirements.
ISO 5149 series	Safety and environmental requirements for refrigeration systems and heat pumps.
ASHRAE 15	Safety standard for refrigeration systems.
SANS 10142-1	Low-voltage electrical installations and certification.
SANS 10400-O	Lighting and ventilation requirements.
SANS/IEC 61439 and SANS/IEC 60947 series	Low-voltage assemblies, switchgear and control gear.
IEC 61131 series	Programmable controllers and software.
IEC 62443 series	Industrial control-system cybersecurity.
ACSA engineering, IMCS/BMS, IT, cybersecurity, environmental, permit and operational requirements	Airport-specific interfaces and work controls.
Protection of Personal Information Act, 2013	Personal information, user accounts, audit records, notifications and cloud-hosted data.
ISO/IEC 27001 and ISO/IEC 27002	Information-security management and security controls for the cloud platform and application.

Reference	Application
OWASP Application Security Verification Standard and Mobile Application Security Verification Standard	Secure design, development and verification of the platform APIs and native mobile application.

5. Execution constraints and business continuity

5.1 Live operational environment

- 5.1.1 The airport and chiller plants remain operational. Plan and execute the works with at least one chiller operating at each plant at all times.
- 5.1.2 Permitted intrusive shutdown work is between 22:00 and 04:00 only and requires a minimum 24-hour accepted notice, switching plan, method statement and rollback plan.
- 5.1.3 Allow for night work, restricted access, escorts, permits, security, inductions, tool controls, delivery bookings and reduced productivity associated with airport operations.
- 5.1.4 The Employer may reasonably sequence accepted shutdown windows within the stated working-hour regime for operational or safety reasons. The Contractor mitigates and sequences its work without additional cost where the Completion Date and stated access are not changed.
- 5.1.5 Hot work, work at height, lifting, confined-space work, electrical isolation and hazardous-substance work require task-specific permits and accepted method statements.

5.2 Access and logistics

- 5.2.1 The Employer provides simultaneous access to the four plants subject to airport operational, safety and security controls.
- 5.2.2 The Contractor obtains and pays for personnel, vehicle, tool, laptop, camera, hot-work, airside and work permits required for its planned methods.
- 5.2.3 The Contractor provides secure storage, protection, transport, lifting, off-loading, housekeeping, waste removal and reinstatement.
- 5.2.4 No storage location, parking, free power, water, data connection or welfare facility is assumed unless expressly identified by the Project Manager.

5.3 Temporary works, Site services and construction controls

- 5.3.1 All Contractor personnel obtain ACSA access permits, comply with Site and security rules, remain clearly identifiable and stay within authorised work and establishment areas.
- 5.3.2 Deliveries obstructing roads, walkways or public routes are limited to 00:00–04:00 and require ACSA operational acceptance. Contractor vehicles park within the accepted hoarded area or public parking at the Contractor's cost; towing and parking charges remain for the Contractor's account.
- 5.3.3 Materials, tools, cooking and other activities are prohibited in public areas. Airport public traffic routes and people-mover infrastructure may not be used for deliveries unless the Project Manager accepts the method in advance.

- 5.3.4 Provide and maintain ACSA-compliant hoarding daily. Reinstate finishes outside the Site and pay the Employer's reasonable cost of correcting defective hoarding or Contractor-caused damage.
- 5.3.5 Coordinate with Others and adjust the programme where required. Obtain prior acceptance from the responsible ACSA Electrical, ICT or Mechanical representative for affected electrical loading, cables, HVAC, fire detection, sprinklers and people-mover interfaces.
- 5.3.6 The Employer provides no construction equipment, offices, storage, welfare or health-and-safety facilities. Limited electrical power is available only where confirmed. Provide own water, communications, waste disposal, secure storage, offices and fenced yard, and remove all temporary facilities at Completion.
- 5.3.7 Use accepted existing cable trenches, ladders and trays where suitable. Open and reinstate trenches, replace damaged covers, secure cables and leave routes clean and orderly.
- 5.3.8 The Contractor has no title to demolition or excavation materials. Set out equipment positions for Project Manager acceptance before installation and report damage to existing services immediately. Repair damage with competent personnel; the Employer may recover its reasonable correction cost if the Contractor fails to act promptly.
- 5.3.9 Control noise, dust, water and waste. Noisy work is limited to 00:00–04:00 unless otherwise accepted. Contain dust and debris, provide skips, remove rubble promptly and maintain clean work and ablution areas.
- 5.3.10 Include in each progress report a register of Contractor's Equipment and materials on Site, recording registration or serial numbers, ownership or rental status and the rental provider where applicable.
- 5.3.11 Give the Project Manager reasonable notice before covering work. Submit and maintain the installation sequence, logistics plan and coordination requirements in the accepted programme.

