T1 : TENDERING PROCEDURES

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T1.1 : BACKGROUND TO THE NATIONAL RESEARCH FOUNDATION AND THE SOUTH AFRICAN INSTITUTE FOR AQUATIC BIODIVERSITY

The National Research Foundation (NRF) is a juristic person established in terms of section 2 of the National Research Foundation Act, Act 23 of 1998 and a schedule 3A public entity in terms of the Public Finance Management Act. The NRF is the government’s national agency responsible for promoting and supporting research and human capital development through funding, the provision of National Research Facilities and science outreach platforms and programs to the broader community in all fields of science and technology, including natural science, engineering, social science and humanities.

The South African Institute for Aquatic Biodiversity (SAIAB), based in Grahamstown, is a National Research Facility of the National Research Foundation. SAIAB is an internationally recognised centre for the study of aquatic biodiversity.

The SAIAB Collections Building was constructed adjacent to the existing Administration building in 2007 for the purpose of housing the extensive collection of aquatic biological specimens curated by SAIAB as a research platform for scientists, researchers and students. The new building addressed the pressing need for additional space for offices and laboratories in the Administration building as well as the separation of the operational and storage areas. This is essential in order to mitigate health and safety risks inherent in managing an alcohol-based collection. The Collection building was designed and built specifically for this purpose, with specialised systems for air control, ventilation and fire prevention. The Collection building was constructed with two floors, with the upper level left unfitted for future development. This tender is for the completion of the interior of the first floor.
T1.2 : TENDER NOTICE AND INVITATION TO TENDER

PROJECT NAME : SOUTH AFRICAN INSTITUTE FOR AQUATIC BIODIVERSITY (SAIAB) : GRAHAMSTOWN - COLLECTION CENTRE : HVAC INSTALLATION
TENDER No. NRF/SAIAB/2016-022

Tenders are hereby invited for the completion of the second floor of the SAIAB Collection building from suitably experienced and skilled Subcontractors.

Note: A compulsory clarification meeting will be held at SAIAB at 10:00 on 26 July 2016 on site. Tenderers are to meet at SAIAB in Somerset Street, Grahamstown at the Main Entrance gate to the SAIAB Collection Centre, whereafter they will be taken to the site. Prospective tenderers are required to attend this meeting, failure to attend this meeting will result in the tender not being considered.

Tender documents will be available as from 11 July 2016 during office hours (08:00-17:00) at the offices of the Clinkscales Maughan-Brown, 41 Parliament Street, Central, Port Elizabeth, 6001 on payment of a compulsory cash non-refundable levy of R500.00 per document. No cheques will be accepted. Documents are to be collected prior to the compulsory clarification meeting. No documents will be issued at the compulsory clarification meeting.

One original copy of the completed tender document in a sealed envelope endorsed: “NRF/SAIAB/2016-022- HVAC INSTALLATION” must be deposited in the Tender Box in the Reception Area at SAIAB not later than 11:00 on 10 August 2016 when tenders will be opened in public.

Tenderers shall take note of the following conditions:

- Electronic or faxed tenders will not be considered.
- The lowest or any tenders need not necessarily be accepted.
- Late tenders will not be accepted.
- Failure to complete all supplementary information and the RETURNABLE SCHEDULES will result in the tender being deemed null and void (eliminated).
- Tender Forms that are incomplete or incorrectly completed will result in the disqualification of that tender.
- Tenders may only be submitted on the tender documentation issued.
- The Employer reserves the right to request additional information over and above that which is provided by the Tenderer should he deem it necessary to complete his evaluation of the Tenderer.

Tender Evaluation

Tenders will be in assessed in four stages, namely:

- Stage 1: Eligibility
- Stage 2: Responsiveness
- Stage 3: Functionality
Stage 1: Eligibility

A Tenderer will not be eligible to submit a Tender if:

(a) the Contractor submitting the Tender is under restrictions or has principals who are under restriction to participate in the Employer's procurement due to corrupt or fraudulent practices.

(b) The Contractor submitting the Tender is insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of the foregoing;

(c) The Contractor submitting the Tender, or any of its directors, are listed on the Register of Tender Defaulters as a person prohibited from doing business with the public sector.

(d) The Contractor submitting the Tender tenders an unduly high or unduly low price (offers of either 10% below or 10% above the Professional Quantity Surveyors estimate) will not be considered.

A Tenderer will be eligible to submit a Tender if they are registered with the CIDB and they are:

(a) contractors who have a contractor grading designation equal to or higher than 3ME determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations; and

(b) Joint ventures where every member of the joint venture is registered with the CIDB and each member has a contractor grading designation equal to or higher than 3ME.

Stage 2: Responsiveness

Over and above the test for responsiveness as described under F3.8 of the Standard Conditions of Tender, failure of the Tenderer to submit the following will result in immediate disqualification:

(i) Proof of attendance of Tender briefing and visit to the site – Form T2.2.1. Signing of the Attendance Register will be regarded as sufficient proof that the Tenderer has attended the Tender briefing. However, the Tenderer must sign Form T2.2.1 regardless of whether the employer’s representative has counter signed same.

(ii) Certificate of authority for signatory (Schedule T2.2.2)

(iii) Certified copies of Company/CC/Trust/Partnership registration certificates as well as signed agreements and power of attorney for Joint Venture/Consortium if applicable, Identity Documents (Refer to Schedule T2.2.3)

(iv) Joint Venture Agreement or Joint Venture/Consortium Disclosure Form (Schedule T2.2.4) and Power of attorney in case of Joint Ventures.

(v) Valid original Tax Clearance Certificate or Declaration by the South African Revenue Services that tax matters of the Tendering company/association or Joint Venture parties are in order. Refer Schedule T2.2.5.

(vi) Proof of CIDB contractor grading designation equal to or higher than 3ME – refer F2.1
of the Tender Data and Schedule T2.1.2. CRS number also to be provided.

(vii) Proof of Workmen’s Compensation Registration (or proof of payment of contributions in terms of the Compensation for Occupational Injuries and Diseases Act No 130 of 1993) (Form T2.2.7) and signing of the Health and Safety Declaration (Form T2.5.2).

(viii) Declaration of Interest (Form T2.2.8).

(ix) Declaration of Tenderers Past Supply Chain Management Practices (Form T2.2.9).

(x) Certificate of Independent Tender Determination (Form T2.2.10).

(xi) Related Experience of Tenderer (Form T2.2.11)

(xii) List of Key Personnel (Form T2.2.12)

(xiii) Curriculum Vitae Contracts Manager (Form T2.2.13)

(xiv) Curriculum Vitae Site Agent (Form T2.2.14)

(xv) Curriculum Vitae Foreman (Form T2.2.15)

Stage 3: Functionality

Functionality of responsive Tenders submitted is evaluated according to the predetermined criteria described below, taking into account, among other factors, the quality, reliability and the technical capacity and ability of a Tenderer.

A Tender will be disqualified if it fails to meet the minimum threshold for functionality which has been set at 70% for this project.

Tenderers will be evaluated on the following factors, with points weighting as shown:

Project References : 65 points
Number of Years in Operation : 10 points
Comparable Project Nature : 10 Points

In order for the evaluation reports to be prepared by the Professional Team, the Tenderer is obliged to provide comprehensive information on forms T2.2.11 to T2.2.13 in the tender documents. Failure to provide the said forms will cause the tender to be declared non-responsive and removed from any further consideration. The Employer reserves the right to request additional information over and above that which is provided by the Tenderer on said forms. The information must be provided by the Tenderer within the stipulated time as determined by the Principal Agent, failing which the tender offer will mutatis mutandis be declared nonresponsive.