6. Programme and planning

- 6.1 Submit the first detailed programme within two weeks after the Contract Date and revise it at the intervals stated in the Contract Data.
- 6.2 The programme covers design submissions, Employer review periods, surveys, approvals, permits, procurement, manufacturing, FAT, deliveries, phased installation, shutdowns, integration, SAT, training, handover, float, risk allowances and Completion within 18 months.
- 6.3 Show separate activities and logic for Domtex, KB2, Western Precinct and Cargo chiller plants.
- 6.4 Include procurement schedules and evidence of orders for long-lead equipment. Supplier or shipping delay is the Contractor's risk unless caused by an Employer compensation event.
- 6.5 Failure to submit or maintain an accepted programme does not relieve the Contractor from Completion or entitle it to additional time or payment.

Control milestone	Latest requirement
Confirmed brief, survey plan and design-submission register	Within 2 weeks after the Contract Date
Stage 1 confirmation and coordinated Stage 2 concept package	Within 4 weeks after the Contract Date
Stage 3 coordinated design	Within 10 weeks after the Contract Date
Stage 4 issued-for-construction design	Within 16 weeks after the Contract Date

Control milestone	Latest requirement
Application/cloud development environment accepted	Within 24 weeks after the Contract Date
Long-lead equipment available for FAT or delivery	Within 36 weeks after the Contract Date
All plant installations and digital platform build complete	Within 60 weeks after the Contract Date
Sectional Completion of Domtex, KB2, Western Precinct and Cargo plant rooms	Within 70 weeks after the Contract Date
Training completed	Within 76 weeks after the Contract Date
Handover, Stage 6 close-out and Completion	Within 78 weeks after the Contract Date

7. Health, safety, environment and quality

- 7.1 Comply with the Employer's health and safety specification and submit all statutory appointments and plans before access.
- 7.2 The Construction Health and Safety Agent provides design-risk reviews and SACPCMP-aligned reports for FIDPM Stages 3 to 6.
- 7.3 Prepare a project quality plan, inspection and test plans, hold/witness-point schedule, material submittal register, nonconformance procedure and turnover dossier index.
- 7.4 Manage refrigerants, calibration gases, chemicals and waste in accordance with safety data sheets and environmental requirements. No intentional refrigerant release is permitted except an accepted controlled test using the minimum safe quantity and approved method.
- 7.5 Immediately report leaks, spills, alarms, service strikes, injuries, security breaches and damage. Correct conditions caused by the Contractor at its cost.

8. Testing, commissioning and acceptance

8.1 Factory acceptance testing

- 8.1.1 Conduct FAT for control panels, controllers, HMI, software, alarm logic, communications and reporting before delivery.
- 8.1.2 Submit the FAT procedure at least 15 working days before the test. Provide five working days' notice of the confirmed FAT date.
- 8.1.3 Correct FAT failures and repeat affected tests at no additional cost.

8.2 Site acceptance and performance testing

- 8.2.1 ACSA witnesses SAT. Submit the SAT and commissioning procedure at least 15 working days before testing.
- 8.2.2 Test every sensor, alarm device, controller, panel, fan, damper, interlock, communication point, trend, report, power-failure response and fault condition.
- 8.2.3 Perform safe simulated refrigerant-release tests for each detection zone using an accepted method and competent SAQCC Gas Category B6 practitioner where refrigerant handling is involved.

- 8.2.4 Measure and record airflow, pressure, air changes, noise, make-up air and discharge conditions. An independent competent party certifies extraction performance.
- 8.2.5 Demonstrate Stage 1 and Stage 2 cause-and-effect, remote alarm display, loss-of-power response, loss-of-communication alarm, sensor-fault alarm and system restoration.
- 8.2.6 Submit signed test sheets, calibration certificates, certificates of compliance, independent certificates and a consolidated commissioning report.
- 8.2.7 Provide all materials, facilities, instruments and samples required for tests and inspections.
- 8.2.8 Commission each plant and Section in phases before Completion. The Employer uses only systems that are fully tested, commissioned and safe; early use does not constitute Completion or acceptance of a Defect.
- 8.2.9 Completion is not achieved until all safety-critical defects, failed tests, outstanding statutory certificates and Category A handover documents are closed.

9. Training, handover, warranty and maintenance

9.1 Training

Provide three days of practical and classroom training for approximately 20 Employer personnel, including hands-on training during installation and commissioning. Cover operation, alarms, controls, isolation, inspection, mobile and cloud administration, reporting, calibration, fault finding, cybersecurity, access management, backup, restore and emergency actions. Provide training material and attendance records.

9.2 Handover documents

- 9.2.1 Accepted designs, signed calculations, specifications and design certificates.
- 9.2.2 As-built drawings in editable native format and PDF, including layouts, schematics, single-line diagrams, cable schedules, duct schedules and support details.
- 9.2.3 Final equipment schedule, asset register, serial numbers, warranties, licences and supplier contacts.
- 9.2.4 FAT, SAT, commissioning, extraction-performance, calibration and electrical compliance certificates.
- 9.2.5 Final cause-and-effect matrix, I/O list, BMS/IMCS points list, network architecture, IP schedule and software/configuration backups.
- 9.2.6 Operating and maintenance manuals, maintenance plan, troubleshooting guide, emergency response procedure and spare-parts schedule.
- 9.2.7 Refrigerant inventory and approved monthly/annual carbon-reporting templates.
- 9.2.8 Training records, CONSTRUCTION HEALTH AND SAFETY AGENT Stage 6 report, H&S file, quality dossier, defects list and close-out report.

9.3 Spares, tools, warranty and maintenance

- 9.3.1 At handover, provide the commissioning/calibration interface tools, manufacturer-specific test accessories and initial spare sensors equal to 10% of each installed sensor type, with a minimum of one of each type.

- 9.3.2 Provide initial calibration/test gas required for commissioning, However Routine consumables, replacement sensors and calibration gases used after handover are excluded unless required to correct a Defect.
- 9.3.3 The warranty and defects correction period is 52 weeks after Completion.
- 9.3.4 Provide 12 months of maintenance after Completion at no additional cost, including planned inspections, functional tests, software support, reporting checks and correction of Defects. Consumables excluded above are supplied by the Employer.
- 9.3.5 Respond to an emergency fault within one week at the latest. Safety-critical system failure requires immediate remote response and attendance as soon as airport access permits.
- 9.3.6 Pre-arrange access, isolations and outages for correction of Defects with the Project Manager and affected ACSA departments.

9.4 As-built drawings, operating manuals and maintenance schedules

- 9.4.1 Three copies of the complete instruction manuals, including all drawings required for operation and maintenance of the equipment, are handed over to the Project Manager.
- 9.4.2 Three electronic copies on discs/CDs are handed over to the Project Manager and contain the following:

A soft copy and a hard-copy-ready PDF of the complete selection/design, installation, commissioning and instruction manuals and drawings.

All other related project and equipment documentation.

- 9.4.3 All as-built drawings and CAD data produced for the project comply with these CAD Standards. The Contractor maintains a complete set of drawings updated with as-built information throughout the project and submits them in the required format.

9.4.4 CAD Standards

The title block clearly states the project name and number, project stage (Approval, Construction or As-built) and the date of each drawing update. The Employer provides the ACSA logo.

The Employer provides the ACSA logo, title block, drawing register and project handover acceptance-criteria sheet to the appointed service provider when requested.

The title block clearly identifies the consultants and Contractors working on the project, their contact details, physical addresses and responsibilities to support future tracking and reference.

Line scales and line types are clear.

Drawing components are placed on separate, switchable layers, are clearly indicated on the plans and include attribute data that identifies each component.

External references (XREFs), where used, are attached or bound to the drawing.

Text types and dimensions comply with the applicable ISO standards and are placed on separate layers.

At handover, the Contractor provides three discs/CDs containing the complete as-built/project information to the ACSA Project Manager. The Project Manager issues one copy to the Asset Information Management Office/GIS.

As-built/project information may also be handed over through Microsoft Teams where accepted by the Project Manager.

Depending on the Scope, the as-built drawings and project data include the applicable water, sewer, electrical, electronic, sound and public-address, HVAC, CCTV and fire-detection services drawings; architectural drawings; close-out reports; and certificates of compliance. Close-out reports, maintenance documentation and certificates of compliance are provided in PDF format.

- 9.4.5 The Contractor submits all as-built drawings to the ACSA Project Manager and the CAD Office/Asset Information Management Officer within 14 working days after Completion. The as-built drawings are submitted in AutoCAD 2004–2016 compatible format and PDF. Non-compliance may jeopardise acceptance of the handover and consideration of future applications or appointments.

10. Contractor's resources

The Contractor provides sufficient management, design, supervision, installation, testing and administrative resources to meet the programme. No person may fulfil more than one of the following key roles:

Role Description	Minimum Qualification	Minimum Experience
Resident Engineer	SAQA accredited BTech Mechanical Engineering, Electrical Engineering or Civil Engineering or higher (Attach qualifications) AND registered with ECSA as Professional Engineering Technologist (Mechanical / Electrical / Civil) or higher (Attach certificate) AND registered with SACPCMP as a Construction Manager or Construction Project Manager	3 to 5 years' experience in management of construction projects in a live environment (post obtaining qualifications)
Electronic Engineer	SAQA accredited BTech Electronics Engineering or Mechatronics Engineering or higher (Attach qualifications) AND registered with ECSA as Professional Engineering Technologist or higher	3 or more years' experience in engineering, industrial automation, PLC systems, SCADA systems, BMS integration, IMCS integration, control and instrumentation systems, data analytics or cloud monitoring systems (post obtaining professional registration)
Electrical Engineer	SAQA accredited BTech Electrical Engineering or higher (Attach qualifications) AND registered with ECSA as Professional Engineering Technologist or higher	3 or more years' experience in engineering, MCC systems, UPS systems, power reticulation and industrial electrical infrastructure projects (post obtaining professional registration)