Project References

The Tenderer must provide references from the Employer or Principal Agent for at least five different projects, which must be of a similar nature and have a project value of at least R1 500 000 each. The references must be from five different Employers or Principal Agents. The information must be completed on forms T2.3.1 to T2.3.5 included in these tender documents.

Each Employer or Principal Agent of the projects referred to will be required to evaluate the Tenderers performance on the following criteria:

Criterion 1: Project performance/ time management/ programming
Criterion 2: Quality of workmanship
Criterion 3: Resources: Personnel
Criterion 4: Co-ordination with other services
Criterion 5: Financial management/ payment of suppliers/ cash flow etc.
Criterion 6: Occupational Health & Safety: Compliance

The Employer or Principal Agent on each project referred to will score each of the above criterion on the following basis:

Very poor = 1
Poor = 2
Fair = 3
Good = 4
Excellent = 5

Any tenderer not achieving a minimum score of three or more for each criterion will be declared non-responsive and removed from further evaluation as the tenderer would present an unacceptable risk to the Employer.

Number of Years in Operation
The Tenderer must provide additional information with respect to Years in Operation and Local Office. This information must be completed on form T2.3.6 included in these tender documents.

Each of the above criterion will be scored on the following basis:

0 – 4 Years in Operation = 0
4 – 5 Years in Operation = 1
5 – 6 Years in Operation = 2
6 – 7 Years in Operation = 3
7 – 8 Years in Operation = 4
9 – 10 Years in Operation = 5
10 plus Years in Operation = 10

Comparable Project Nature
The Tenderer must provide additional information with respect to Comparable Project Experience on a successfully completed project. This information must be completed on form T2.3.7 included in these tender documents.
This criteria will be scored on 10 points and will be evaluated on the basis of the Tenderer’s ability to show experience on a similar project. Failure to do so will result in 0 points been scored.

Stage 4: Financial Offer and Preference Evaluation

All responsive Tenders that qualify by meeting the minimum thresholds for functionality are then evaluated on the basis of price and preference in accordance with the Preferential Procurement Regulations 2011 (Government Gazette No. 34350 dated 8 June 2011). The points scored for functionality are not carried over or considered in the calculation of the
Financial and Preference evaluation.

All responsive Tenders that have achieved the minimum qualification score for functionality shall be evaluated further in terms of the preference point system prescribed in regulation 5 and 6 of the Preferential Procurement Regulations 2011 (Government Gazette No. 34350 dated 8 June 2011) i.e.: 
For Tenders with a Rand Value above R1,0 million (90/10)

(1) The following formula must be used to calculate the points for price in respect of Tenders with a Rand value above R1 000 000 (all applicable taxes included):

\[ P_s = 90 \left( 1 - \frac{P_t - P_{min}}{P_{min}} \right) \]

Where

- \( P \) = Points scored for comparative price of Tender or offer under consideration;
- \( P_t \) = Comparative price of Tender or offer under consideration; and
- \( P_{min} \) = Comparative price of lowest acceptable Tender or offer.

(2) Subject to sub-regulation (3) below, points must be awarded to a Tenderer for attaining their B-BBEE status level of contributor in accordance with the table below:

<table>
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<tr>
<th>B-BBEE STATUS LEVEL OF CONTRIBUTOR</th>
<th>NUMBER OF POINTS</th>
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<td>7</td>
<td>2</td>
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<tr>
<td>8</td>
<td>1</td>
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<tr>
<td>Non-compliant contributor</td>
<td>0</td>
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</tbody>
</table>

(3) A maximum of 10 points may be allocated in accordance with sub-regulation (2) above.

(4) The points scored by a Tenderer in respect of the level of B-BBEE contribution contemplated in sub-regulation (2) above shall be added to the points scored for price as calculated in accordance with sub-regulation (1) above.

(5) The contract shall be awarded to the Tenderer who scores the highest total number of points.

Stage 4: Risk Analysis

In addition to the evaluation of Responsiveness and Functionality, a risk analysis will be performed on the Tenderers having the highest ranking / number of points to ascertain if any of the following, as relevant, present an unacceptable commercial risk to the employer in terms of:
a) Clause F.3.13 of the Standard Conditions of Tender below;
b) Unduly high or unduly low Tendered prices in the Tender offer
c) Contract data provided by the contractor; and
d) The contents of the Tender returnables which are to be included in the contract.

Technical Enquiries can be addressed to: Mr John Rauch  
Tel: 041-585 9731  
E-mail: jrauch@cmbpe.co.za

Bidding Procedure Enquiries can be addressed to: Ms Wendy Sweetman  
Tel: 046 603 5820 / 083 313 5954  
E-mail: W.Sweetman@saiab.ac.za

COMPILED BY:

<table>
<thead>
<tr>
<th>Peter May</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWMH Quantity Surveyors</td>
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T1.3 : TENDER DATA

GENERAL

The Conditions of Tender applicable to this contract are the Standard Conditions of Tender as contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement (28 May 2010) as published in Government Gazette No. 33239, Board Notice 86 of 2010.

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this Tender. Data shall have preference in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of Tender Data given below is cross-referenced to the relevant clause in the Standard Conditions of Tender to which it mainly applies.

All references to the terms: “Tender” and “Tenders” and/or “Tenderer” and “Tenderers” in these documents and the Conditions of Tender shall have the same meaning as each other and shall be of equal force.

F.1.1 Actions

The Employer for this Contract is the South African Institute for Aquatic Biodiversity – hereafter SAIAB.
F.1.2 Tender Documents

(a) The Tender Document issued by the Employer comprises of the following:

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<tr>
<td>T2.4</td>
<td>Forms, Certificates and Schedules required for Tender Evaluation Purposes : Stage 4 : Financial Offer and Preference Evaluation</td>
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<td>Forms, Certificates and Schedules required for Tender Evaluation Purposes</td>
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<td>T2.6</td>
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<td>Main Contract Preliminary &amp; General Information</td>
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The Tender Document and the drawings shall be obtained from the Employer or his authorised representative at the physical address stated in the Tender Notice, upon payment of the amount stated in the Tender Notice.

The following documents are relevant to this Tender and Tenderers are advised to obtain their own copies thereof:

(a) “JBCC Series 2000 N/S Subcontract Agreement (March 2005)” issued by the Joint Building Contracts Committee Inc. (including amendments).

(b) “Code of Practice for the Wiring of Premises” SANS 10142 Part 1.

(c) “Code of Practice for the application of the National Building Regulations” SABS 0400-1990


(e) In addition, Tenderers are advised, in their own interest, to obtain their own copies of the following acts, regulations and standards referred to in the this document as they are essential for the Tenderer to get acquainted with the basics of construction management, the implementation of preferential construction procurement policies and participation of targeted enterprise and labour.


F.1.4 Employer’s Agent

The Employer’s agent is : Clinkscales Maughan-Brown

Address : 41 Parliament Street

Central

PORT ELIZABETH

6001

Contact Number : 041 – 585 9731

E-Mail : cmb@cmbpe.co.za
F.2.7  Site visit and clarification meeting
See Notice and Invitation to Tender T1.1

F.2.12  Alternative Tender offers
No alternative offers will be considered.

F.2.13  Submitting a Tender Offer
Tender offers shall be submitted as an original copy of the compulsory returnable schedules.

F.2.13.5  Delivery of Tender
The Employer’s address for delivery of Tender offers and identification details to be shown on each Tender offer package are as per the Notice and Invitation to Tender T1.1.

F.2.13.6  Two Envelope System
A two envelope system will be followed.

F.2.15  Closing time
The closing time for submission of Tender Offers is as per the Notice and Invitation to Tender T1.1.

F.2.16  Tender offer validity
The Tender offer validity period is 90 days from the closing time for submission of Tenders.

F.2.19  Inspections, tests and analyses
Access shall be provided for inspections and testing by personnel acting on behalf of the Employer.

F.2.23  Certificates
All required documents and certificates expressly requested must be provided with the Tender:

F.3.4  Opening of Tender Submissions
Time and location for opening of the tender offers are as per the Notice and Invitation to Tender T1.1.
F.3.11 Evaluation of Tender Offers

The procedure for the evaluation of responsive tenders is method 2 of the CIDB Standard Tender Evaluation Method.

F3.17 Copies of contract

The number of paper copies of the signed contract to be provided by the Employer is **ONE**.
LIST OF RETURNABLE DOCUMENTS

Tenderers to complete this checklist to ensure that all information in the Tender Document is completed included and read by the Tenderer.

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<td></td>
</tr>
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<td>Construction Guarantee</td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>T2.5.6</td>
<td>Form of Intent to provide a Performance Guarantee</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>T2.5.7</td>
<td>Audited Financial Statements for the last three years</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>T2.5.8</td>
<td>Letter of Good Standing from Tenderers Banker</td>
<td></td>
</tr>
<tr>
<td>77</td>
<td>T2.5.9</td>
<td>Schedule of Proposed Sub Contractors</td>
<td></td>
</tr>
<tr>
<td>78 – 83</td>
<td>T2.5.10</td>
<td>Schedule of Equipment Offered</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>T2.6</td>
<td>Other Forms, Certificates and Schedules that will be Incorporated into the Contract</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>T2.6.1</td>
<td>Record of Addenda to Tender Documents</td>
<td></td>
</tr>
<tr>
<td>86</td>
<td>T2.6.2</td>
<td>Schedule of Departures from Specification</td>
<td></td>
</tr>
</tbody>
</table>
T2.1 : RETURNABLE DOCUMENTS

Notes :

The Tender Document must be submitted as a whole. All forms must be properly completed as required and the document shall not be taken apart or altered in any way whatsoever.

All forms must be duly completed in black ink as required.

The list of returnable documents, which consists of forms and schedules to be completed and company specific certificates and information pages to be attached, comprise the following:

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<table>
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<th>Description</th>
<th>Page</th>
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<td>T2.3</td>
<td>Forms, Certificates and Schedules required for Tender evaluation purposes : Stage 3 : Functionality</td>
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<td>T2.5</td>
<td>Forms, Certificates and Schedules required for Tender evaluation purposes</td>
<td>56 - 83</td>
</tr>
<tr>
<td>T2.6</td>
<td>Other Forms, Certificates and Schedules that will be Incorporated into the Contract</td>
<td>84 - 86</td>
</tr>
</tbody>
</table>
T2.1 : FORMS, CERTIFICATES AND SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES: STAGE 1 : ELIGIBILITY

T2.1.1 FORM OF TENDER in terms of a:

Principal Contract Agreement
N/S Subcontract Agreement
Minor Works Agreement

________________________________________
Principal Agent or Agent
KWMH Quantity Surveyors

________________________________________
Street Address
4 Lawrence St Central PE

________________________________________
Tel No
041-585 8374

________________________________________
Employer
South African Institute for Aquatic Biodiversity (SAIAB)

________________________________________
(N/S tender only) Contractor

________________________________________
Tenderer

________________________________________
Postal Address

________________________________________
Code

________________________________________
Tel No.
Fax
Email

Project
Completion of 1st floor Collections Facility

Works
HVAC Installation

1.0 CONDITIONS OF TENDER

1.1 PRINCIPAL, NOMINATED / SELECTED AND MINOR WORKS AGREEMENTS

1.1.1 The successful tenderer will be appointed in terms of the JBCC Principal Building Agreement, JBCC N/S Subcontract Agreement or JBCC Minor Works Agreement.

1.1.2 Additions and alterations to such agreement are clearly detailed in the schedule of the agreement.

1.1.3 All pre-tender information is set out in the Schedule. Variables requiring selection by the Tenderer are to be clearly marked for later inclusion in the Schedule.

1.1.4 Any conditions or qualifications that are appended by the tenderer, which are at variance with the conditions in this or the tender enquiry document, may invalidate the submitted tender.

1.1.5 Details of the amount of item 2.4.2 of tender sum are to be clearly designated in the tender documentation provided by the principal agent or agent.

1.1.6 This tender is to be submitted to the principal agent or agent at the street address stated above before the tender closing date and time stated on the cover hereof.

1.1.7 Tenders will be opened in public directly after the stated closing time. Only the total tender sum as stated in 2.4.5 of each tender will be announced.

1.1.8 The lowest or any tender will not necessarily be accepted.

1.2 NOMINATED/SELECTED SUBCONTRACT AGREEMENT ONLY

1.2.1 The Contractor has been or will be appointed in terms of the JBCC Principal Building Agreement.

1.2.2 Where the Tenderer is advised of the appointment of the Contractor after submission of this tender, the Tenderer shall be entitled to reasonable objection to being appointed by the contractor.
1.2.3 This tender is submitted to the Principal agent or agent who is authorised in terms of the Principal Building Agreement to instruct the contractor to appoint the successful tenderer as a nominated/selected subcontractor.

2.0 THE TENDER

2.1 By the submission of this tender to the employer the tenderer offers and agrees to contract for, execute and complete the works/subcontract works for the tender sum as stated below.

2.2 This tender shall remain in full legal force for sixty (60) calendar days from the tender closing date in the case of Principal or Nominated/Selected Contracts. The tenderer accepts liability for damages as may be suffered by the employer should the tender validity period not be honoured.

2.3 The tender takes into account the documents listed hereunder or as per the attached addendum by the principal agent or agent for the purpose of preparing and submitting this tender.

<table>
<thead>
<tr>
<th>Document list or addendum identification</th>
</tr>
</thead>
</table>

2.4 TENDER SUM COMPILATION

2.4.1 Tenderer's work including Prime Cost and provisional Amounts

2.4.2 Budgetary Allowances
(amount stated by the principal agent or agent)  
R50 000.00

2.4.3 Sub Total

2.4.4 Add tax on 2.4.3

2.4.5 TOTAL TENDER SUM inclusive of tax

Tender sum in words

2.5 TENDERER'S SELECTIONS (Fill in Yes / No / Nil etc as appropriate)

<table>
<thead>
<tr>
<th>Selection Item</th>
<th>PBA</th>
<th>N/S</th>
<th>Minor</th>
<th>Addendum</th>
<th>No/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminaries</td>
<td></td>
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<tr>
<td>Payment</td>
<td></td>
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<tr>
<td>Alternative A</td>
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<td>Adjustment</td>
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<td>Alternative A</td>
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<td>Security</td>
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<td>Cash deposit</td>
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<td>Variable construction guarantee</td>
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<tr>
<td>Fixed construction guarantee</td>
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<tr>
<td>Retention (Payment reduction)</td>
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<tr>
<td>Advance payment guarantee</td>
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<tr>
<td>Payment guarantee required</td>
<td></td>
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</tr>
</tbody>
</table>

Thus done and signed at ____________________________ on ____________________________

____________________________________________  
Name of signatory                          Capacity of authorised signatory

____________________________________________  
As Witness for and on behalf of the Tenderer who by 
Signature hereof warrants authorisation hereto

JBCC Series 2000 © Code 2115 March 2005
T2.1.2 : PROOF OF REGISTRATION WITH CIDB

The Tenderer shall attach hereto the Contractors proof of valid registration certificate with CIDB. CRS number(s) also to be provided.