Role Description	Minimum Qualification	Minimum Experience
Mechanical Engineer	SAQA accredited BTech Mechanical Engineering or higher (Attach qualifications) AND registered with ECSA as Professional Engineering Technologist or higher	3 or more years' experience in engineering, fire water systems, pump systems, diesel engines, piping systems and mechanical infrastructure projects (post obtaining professional registration)
Civil Engineer	SAQA accredited BTech Civil Engineering or higher (Attach qualifications) AND registered with ECSA as Professional Engineering Technologist or higher	3 or more years' experience in engineering, reinforced concrete structures, equipment foundations, industrial civil works and structural rehabilitation projects (post obtaining professional registration)
Fire Systems Practitioner	Registered with ECSA as a Water-Based Fire Systems Practitioner or Rational Fire Design Professional (Attach certificate) OR registered with ECSA as a Professional Mechanical Engineer	3 or more years' experience in commissioning, installation, maintenance or design of water-based firefighting systems (post obtaining professional registration)
Occupational Health and Safety Agent	SAQA accredited Diploma in the Built Environment or Safety Management (Attach qualifications) AND registered with SACPCMP as a Safety Agent	3 to 5 years' experience in construction projects and occupational health and safety management (post obtaining qualifications)

11. Employer-provided items and interfaces

11.1 Employer provides

- 11.1.1 Access to the four chiller plants in accordance with the contract and airport controls.
- 11.1.2 Available existing drawings, equipment records and standards for information only.
- 11.1.3 The Employer's review comments, operational coordination and witnessing personnel.
- 11.1.4 Approved network/interface requirements and access to the monitoring centre for authorised integration testing.
- 11.1.5 Existing normal and essential electrical tie-in points where confirmed by the Contractor's survey and accepted design.

11.2 Provisional sums and named interfaces

Item	Scope boundary	Contractor's included obligation
Final BMS/IMCS integration by an ACSA-appointed specialist	Provisional sum: R650,000.00 excluding VAT. The specialist's direct charges are paid only when instructed.	Provide all design data, points, protocols, attendance, configuration support, testing and retesting.
Independent extraction testing	Provisional sum: R50,000.00 excluding VAT for the instructed independent certifier's fee.	Prepare system, provide access/instruments/support, rectify failures and repeat tests caused by Contractor non-compliance.
Specialist/statutory certification	Provisional sum: R50,000.00 excluding VAT for identified third-party or statutory fees instructed by the Project Manager.	All normal design, installation and Contractor certification costs are included in the Prices.
Hazardous-material remediation	Provisional sum: R50,000.00 excluding VAT for verified pre-existing hazardous-material remediation instructed by the Project Manager.	Survey, stop work safely, protect the area and cooperate with the instructed specialist.
Major additional electrical capacity	Provisional sum: R200,000.00 excluding VAT for instructed capacity beyond the confirmed tie-in and stated Contractor works.	Complete load/fault studies and submit evidence before procurement; no expenditure without instruction.

A provisional sum is not an entitlement. Work against a provisional sum starts only after a Project Manager instruction. Contractor overheads, coordination, attendance and obligations expressly stated above are included in the Prices unless the Activity Schedule states otherwise.

12. Exclusions and boundaries

- 12.1 Replacement, overhaul or capacity upgrade of the existing chillers, compressors or refrigerant circuits, except minor interface work expressly required for detection and testing.
- 12.2 Carbon dioxide detectors and electrical-energy metering.
- 12.3 Standalone UPS equipment. Integral controller/sensor backup and connection to accepted essential supplies remain included.
- 12.4 Temporary cooling, provided the Contractor maintains at least one operational chiller per plant.
- 12.5 Fire stopping and penetrations through fire-rated barriers.
- 12.6 Removal of verified pre-existing asbestos or other hazardous material, except through an instructed provisional sum.

- 12.7 Major new substations, generators or electrical-capacity upgrades, except through an instructed provisional sum.

An exclusion does not exclude minor ancillary work or coordination required to complete the included works. If the Contractor considers an excluded item necessary, it notifies the Project Manager before proceeding.

13. Risk allocation and compensation-event controls

13.1 Risks included in the Contractor's Prices

The following are foreseeable design-and-build obligations and do not, by themselves, change the Scope or constitute grounds for additional payment or time:

- 13.1.1 Surveys and correction of errors, omissions, quantities, coordination or tender assumptions in the Contractor's design, Activity Schedule or programme, including normal record discrepancies discoverable by competent inquiry.
- 13.1.2 Design development required to meet the performance outcome, legislation, standards, manufacturer requirements and accepted interfaces.
- 13.1.3 Airport permits, inductions, escorts, security, deliveries, night or phased work, continued operations, one-chiller availability, temporary works, access equipment and reinstatement.
- 13.1.4 Procurement lead times, supplier and subcontractor performance, shipping, customs, exchange-rate movement, inflation and equipment availability, except where the contract states otherwise.
- 13.1.5 Coordination with utilities, ACSA departments, integration specialists and independent testers; correction and repeat review or testing of non-compliant work; and reasonable sequencing within the stated access constraints.

13.2 Employer-retained risks

Employer-retained risks are limited to events that qualify under the NEC3 ECC and the completed Contract Data, including an instructed change to the Scope, failure to provide stated access, an Employer prevention event, or a qualifying physical condition that satisfies the contract test. The Contractor remains responsible for timely early warning, mitigation, records and notice.

13.3 Change control

- 13.3.1 The Parties use the early-warning, programme and compensation-event procedures in the NEC3 ECC as the exclusive process for changes to the Prices, Completion Date or a Key Date.
- 13.3.2 Only a written instruction or notification issued by the Project Manager under the contract changes the Works Information or constitutes a compensation event. Minutes, site discussions, design-review comments and emails from other persons do not instruct a change.
- 13.3.3 The Contractor gives an early warning as soon as it becomes aware of a matter that could increase cost, delay Completion or impair performance, and updates the early-warning register, accepted programme and risk-reduction actions at each risk meeting.
- 13.3.4 Each compensation-event notification identifies the clause relied upon, the event date, cause, affected Works Information, contemporaneous records and forecast effect. Each quotation separately shows Defined

Cost, time risk allowances, programme effect and assumptions. Unsupported global claims are not accepted.

- 13.3.5 No compensation event arises from a Contractor design error, quantity or pricing omission, procurement or Subcontractor failure, failure to obtain Contractor-controlled permits, or a constraint expressly stated in the Contract Data, Works Information or Site Information.

14. Activity Schedule and payment

- 14.1 The Contractor submits a priced Activity Schedule aligned to the accepted programme, plants, FIDPM stages and measurable completed deliverables.
- 14.2 Activities are sufficiently detailed to identify design, procurement, each plant installation, integration, testing, training, handover and close-out. Front-loading and payment for unincorporated materials without the required title and protection are not permitted.
- 14.3 An activity is complete only when its deliverable and applicable Scope requirements are met, required documents are submitted and associated nonconformances are closed. Review, inspection or partial use does not constitute completion.
- 14.4 The Prices include all taxes, duties, transport, escalation, supervision, design, overheads, profit, risk allowances and ancillary work, excluding VAT and instructed provisional-sum expenditure.
- 14.5 The digital-platform provisional sum is R4,000,000.00 excluding VAT and is allocated across Activities 11.1 to 11.7. Each allocation is used only following a Project Manager instruction and is not an entitlement to payment. The allocation includes the 24-month licence and service provision stated in this Scope.

14.6 Invoicing and payment

- 14.6.1 Within seven days of receiving a payment certificate from the Project Manager in terms of core clause 51.1, the Contractor provides the Employer with a tax invoice showing the amount due for payment equal to that stated in the Project Manager's payment certificate.
- 14.6.2 The Contractor addresses the tax invoice to Airports Company South Africa SOC Ltd.
- 14.6.3 Each tax invoice includes the following information:

Name and address of the Contractor and the Project Manager.

The contract number and title.

The Contractor's VAT registration number.

The Employer's VAT registration number: 493 013 8393.

Description of work done by cross-reference to the Project Manager's payment certificate.

The total amount invoiced excluding VAT, the VAT amount and the total invoiced amount including VAT.

15. Completion criteria

Completion is achieved when the system at all four plants is safe, operational and compliant and the following requirements are met:

- 15.1 Accepted designs and permanent works are complete.

- 15.2 All required tests have passed and certificates are submitted.
- 15.3 Defects affecting safety, operation, monitoring, maintenance or reporting are corrected.
- 15.4 Training and handover are complete, including documents, software backups, licences, spares and tools.
- 15.5 Sites are clean and reinstated, with temporary works and waste removed.

16. Scope acceptance schedule

Deliverable / condition	Acceptance evidence
Design	Signed coordinated design, calculations, compliance matrix and accepted design-risk review.
Installation	Inspection records, concealed-work approvals, electrical certificates and closed nonconformances.
Detection and alarms	Verified sensors on both sides of each chiller, 100% point-to-point tests, calibration records, fault tests, SANS 10147-compliant audible/visual alarms and witnessed cause-and-effect.
Extraction	Measured duty, air changes, discharge verification and independent certificate.
Monitoring, native application, cloud platform and carbon reporting	Verified IoT telemetry, REST APIs, continuous database, dashboards, analytics, Android/iOS application, Firebase services, SQLDelight offline data, notifications, user roles, audit trails, cybersecurity, failover, backup/restore, data exports, carbon reports and accepted source/deployment package.
Business continuity	No unapproved shutdown and evidence that at least one chiller remained operational.
Handover	Complete indexed dossier, training, spares, tools, licences, warranties and accepted close-out reports.