In the case of Consortium/Joint Venture Tenders, each partner shall provide their own valid CIDB registration certificate.
T2.1.3 : PROOF OF REGISTRATION WITH CSD

In order for a service provider / supplier to do business with the South African Institute for Aquatic Biodiversity they must be registered on the National Treasury Central Supplier Database (CSD) and provide the South African Aquatic Biodiversity with their Supplier Unique No. and an Access Reference No.
### T2.2 : FORMS, CERTIFICATES AND SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES : STAGE 2: RESPONSIVENESS

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<thead>
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<th>Description</th>
<th>Page No.</th>
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<td>Curriculum Vitae Site Foreman</td>
<td>39 - 40</td>
</tr>
</tbody>
</table>
T2.2.1 : TENDER BRIEFING / SITE INSPECTION ATTENDANCE CERTIFICATE

This is to certify that

(Tenderer)........................................................................................................ of

Address....................................................................................................................

Telephone number..................................................................................................

Fax number.............................................................................................................

E-mail address........................................................................................................

was represented by the person(s) named below at the compulsory meeting held for all Tenderers at SAIAB Collection Centre, on 26 July 2016 starting at 10:00.

I/We hereby acknowledge that I/We visited the site and acquainted ourselves with the conditions likely to influence the work and all aspects that could influence either the cost or the construction of the services prior to determining our rates and prices.

I/We further certify that I/we are satisfied with the description of the work and explanations given at the meeting and that I/We understand adequately the work to be done, as specified and implied, in the documentation and information provided.

TENDERER’S REPRESENTATIVE(S):

Name : ............................................... Signature ..............................................

Capacity .............................................................................................................

Name : ............................................... Signature ..............................................

Capacity .............................................................................................................

EMPLOYER’S REPRESENTATIVE:

Name : ............................................... Signature ..............................................

Capacity ........................................................ Date.............................................
T2.2.2 : CERTIFICATE OF AUTHORITY FOR SIGNATORY

Indicate the status of the Tenderer by ticking the appropriate box hereunder. The Tenderer must complete the certificate set out below for the relevant category.

<table>
<thead>
<tr>
<th>(I) COMPANY</th>
<th>(II) CLOSE CORPORATION</th>
<th>(III) PARTNERSHIP</th>
<th>(IV) JOINT VENTURE</th>
<th>(V) SOLE PROPRIETOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

Signatories for Companies, Close Corporations, Partnerships, Joint Ventures or Sole Proprietors must establish their authority thereto by attaching a copy of the relevant resolution of their Board of Directors, Members or Partners duly signed and dated. Examples are shown below.

(I) CERTIFICATE FOR COMPANY

I, ................................................................................. chairperson of the Board of Directors of .................................................................................., hereby confirm that by resolution of the Board (copy attached) taken on .................. 20...., Mr/Ms ................................., acting in the capacity of ................................................., was authorized to sign all documents in connection with the Tender for Tender No. ____________ and any contract resulting from it, on behalf of the company.

Chairman: .................................................................

As Witness: 1. ............................................................... 2. .................................................................

Date: .................................................................

(II) CERTIFICATE FOR CLOSE CORPORATION

We, the undersigned, being the key members in the business trading as .............................................................................................................., hereby authorise Mr/Ms .............................................................................................................. to sign all documents in connection with the Tender for Tender No. ____________ and any contract resulting from it, on our behalf.
<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>SIGNATURE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Notes: this certificate is to be completed and signed by all of the key members upon whom rests the directions of the affairs of the Close Corporation as a whole.
(III) CERTIFICATE FOR PARTNERSHIP
We, the undersigned, being the key partners in the business trading as, ………………………………………………………………………………..hereby authorize Mr/Ms ……………………………………………………………………………………………acting in the capacity of ……………………………………………………………………………….., to sign all documents in connection with the Tender for Tender No. ___________ and any contract resulting from it, on our behalf.

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>SIGNATURE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead partner</td>
<td>-----------------------------</td>
<td>---------</td>
<td></td>
</tr>
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<td></td>
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</tbody>
</table>

Note: This certificate is to be completed and signed by all of the key members upon whom rests the direction of the affairs of Partnership as a whole.

(IV) CERTIFICATE JOINT VENTURE
We, the undersigned, are submitting this Tender offer in Joint Venture and hereby authorize Mr/Ms …………………………………………………………………………………………………………………………., authorized signatory of the company……………………………………………………………………………………………………………………………………………………………………………………………………. acting in the capacity of lead partner, to sign all documents in connection with the TENDER offer for Tender No. ___________ and any contract resulting from it, on our behalf.

This authorization is evidenced by the attached power of attorney signed by legally authorized signatories of all the partners to the Joint Venture.
NAME OF FIRM | ADDRESS | DULY AUTHORISED SIGNATORY
---|---|---
Lead Partner | | Signature
CIDB Registration No. | | Name
Lead Partner | | Signature
CIDB Registration No. | | Name
Lead Partner | | Signature
CIDB Registration No. | | Name

Note: This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Partnership as a whole.

(V) CERTIFICATE FOR SOLE PROPRIETOR

I, .......................................................................................................................... hereby confirm that I am the sole owner of the business trading as .................................................................

Signature of Sole Owner: ...................................................

As Witnesses:
1. .............................................................
2. .............................................................

Date: .............................................................
T2.2.3 : REGISTRATION CERTIFICATES/AGREEMENTS / IDENTITY DOCUMENTS

Attach hereto certified copies of Registration Certificates for Companies and Closed Corporations and certified copies of Identity Documents for Partnerships and Sole proprietors as well as signed Agreements and Powers of Attorney for Joint Venture / Consortium if applicable.
T2.2.4 : JOINT VENTURE/CONSORTIUM DISCLOSURE FORM

TO BE COMPLETED ONLY IF TENDER IS SUBMITTED IN A JOINT VENTURE OR CONSORTIUM

GENERAL

i) All the information requested must be filled in the spaces provided. If additional space is required, additional sheets may be used and attached to the original documents.

ii) A copy of the joint venture agreement must be attached to this form, in order to demonstrate the Affirmable, Joint Venture Partner’s share in the ownership, control, management responsibilities, risks and profits of the joint venture, the proposed joint venture agreement must include specific details relating to:
   a) the contributions of capital and equipment
   b) work items to be performed by the Affirmable Joint Venture Partner’s own forces
   c) work items to be performed under the supervision of the Affirmable Joint Venture Partner.

iii) Copies of all written agreements between partners concerning the contract must be attached to this form including those, which relate to ownership options and to restrictions/limits regarding ownership and control.

iv) ABE partners must complete ABE Declaration Affidavits.

v) The joint venture must be formalised. All pages of the joint venture agreement must be signed by all the parties concerned. A letter/notice of intention to formalise a joint venture once the contract has been awarded will not be considered.

vi) Should any of the above not be complied with, the joint venture will be deemed null and void and will be considered non-responsive.

1. JOINT VENTURE PARTICULARS

a) Name…………………………………………………………………………………………………………………

b) Postal Address…………………………………………………………………………………………………………

   ……………………………………………………………………………………………………………………………

c) Physical address………………………………………………………………………………………………………

   ……………………………………………………………………………………………………………………………

d) Telephone………………………………………………………………………………………………………………

   ……………………………………………………………………………………………………………………………

e) Fax…………………………………………………………………………………………………………………………
2. IDENTITY OF EACH NON-AFFIRMABLE JOINT VENTURE PARTNER

2.1(a) Name of Firm .....................................................................................................................
Postal Address ..............................................................................................................................
Physical Address ...........................................................................................................................
Telephone ....................................................................................................................................
Fax ................................................................................................................................................
Contact person for matters pertaining to Joint Venture Participation Goal requirements
..............................................................................................................................................

2.2(a) Name of Firm .....................................................................................................................
Postal Address ..............................................................................................................................
Physical Address ...........................................................................................................................
Telephone ....................................................................................................................................
Fax ................................................................................................................................................
Contact person for matters pertaining to Joint Venture Participation Goal requirements
..............................................................................................................................................

(Continue as required for further non-Affirmable Joint Venture Partners)

3. IDENTITY OF EACH AFFIRMABLE JOINT VENTURE PARTNER

3.1(a) Name of Firm .....................................................................................................................
Postal Address ..............................................................................................................................
Physical Address ...........................................................................................................................
Telephone ....................................................................................................................................
Fax ................................................................................................................................................
Contact person for matters pertaining to Joint Venture Participation Goal requirements
..............................................................................................................................................

3.2(a) Name of Firm .....................................................................................................................
Postal Address ..............................................................................................................................
Physical Address ...........................................................................................................................
Telephone ....................................................................................................................................
Fax ................................................................................................................................................
Contact person for matters pertaining to Joint Venture Participation Goal requirements
..............................................................................................................................................

3.3(a) Name of Firm .....................................................................................................................
Postal Address ..............................................................................................................................
Physical Address ...........................................................................................................................
4. BRIEF DESCRIPTION OF THE ROLES OF THE AFFIRMABLE JOINT VENTURE PARTNERS IN THE JOINT VENTURE

………………………………………………………………………………………………………………………………
………………………………………………………………………………………………………………………………
……………………………………

5. OWNERSHIP OF THE JOINT VENTURE
a) Affirmable Joint Venture Partner ownership percentage(s) ............... %
b) Non-Affirmable Joint Venture Partner ownership percentage(s) ............. %
c) Affirmable Joint Venture Partner percentages in respect of: *
   (i) Profit and loss sharing.................................................................
   (ii) Initial capital contribution in Rands...........................................
        ..........................................................................................
        ..........................................................................................
   (*Brief descriptions and further particulars should be provided to clarify percentages).
   (iii) Anticipated on-going capital contributions in Rands ....................
        ..........................................................................................
        ..........................................................................................
        ..........................................................................................
   (iv) Contributions of equipment (specify types, quality, and quantities of equipment) to be provided by each partner.
        ..........................................................................................
        ..........................................................................................
        ..........................................................................................
6. RECENT CONTRACTS EXECUTED BY PARTNERS IN THEIR OWN RIGHT AS PRIME CONTRACTORS OR AS PARTNERS IN OTHER JOINT VENTURES

<table>
<thead>
<tr>
<th>NON-AFFIRMABLE JOINT VENTURE PARTNERS</th>
<th>PARTNER NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td></td>
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<tr>
<td>c)</td>
<td></td>
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<td>d)</td>
<td></td>
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<tr>
<td>e)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>AFFIRMABLE JOINT VENTURE PARTNERS</th>
<th>PARTNER NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td></td>
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<tr>
<td>b)</td>
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<td>c)</td>
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<tr>
<td>d)</td>
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<tr>
<td>e)</td>
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</tbody>
</table>

7. CONTROL AND PARTICIPATION IN THE JOINT VENTURE

(Identify by name and firm those individuals who are, or will be, responsible for, and have authority to engage in the relevant management functions and policy and decision making, indicating any limitations in their authority e.g. co-signature requirements and Rand limits).

(a) Joint Venture cheque signing

..................................................................................................................
..................................................................................................................
..................................................................................................................

(b) Authority to enter into contracts on behalf of the Joint Venture

..................................................................................................................
..................................................................................................................
..................................................................................................................
(c) Signing, co-signing and/or collateralising of loans
........................................................................................................................................
........................................................................................................................................
(d) Acquisition of lines of credit
........................................................................................................................................
........................................................................................................................................
(e) Acquisition of performance bonds
........................................................................................................................................
........................................................................................................................................
(f) Negotiating and signing labour agreements
........................................................................................................................................
........................................................................................................................................

8. MANAGEMENT OF CONTRACT PERFORMANCE
(Fill in the name and firm of the responsible person).
(a) Supervision of field operations
........................................................................................................................................
(b) Major purchasing
........................................................................................................................................
(c) Estimating
........................................................................................................................................
(d) Technical management
........................................................................................................................................

9. MANAGEMENT AND CONTROL OF JOINT VENTURE
(a) Identify the “managing partner”, if any,
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
What authority does each partner have to commit or obligate the other to financial institutions, insurance companies, suppliers, subcontractors and/or other parties participating in the execution of the contemplated works?

Describe the management structure for the Joint Venture's work under the contract

<table>
<thead>
<tr>
<th>MANAGEMENT FUNCTION / DESIGNATION</th>
<th>NAME</th>
<th>PARTNER*</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

* Fill in “ex Affirmable Joint Venture Partner” or “ex non-Affirmable Joint Venture Partner”.

10. PERSONNEL

(a) State the approximate number of operative personnel (by trade/function/discipline) needed to perform the Joint Venture work under the Contract.

<table>
<thead>
<tr>
<th>TRADE/FUNCTION/ DISCIPLINE</th>
<th>NUMBER EX AFFIRMABLE JOINT VENTURE PARTNERS</th>
<th>NUMBER EX NON-AFFIRMABLE JOINT VENTURE PARTNERS</th>
</tr>
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</table>
(Fill in “ex Affirmable Joint Venture Partner” or “ex non-Affirmable Joint Venture Partner”).

(b) Number of operative personnel to be employed on the Contract who are currently in the employ of partners.

(i) Number currently employed by Affirmable Joint Venture Partners
.................................................................................................................................

(ii) Number currently employed by the Joint Venture
.................................................................................................................................

(c) Number of operative personnel who are not currently in the employ of the respective partner and will be engaged on the project by the Joint Venture
.................................................................................................................................

(d) Name of individual(s) who will be responsible for hiring Joint Venture employees
.................................................................................................................................

(e) Name of partner who will be responsible for the preparation of Joint Venture payrolls
.................................................................................................................................

11. CONTROL AND STRUCTURE OF THE JOINT VENTURE

Briefly describe the manner in which the Joint Venture is structured and controlled.
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

The undersigned warrants that he/she is duly authorised to sign this Joint Venture Disclosure Form and affirms that the foregoing statements are true and correct and include all material information necessary to identify and explain the terms and operations of the Joint Venture and the intended participation of each partner in the undertaking.

The undersigned further covenants and agrees to provide the Employer with complete and accurate information regarding actual Joint Venture work and the payment therefore, and any proposed changes in any provisions of the Joint Venture agreement, and to permit the audit and examination of the books, records and files of the Joint Venture, or those of each partner relevant to the Joint Venture, by duly authorised representatives of the Employer.

Signature .................................................................................................................................

Duly authorised to sign on behalf of.................................................................................................................................

Name .................................................................................................................................

Address .................................................................................................................................
T2.2.5 : TAX CLEARANCE CERTIFICATE

It is a condition of Tender that the taxes of the successful Tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Tenderer's tax obligations.

Tenderers’ original valid tax clearance certificate to be attached hereto.

IMPORTANT NOTES:

1. The following is an abstract from the Preferential Procurement Regulations 2011 promulgated with the Preferential Policy Framework Act No 5 of 2000:

   “Tax clearance”

   Section 14. No Tender may be awarded to any person whose tax matters have not been declared by the South African Revenue Service to be in order.”

2. The TCC001 “Application for Tax Clearance Certificate” form is available from any SARS branch office nationally or on the website www.sars.gov.za.

   Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register for this service with SARS through the website www.sarsefiling.co.za.

   SARS will then furnish the Tenderer with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.

3. In the case of Joint Venture/Consortium Tenders, each party must submit a separate Tax Clearance Certificate of Declaration by SARS that tax matters are in order.