ANNEXES to C3 (Works information)

Title	Annex number	Applicable or N/A
Detail Technical Specification	Annexure A	Applicable
Schedule of Equipment	Annexure B	Not Applicable
Environmental Terms and Conditions	Annexure C	Applicable
Occupational Health and Safety Agreement	Annexure D	Applicable

ANNEXURE A

Detail Technical Specification

Refrigeration, detection, ventilation and controls		
Standard / Regulation	Standard Number	Description
Refrigeration safety and leak detection	ASHRAE 15 and ASHRAE 34	Safety, refrigerant classification, machinery-room and concentration requirements
Refrigerating systems	ISO 5149 Parts 1–4	Safety and environmental requirements across design, installation, operation and recovery
Refrigerating systems	SANS 10147	South African refrigeration safety requirements
Ventilation	SANS 10400-O	Ventilation requirements where applicable
Pressure equipment	Pressure Equipment Regulations and SANS 347	Categorisation and conformity assessment where applicable
Electrical installations	SANS 10142-1	Low-voltage installation, verification and certification
Industrial control cybersecurity	IEC 62443 Series and ACSA requirements	Secure control-system architecture and integration
Health and safety	OHS Act and Construction Regulations, 2014	Health, safety and construction work duties
Airport requirements	ACSA standards and specifications	Engineering, operations, permits, IT, cybersecurity and IMC integration

Remote Monitoring, Internet of Things (IoT), Cloud Platforms and Analytics		
Standard / Regulation	Standard Number	Description
Industrial Communication Networks and Systems Security	IEC 62443 Series	Cybersecurity requirements for industrial automation, SCADA, PLC and connected systems
Functional Safety Systems	IEC 61508	Functional safety requirements for electrical, electronic and programmable systems
Programmable Controllers	IEC 61131 Series	Requirements for programmable logic controllers and automation systems
Industrial Networks – OPC Unified Architecture	IEC 62541 Series	Standards for secure industrial communication and interoperability between systems
MQTT Messaging Protocol	ISO/IEC 20922	Lightweight publish/subscribe messaging protocol for IoT devices and cloud communication
Information Security Management Systems	ISO/IEC 27001	Requirements for information security management systems
Code of Practice for Information Security Controls	ISO/IEC 27002	Best practices for information security controls and cloud systems
Cloud Computing Overview and Vocabulary	ISO/IEC 17788	Defines concepts and terminology for cloud computing systems
Cloud Computing Reference Architecture	ISO/IEC 17789	Reference architecture for cloud computing platforms and services
Internet of Things Reference Architecture	ISO/IEC 30141	Reference architecture for Internet of Things systems
Internet of Things Interoperability	ISO/IEC 21823 Series	Requirements for interoperability between IoT systems and devices
Systems and Software Engineering	ISO/IEC/IEEE 12207	Software lifecycle processes for software development and maintenance
Software Quality Requirements and Evaluation	ISO/IEC 25010	Software quality model for applications, cloud systems and analytics platforms
Information Technology Service Management	ISO/IEC 20000	Requirements for IT service management systems

Data Protection and Privacy	Act 4 of 2013 (POPIA)	Governs data protection, storage and privacy for cloud-based systems
Cybersecurity Framework	NIST Cybersecurity Framework	Framework for cybersecurity risk management and protection of connected systems
Industrial Automation and Control Systems Security	NIST SP 800-82	Security guidance for industrial control systems, SCADA and PLC systems
Web Accessibility Guidelines	WCAG 2.1	Accessibility requirements for web and mobile applications
Not applicable	Not applicable	Not applicable
Cloud Service Availability and Resilience	ISO 22301	Business continuity and resilience requirements for cloud and remote monitoring platforms
Telecommunications and Network Infrastructure	IEEE 802 Series	Network communication standards for Ethernet, Wi-Fi and industrial networking
Time Synchronisation for Networked Systems	IEEE 1588	Precision time protocol requirements for synchronisation of industrial monitoring systems
Industrial Ethernet Communication	EtherNet/IP	Industrial Ethernet communication protocol requirements for PLC and SCADA integration
Modbus Communication Protocol	Modbus TCP/IP	Industrial communication protocol for instrumentation and monitoring devices
Airports Company South Africa IMCS Standards	ACSA IMCS Standards and Specifications	Requirements for integration into the ACSA Integrated Monitoring and Control System
Cloud Data Storage and Security Requirements	ISO/IEC 27017	Security controls for cloud services and cloud data protection
Cloud Privacy Protection	ISO/IEC 27018	Protection of personally identifiable information in public cloud services

ANNEXURE B

SCHEDULE OF EQUIPMENT

N/A

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 ACSA. ACSA 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 Environmental Policy shall be communicated, comprehended and implemented by all ACSA 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 ACSA immediately. Contractors shall supply their own suitable clean-up materials where required. - Washing, maintenance and refueling of equipment shall only be allowed in designated service areas on ACSA 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 minimise noise generated on site as a result of work operations. - The Contractor shall comply with the applicable regulations with regard to 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 at all times in their work area.