4. Failure of Tenderer to comply with the above will result in the invalidation of the Tender.

5. The company VAT number should also be quoted on the Tax Clearance Certificate.
T2.2.6 : PROOF OF WORKMEN’S COMPENSATION REGISTRATION

The Tenderer shall attach hereto valid proof of workmen’s compensation registration or proof of payment of contributions in terms of the compensation of occupational injuries and diseases (Act No. 4 of 2002). (Letter of Good Standing)
T2.2.7 : DECLARATION OF INTEREST

TENDERERS WHO FAIL TO DECLARE ACCURATELY AND HONESTLY SHALL BE DISQUALIFIED AND THEIR NAMES AND COMPANY DETAILS WILL BE SUBMITTED TO NATIONAL TREASURY AND PROVINCIAL TREASURY TO BE BLACK LISTED. SHOULD YOUR INTEREST BE DISCOVERED AFTER THE AWARD OF THE CONTRACT THE EMPLOYER SHALL TERMINATE YOUR CONTRACT ON THE BASIS OF THE ABOVE

1. Any legal person, including persons employed by SAIAB or the state, or persons having a kinship with persons employed by SAIAB or the state, including a blood relationship, may make an offer or offers in terms of this invitation to tender (includes a price quotation, advertised competitive Tender, limited Tender or proposal). In view of possible allegations of favouritism, should the resulting Tender, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the Tenderer or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority where-
   - the Tenderer is employed by SAIAB or the state; and/or
   - the legal person on whose behalf the Tendering document is signed, has a relationship with persons/a person who are/is involved in the design, evaluation and or adjudication of the Tender(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the design, evaluation and or adjudication of the Tender.

2. In order to give effect to the above, the following questionnaire must be completed and submitted with the Tender.

2.1. Full Name of Tenderer or his or her representative:

2.2. Identity Number: .................................................................

2.3. Position occupied in the Company (director, trustee, shareholder): .................................................................

1. “State” means –
   (a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
   (b) any municipality or municipal entity;
   (c) Provincial legislature;
   (d) National Assembly or the National Council of Provinces; or
   (e) Parliament

2. “Shareholder” means – a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.4. Company Registration Number:

2.5. Tax Reference Number: .................................................................
2.6. VAT Registration Number: .................................................................

2.7. The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee /PERSAL numbers must be indicated in paragraph 3 below.

2.8. Are you or any person connected with the Tenderer presently employed by SAIAB or the state?  

YES / NO

2.8.1. If so, furnish the following particulars:

Name of person / director / trustee / shareholder/ member
.................................................................................................................................

Name of state institution at which you or the person connected to the Tenderer is employed:
.................................................................................................................................

Position occupied in the state institution:
.................................................................................................................................

2.8.2. Any other particulars:
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

2.8.3. If you are presently employed by SAIAB or the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector?  

YES / NO

2.8.3.1. If yes, did you attached proof of such authority to the Tender document?  

YES / NO

(Note: Failure to submit proof of such authority, where applicable, shall result in the disqualification of the Tender.

2.8.3.2. If no, furnish reasons for non-submission of such proof:
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

2.9. Did you or your spouse, or any of the company’s directors / trustees / shareholders / members or their spouses conduct business with SAIAB or the state in the previous twelve months?  

YES / NO

2.9.1. If so, furnish particulars:
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................
2.10. Do you, or any person connected with the Tenderer, have any relationship (family, friend, other) with a person employed by SAIAB or the state and who may be involved with the design, evaluation and or adjudication of this Tender?

YES / NO

2.10.1. If so, furnish particulars.

……………………………………………………………………………………………………………………………………………….
……………………………………………………………………………………………………………………………………………….
……………………………………………………………………………………………………………………………………………….

2.11. Are you, or any person connected with the Tenderer, aware of any relationship (family, friend, other) between any other Tenderer and any person employed by SAIAB or the state who may be involved with the evaluation and or adjudication of this Tender?

YES/NO

2.11.1. If so, furnish particulars.

……………………………………………………………………………………………………………………………………………….
……………………………………………………………………………………………………………………………………………….
……………………………………………………………………………………………………………………………………………….

2.12. Do you or any of the directors / trustees / shareholders / members of the company have any interest in any other related companies whether or not they are Tendering for this contract?

YES/NO

2.12.1. If so, furnish particulars:

……………………………………………………………………………………………………………………………………………….
……………………………………………………………………………………………………………………………………………….
……………………………………………………………………………………………………………………………………………….
3. **FULL DETAILS OF DIRECTORS / TRUSTEES / MEMBERS / SHAREHOLDERS**

<table>
<thead>
<tr>
<th>FULL NAME</th>
<th>IDENTITY NUMBER</th>
<th>PERSONAL TAX REFERENCE NUMBER</th>
<th>STATE EMPLOYEE NUMBER / PERUSAL NUMBER</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

4. **DECLARATION**

I, THE UNDERSIGNED (NAME)…………………………………………………………………………………………

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 and 3 ABOVE IS CORRECT. I ACCEPT THAT THE STATE WILL REJECT THE TENDER OR DEEM ME TO BE IN DEFAULT OF THE CONTRACT SHOULD THIS DECLARATION PROVE TO BE FALSE.

……………………………………………………………………………………………………………………

Signature Date

……………………………………………………………………………………………………………………

Position (Print) Name of Tenderer

FAILURE TO SIGN THE DOCUMENT WILL LEAD TO DISQUALIFICATION
T2.2.8 : DECLARATION OF TENDERERS PAST SUPPLY CHAIN MANAGEMENT PRACTICES

Penalty: -

Upon detecting any false claim or statement hereunder will result in the Tenderers de-registration and the Tenderer will be prevented from participation in future contracts for a period of three (3) years.

1. This Standard Tendering Document must form part of all Tenders invited.

2. It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3. The TENDER of any Tenderer may be disregarded if that Tenderer, or any of its directors have -
   a. abused the institution’s supply chain management system;
   b. committed fraud or any other improper conduct in relation to such system; or
   c. failed to perform adequately on any previous contract.

4. In order to give effect to the above, the following questionnaire must be completed and submitted with the Tender.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUESTION</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Is the Tenderer or any of its directors listed on the National Treasury’s database as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the audi alteram partem rule was applied).</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4.1.1</td>
<td>If so, furnish particulars:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Volume 2
<table>
<thead>
<tr>
<th>Section</th>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2</td>
<td>Is the Tenderer or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? To access this Register enter the National Treasury’s website, <a href="http://www.treasury.gov.za">www.treasury.gov.za</a>, click on the icon “Register for Tender Defaulters” or submit your written request for a hard copy of the Register to facsimile number (012) 3265445.</td>
<td>![Yes symbol]</td>
<td>![No symbol]</td>
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<tr>
<td>4.2.1</td>
<td>If so, furnish particulars:</td>
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<tr>
<td>4.3</td>
<td>Was the Tenderer or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?</td>
<td>![Yes symbol]</td>
<td>![No symbol]</td>
</tr>
<tr>
<td>4.3.1</td>
<td>If so, furnish particulars:</td>
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<tr>
<td>4.4</td>
<td>Was any contract between the Tenderer and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?</td>
<td>![Yes symbol]</td>
<td>![No symbol]</td>
</tr>
<tr>
<td>4.4.1</td>
<td>If so, furnish particulars:</td>
<td></td>
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</table>
CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)…………………………………………… CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

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

........................................... .............................................
Position                           Name of Tenderer

I confirm that I am duly authorized to sign this contract.
T2.2.9 : CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

1. This Standard Tendering Document (SBD) must form part of all Tenders invited.

2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive Tendering (or Tender rigging). Collusive Tendering is a per se prohibition meaning that it cannot be justified under any grounds.

3. Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
   a. disregard the Tender of any Tenderer if that Tenderer, or any of its directors have abused the institution’s supply chain management system and or committed fraud or any other improper conduct in relation to such system.
   b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the Tendering process or the execution of that contract.

4. This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when Tenders are considered, reasonable steps are taken to prevent any form of Tender-rigging.

5. In order to give effect to the above, the attached Certificate of Tender Determination must be completed and submitted with the Tender:

__________________________________________________________________________________________

1. Includes price quotations, advertised competitive Tenders, limited Tenders and proposals.

2. Tender rigging (or collusive Tendering) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a Tendering process. Tender rigging is, therefore, an agreement between competitors not to compete.
CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Tender:

CONTRACT: __________________________________________________________

in response to the invitation for the Tender made by:

________________________________________________________________________

(Name of Institution)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: _______________________________________________________ that:

(Name of Tenderer)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the Tenderer to sign this Certificate, and to submit the accompanying Tender, on behalf of the Tenderer;
4. Each person whose signature appears on the accompanying Tender has been authorized by the Tenderer to determine the terms of, and to sign the Tender, on behalf of the Tenderer;
5. For the purposes of this Certificate and the accompanying Tender, I understand that the word “competitor” shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
   (a) has been requested to submit a Tender in response to this Tender invitation;
   (b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
   (c) provides the same goods and services as the Tenderer and/or is in the same line of business as the Tenderer
6. The Tenderer has arrived at the accompanying Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive Tendering.
7. In particular, without limiting the generality of paragraph 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   (a) prices;
   (b) geographical area where product or service will be rendered (market allocation)
   (c) methods, factors or formulas used to calculate prices;
   (d) the intention or decision to submit or not to submit, a Tender;
(e) the submission of a Tender which does not meet the specifications and conditions of the Tender; or

(f) Tendering with the intention not to win the Tender.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this Tender invitation relates.

9. The terms of the accompanying Tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

3. Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.
11. **N.B.: THIS FORM MUST BE SIGNED BY THE TENDERER AND TWO WITNESSES**

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

..........................................................  ..........................................................  
Position                                       Name of Tenderer

WITNESS (1) __________________________ NAME (PRINT) ______________________

WITNESS (2) __________________________ NAME (PRINT) ______________________
**T2.2.10 : RELATED EXPERIENCE OF TENDERER**

The Tenderer shall list below or in a separate schedule a statement of those works/services that are of a similar nature which they have satisfactorily completed in the past five years. The works/services should reflect a project of similar nature to this tender. Information must be provided in the format provided below. It is essential that telephone contact details of references be supplied.

**COMPARABLE PROJECT UNDERTAKEN:**

<table>
<thead>
<tr>
<th>PROJECT DESCRIPTION</th>
<th>EMPLOYER / CONTACT PERSON / TEL NO.</th>
<th>CONSULTING ENGINEER / CONTACT PERSON / TEL NO.</th>
<th>VALUE OF SUB-CONTRACT WORKS</th>
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DATE: ___________________________ SIGNATURE OF TENDERER: __________________
**T2.2.11 : LIST OF KEY PERSONNEL**

The Tenderer shall attach hereto a shortened CV for each key member available to work on the project in the Categories Site Foreman (using the template provided).

The Tenderer shall list below the key personnel to be used on this project.

<table>
<thead>
<tr>
<th>NAME</th>
<th>JOB</th>
<th>RESPONSIBILITIES AND AVAILABILITY TO PROJECT</th>
<th>QUALIFICATIONS (ATTACHED COPY)</th>
<th>EXPERIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SITE FOREMAN</td>
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</table>

<table>
<thead>
<tr>
<th>NAME</th>
<th>JOB</th>
<th>RESPONSIBILITIES AND AVAILABILITY TO PROJECT</th>
<th>QUALIFICATIONS (ATTACHED COPY)</th>
<th>EXPERIENCE</th>
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<tr>
<th>NAME</th>
<th>JOB</th>
<th>RESPONSIBILITIES AND AVAILABILITY TO PROJECT</th>
<th>QUALIFICATIONS (ATTACHED COPY)</th>
<th>EXPERIENCE</th>
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<tr>
<th>NAME</th>
<th>JOB</th>
<th>RESPONSIBILITIES AND AVAILABILITY TO PROJECT</th>
<th>QUALIFICATIONS (ATTACHED COPY)</th>
<th>EXPERIENCE</th>
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</table>
## T2.2.12 : CURRICULUM VITAE SITE FOREMAN

<table>
<thead>
<tr>
<th>Responsibility or role on the project (as per table T2.3.2)</th>
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</thead>
<tbody>
<tr>
<td>Name :</td>
<td>Date of birth :</td>
</tr>
<tr>
<td>Profession :</td>
<td>Nationality :</td>
</tr>
<tr>
<td>Qualifications :</td>
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<tr>
<td>Professional membership :</td>
<td></td>
</tr>
<tr>
<td>Name of employer (firm) :</td>
<td></td>
</tr>
<tr>
<td>Current position :</td>
<td>Years with firm :</td>
</tr>
</tbody>
</table>

**Employment record:** (List of chronological order starting with earliest work experience)

**Experience record pertinent to required service:**

**Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience and that I will be available to execute the work for which I have been nominated.

__________________________________ ____________________
(Signature of Person named in schedule) Date

Attach additional pages if more space is required
SUPPLEMENTARY INFORMATION SITE FOREMAN

Please attach any supporting documentation, supplementary information or Curriculum Vitae to this page.
# T2.3: Forms, Certificates and Schedules Required for Tender Evaluation Purposes: Stage 3: Functionality

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2.3.1</td>
<td>Project Reference Returnable 1 of 5</td>
<td>42 - 43</td>
</tr>
<tr>
<td>T2.3.2</td>
<td>Project Reference Returnable 2 of 5</td>
<td>44 - 45</td>
</tr>
<tr>
<td>T2.3.3</td>
<td>Project Reference Returnable 3 of 5</td>
<td>46 - 47</td>
</tr>
<tr>
<td>T2.3.4</td>
<td>Project Reference Returnable 4 of 5</td>
<td>48 - 49</td>
</tr>
<tr>
<td>T2.3.5</td>
<td>Project Reference Returnable 5 of 5</td>
<td>50 - 51</td>
</tr>
<tr>
<td>T2.3.6</td>
<td>Form of Required Information</td>
<td>52</td>
</tr>
<tr>
<td>T2.3.7</td>
<td>Related Experience of Tenderer</td>
<td>53</td>
</tr>
</tbody>
</table>
NOTE: This returnable document must be completed by the person who was the Employer, Principal Agent, OR Consulting Engineer of a project of at least R1 500 000 including VAT that was completed successfully by the tenderer.

I, ____________________________________________________________ (name and surname) of

_____________________________________________________________ (company name) declare

That I was the Employer/ Principal Agent/ Consulting Engineer on the following project successfully executed by ______________________________________________

(name of tenderer):

Project name: __________________________________________________________

Project location: ______________________________________________________

Construction period: ________________ Completion date: ________________

Subcontract value: _____________________________

A. Please evaluate the performance of the Tenderer on the abovementioned project, on which you were the principal agent, by inserting “Yes” in the relevant box below:

<table>
<thead>
<tr>
<th></th>
<th>Very Poor</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project performance / time management / Programming</td>
<td></td>
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<tr>
<td>2. Quality of workmanship</td>
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<tr>
<td>3. Resources: Personnel</td>
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<td>4. Co-ordination with other services</td>
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<tr>
<td>5. Financial management / payment of suppliers/ cash flow, etc</td>
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<tr>
<td>6. Occupational Health &amp; Safety : Compliance</td>
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</tr>
</tbody>
</table>
B. Would you consider / recommend this tenderer again:

YES  NO

C. Any other comments:

________________________________________________________________________

________________________________________________________________________

D. My contact details are:

Telephone: _________________  Cellphone: _________________  Fax: __________

E-mail: _________________________

Thus signed at __________________ on this _______ day of ______________ 2015

________________________________________
Signature of Referee

COMPANY STAMP

NOTE:

If reference cannot be verified due to the inability to contact the referee or failure on his/her part to respond to a written request to do so, that reference will not score any points.