	6. Contractors must keep on file: 1. The name of the contracting waste company 2. Waste disposal site used 3. Monthly reports on quantities – separated into general, hazardous and recycled 4. Maintained file of all Waste Manifest Documents and Certificates of Safe Disposal 5. Copy of waste permit for disposal site This information must be available during audits and inspections.
Handling & Storage of Hazardous Chemical Substances (HCS)	1. All HCS shall be clearly labeled, stored and handled in accordance to Materials Safety Data Sheets. 2. Materials Safety Data Sheets shall be stored with all HCS. 3. All spillages of HCS must be cleaned-up immediately and disposed of as hazardous waste. (HCS spillages must be reported to ACSA immediately). 4. All contractors shall be adequately informed with regards to the handling and storage of hazardous substances. 5. Contractors shall comply with all relevant national, regional and local legislation with regard to the transport, storage, use and disposal of hazardous substances.
Water and Energy Consumption	ACSA 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.

Penalties

Penalties shall be imposed by ACSA 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 penalty. The Contractor shall take the necessary steps (e.g. training/remediation) to prevent a recurrence of the infringement and shall advise ACSA accordingly.

The Contractor is also advised that the imposition of penalties does not replace any legal proceedings, the Council, authorities, land owners and/or members of the public may institute against the Contractor.

Penalties shall be between R200 and R20 000, depending upon the severity of the infringement. The decision on how much to impose will be made by ACSA's Airport Environmental Management Representative in consultation with the Airport Manager or his/her designate, and will be final. In addition to the penalty, the Contractor shall be required to make good any damage caused as a result of the infringement at his/her own expense.

I, _____ (name & surname) of _____

_____ (company) agree to the above conditions and acknowledge ACSA's right to impose penalties 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).

ANNEXURE D

OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

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

OBJECTIVES

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

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

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

The parties to this Agreement are:

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

Hereinafter referred to as “Client”

Name of organisation:
Physical Address:

Hereinafter referred to as “the Mandatary/ Principal Contractor”

MANDATORY'S MAIN SCOPE OF WORK

GENERAL INFORMATION FORMING PART OF THIS AGREEMENT

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

THE UNDERTAKING

The Mandatory undertakes to comply with:

INSURANCE

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

**COMPLIANCE WITH THE OCCUPATIONAL HEALTH & SAFETY
ACT 85 OF 1993**

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

1. All work performed by the Mandatary on the Client's premises must be performed under the close supervision of the Mandatary's employees who are to be trained to understand the hazards associated with any work that the Mandatary performs on the Client's premises.
2. The Mandatary shall be assigned the responsibility in terms of Section 16(1) of the OHSAct 85 of 1993, if the Mandatary assigns any duty in terms of Section 16(2), a copy of such written assignment shall immediately be forwarded to the Client.
3. The Mandatary shall ensure that he/she familiarise himself/herself with the requirements of the OHS Act 85 of 1993 and that s/he and his/her employees and any of his subcontractors comply with the requirements.
4. The Mandatary shall ensure that a baseline risk assessment is performed by a competent person before commencement of any work in the Client's premises. A baseline risk assessment document will include identification of hazards and risk, analysis and evaluation of the risks and hazards identified, a documented plan and safe work procedures to mitigate, reduce or control the risks identified, and a monitoring and review plan of the risks and hazards.

5. The Mandatary shall appoint competent persons who shall be trained on any Occupational Health & Safety aspect pertaining to them or to the work that is to be performed.
6. The Mandatary shall ensure that discipline regarding Occupational Health & Safety shall be strictly enforced.
7. Any personal protective equipment required shall be issued by the Mandatary to his/her employees and shall be worn at all times.
8. Written safe working practices/procedures and precautionary measures shall be made available and enforced and all employees shall be made conversant with the contents of these practises.
9. No unsafe equipment/machinery and/or articles shall be used by the Mandatary or contractor on the Client's premises.
10. All incidents/accidents referred to in OHS Act shall be reported by the Mandatary to the Provincial Director: Department of Labour as well as to the Client.
11. No use shall be made by the Mandatary and/or their employees and or their subcontractors of any of the Client's machinery/article/substance/plant/personal protective equipment without prior written approval.
12. The Mandatary shall ensure that work for which the issuing of permit is required shall not be performed prior to the obtaining of a duly completed approved permit.
13. The Mandatary shall ensure that no alcohol or any other intoxicating substance shall be allowed on the Client's premises. Anyone suspected to be under the influence of alcohol or any other intoxicating substance shall not be allowed on the premises. Anyone found on the premises suspected to be under the influence of alcohol or any other intoxicating substance shall be escorted off the said premises immediately.
14. Full participation by the Mandatary shall be given to the employees of the Client if and when they inquire into Occupational Health & Safety.

FURTHER UNDERTAKING

1. Only a duly authorised representative appointed in terms of Section 16.2 of the OHS Act is eligible to sign this agreement on behalf of the Mandatary. The signing power of this representative must be designated in writing by the Chief Executive Officer of the Mandatary. A copy of this letter must be made available to the Client.
2. The Mandatary confirms that he has been informed that he must report to the Client's management, in writing anything he/she deems to be unhealthy and /or unsafe. He has versed his employees in this regard.

3. The Mandatary warrants that he/she shall not endanger the health & safety of the Client's employees and other persons in any way whilst performing work on the Client's premises.
4. The Mandatary understands that no work may commence on the Client's premises until this procedure is duly completed, signed and received by the Client.
5. Non-compliance with any of the above clauses may lead to an immediate cancellation of the contract.

ACCEPTANCE BY MANDATARY

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

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

Mandatary – WCA/ Federated Employers Mutual No.....

Expiry date

SIGNATURE ON BEHALF OF MANDATARY

(Warrant his authority to sign)

DATE

SIGNATURE ON BEHALF OF THE CLIENT

AIRPORT COMPANY SOUTH AFRICA

DATE

C4: Site Information

C4.1: Information about the *site* at time of tender which may affect the work in this contract

The Works are located at OR Tambo International Airport, which is a restricted and access controlled area. It is crucial for the Contractor to note that OR Tambo International Airport is a National Key Point and governed as such. The contractor will have to adhere to all airport requirements regarding access control, security, fire, health and safety.

4.1.1 Access limitations

1. General

1. The works is within the security area of the Airports Company South Africa (ACSA) and access to the site is governed by the terms and conditions laid down by ACSA Security Officials from time to time. The *Contractor* shall satisfy himself as to these terms and conditions.
2. The *Contractor* shall liaise with the ACSA Security Staff in order to obtain access permits for his staff and vehicle, which will be working within the airport. Personnel and vehicles entering and leaving the site are subject to routine searches.
3. The *Contractor* will have to obtain a “gate permit” from the *Project/Service Manager*, before materials and equipment can be removed from the site. The “gate permit” gives an itemized list of materials and equipment to be removed from site.
4. The *Contractor* shall make his own assessment of, and shall allow in his rates for those access problems which may be encountered and no extra payment or claim of any kind will be allowed on account of difficulties of access to the Works.

1. Permits

1. The Contractor shall ensure that he/she is, at all times, familiar with ACSA’s safety and security requirements relating to permits in order prevent work delay as a result thereof.
2. This shall include the permit application process.
3. The Contractor shall have no claim against ACSA in the event that a permit request is refused.
4. The following table is not all inclusive, but is provided for illustration purposes:

Permit	Required by/for	Department
AVOP – Airside Vehicle Operator	All drivers of vehicles on airside	ACSA Safety

permit		
Airside Vehicle Permit	All vehicles that enter airside	ACSA Safety
Basement Parking permit	All vehicles allowed to enter the delivery basement	ACSA Parking
Personal permit	All persons employed on the airport	ACSA Security
Cell phone permit	All persons taking cell phones to airside	ACSA Security
Tools permit	All persons taking cell phones to airside	ACSA Security
Lap top permit	All persons taking lap top computers to airside	ACSA Security
Camera permit	All persons taking cameras or camera equipment to airside	ACSA Security
Hot Works Permit	All welding and/metal cutting work	ACSA Safety
Airside Projects/Works Permit	For All projects on the Airside	ACSA Airport Operations/Safety
Low /Medium Voltage Permit to Work	For all work on Substation, Distribution Boards and Cables	ACSA Electrical Maintenance

1. Proof of having attended the airside induction training course is required for all personal permit applications.
2. Persons applying for an AVOP must provide proof of having attended an AVOP course.
3. Fees are levied for these courses. Fees are further levied for all permit renewals and refresher courses - where applicable.
4. No work shall be done without a written permission in the form of a permit/works order, displayed on the wall or in a visible area in the work area.

c. Cell phones and two-way radios

1. Use of cell phones on airside is **not** permitted unless the user is in possession of an appropriate Airport permit for the device.
2. Cell phone permit issuing authority lies with the ACSA Security department.
3. 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.
4. Approved radios may be arranged via said department - payment will be for the account of the Contractor.

4.1.2 Ground conditions in areas affected by work in this contract

There are no excavations activities in this project.

4.1.3 Hidden and other services within the *site*

There might be water and sewer pipes crossing under or above the substation. Also there are a lot of other cables going through the substation 5 to other substations and these must be treated as live cables. There are also communication cables connecting the substation with the other substations.

4.1.4 Safety Management

1. ☐ The *Contractor* must be registered with the Occupational Health and Safety Commission.
2. The *Contractor* submits a Health and Safety Plan to the *Employer* for work to be performed.
3. The Health and Safety plan must include a Risk Assessment of the activities with mitigating methods that will be used to prevent accidents.
4. The Health and Safety plan must be implemented and monitored to ensure its integrity.
5. Details of *Contractor's* appointed Health and Safety Committee members must be included and appointed in writing.
6. The *Contractor* in writing must appoint all competent person/s.

Site Location

Equipment ID	Location
Domtex chiller plant	Restricted operational area
KB2 chiller plant	Restricted operational area
Western Precinct chiller plant	Restricted operational area
Cargo chiller plant	Restricted operational area