________________________________________
Name of Tenderer

________________________________________  __________________________
Signature of Tenderer  Date
T2.3.2 : PROJECT REFERENCE RETURNABLE 2 OF 5

NOTE: This returnable document must be completed by the person who was the Employer, Principal Agent, OR Consulting Engineer of a project of at least R1 500 000 including VAT that was completed successfully by the tenderer.

I, ________________________________ (name and surname) of ________________________________ (company name) declare

That I was the Employer/ Principal Agent/ Consulting Engineer on the following project successfully executed by ________________________________

(name of tenderer):

Project name: ____________________________________________________________

Project location: __________________________________________________________

Construction period: ________________ Completion date: ________________

Subcontract value: _____________________________

B. Please evaluate the performance of the Tenderer on the abovementioned project, on which you were the principal agent, by inserting “Yes” in the relevant box below:

<table>
<thead>
<tr>
<th></th>
<th>Very Poor 1</th>
<th>Poor 2</th>
<th>Fair 3</th>
<th>Good 4</th>
<th>Excellent 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project performance / time management / Programming</td>
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<tr>
<td>2. Quality of workmanship</td>
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<tr>
<td>3. Resources: Personnel</td>
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<td>4. Co-ordination with other services</td>
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<tr>
<td>5. Financial management / payment of suppliers/ cash flow, etc</td>
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<tr>
<td>6. Occupational Health &amp; Safety : Compliance</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Would you consider / recommend this tenderer again:

YES NO

C. Any other comments:
________________________________________________________________________
________________________________________________________________________

D. My contact details are:

Telephone: _______________ Cellphone: _______________ Fax: _______________
E-mail: ________________________________

Thus signed at ______________________ on this _______ day of __________ 2015

Signature of Referee

COMPANY STAMP

NOTE:

If reference cannot be verified due to the inability to contact the referee or failure on his/her part to respond to a written request to do so, that reference will not score any points.

__________________________________________________________
Name of Tenderer

__________________________________________________________
Signature of Tenderer Date
T2.3.3 : PROJECT REFERENCE RETURNABLE 3 OF 5

NOTE: This returnable document must be completed by the person who was the Employer, Principal Agent, OR Consulting Engineer of a project of at least R1 500 000 including VAT that was completed successfully by the tenderer.

I, __________________________________________ (name and surname) of __________________________________________ (company name) declare

That I was the Employer/ Principal Agent/ Consulting Engineer on the following project successfully executed by __________________________________________

(name of tenderer):

Project name: _________________________________________________________

Project location: _______________________________________________________

Construction period: _____________________ Completion date: _________________

Subcontract value: _____________________________

C. Please evaluate the performance of the Tenderer on the abovementioned project, on which you were the principal agent, by inserting “Yes” in the relevant box below:

<table>
<thead>
<tr>
<th></th>
<th>Very Poor 1</th>
<th>Poor 2</th>
<th>Fair 3</th>
<th>Good 4</th>
<th>Excellent 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project performance / time management / Programming</td>
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<td>3. Resources: Personnel</td>
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<td></td>
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</tr>
<tr>
<td>6. Occupational Health &amp; Safety : Compliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Would you consider / recommend this tenderer again:

YES  NO

C. Any other comments:
________________________________________________________________________
________________________________________________________________________

D. My contact details are:

Telephone: _______________  Cellphone: _______________  Fax: __________
E-mail: ________________________

Thus signed at __________________ on this ______ day of _____________ 2015

__________________________
Signature of Referee

COMPANY STAMP

NOTE:

If reference cannot be verified due to the inability to contact the referee or failure on his/her part to respond to a written request to do so, that reference will not score any points.

________________________________
Name of Tenderer

________________________________  _______________________
Signature of Tenderer                Date
T2.3.4 : PROJECT REFERENCE RETURNABLE 4 OF 5

NOTE: This returnable document must be completed by the person who was the Employer, Principal Agent, OR Consulting Engineer of a project of at least R1 500 000 including VAT that was completed successfully by the tenderer.

I, ____________________________________________ (name and surname) of ____________________________________________ (company name) declare that I was the Employer/ Principal Agent/ Consulting Engineer on the following project successfully executed by ______________________________________________ (name of tenderer):

Project name: __________________________________________________________

Project location: _________________________________________________________

Construction period: _____________________ Completion date: _________________

Subcontract value: _____________________________

D. Please evaluate the performance of the Tenderer on the abovementioned project, on which you were the principal agent, by inserting “Yes” in the relevant box below:

<table>
<thead>
<tr>
<th></th>
<th>Very Poor (1)</th>
<th>Poor (2)</th>
<th>Fair (3)</th>
<th>Good (4)</th>
<th>Excellent (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project performance / time management / Programming</td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Would you consider / recommend this tenderer again:

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

C. Any other comments:
________________________________________________________________________
________________________________________________________________________

D. My contact details are:

Telephone: __________________  Cellphone: __________________  Fax: __________
E-mail: ________________________________

Thus signed at ______________________ on this ______ day of _________ 2015

______________________________________
Signature of Referee

COMPANY STAMP

NOTE:

If reference cannot be verified due to the inability to contact the referee or failure on his/her part to respond to a written request to do so, that reference will not score any points.

________________________________________
Name of Tenderer

________________________________________
Signature of Tenderer  Date
T2.3.5 : PROJECT REFERENCE RETURNABLE 5 OF 5

NOTE: This returnable document must be completed by the person who was the Employer, Principal Agent, OR Consulting Engineer of a project of at least R1 500 000 including VAT that was completed successfully by the tenderer.

I, ________________________________ (name and surname) of ________________________________ (company name) declare

That I was the Employer/ Principal Agent/ Consulting Engineer on the following project successfully executed by ________________________________

(name of tenderer):

Project name: __________________________________________________________

Project location: ________________________________________________________

Construction period: _________________ Completion date: _________________

Subcontract value: ___________________________

E. Please evaluate the performance of the Tenderer on the abovementioned project, on which you were the principal agent, by inserting “Yes” in the relevant box below:

<table>
<thead>
<tr>
<th></th>
<th>Very Poor 1</th>
<th>Poor 2</th>
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</tr>
</tbody>
</table>
B. Would you consider / recommend this tenderer again:

| YES | NO |

C. Any other comments:

________________________________________________________________________

________________________________________________________________________

D. My contact details are:

Telephone: ________________  Cellphone: ________________  Fax: ________________

E-mail: __________________________

Thus signed at ___________________ on this ______ day of ___________ 2015

___________________________________________

Signature of Referee

COMPANY STAMP

NOTE:

If reference cannot be verified due to the inability to contact the referee or failure on his/her part to respond to a written request to do so, that reference will not score any points.

________________________________________________________________________

Name of Tenderer

___________________________________________  __________________________

Signature of Tenderer  Date
T2.3.6 ; FORM OF REQUIRED INFORMATION

THE FOLLOWING PARTICULARS MUST BE FURNISHED

NAME OF TENDERER ...........................................................................................................................

LOCAL OFFICE INFORMATION: ........................................................................................................

DATE OF COMMENCING OPERATIONS: ............................................................................................

POSTAL ADDRESS ............................................................................................................................

STREET ADDRESS ...........................................................................................................................

TELEPHONE NUMBER CODE .............. NUMBER .........................................................

CELLPHONE NUMBER ....................................................................................................................

FACSIMILE NUMBER CODE .............. NUMBER .............................................................

SIGNATURE OF TENDERER: ............................................................................................................

DATE: ................................................................................................................................................

CAPACITY IN WHICH THIS TENDER IS SIGNED: ..............................................................................
**T2.3.7 : RELATED EXPERIENCE OF TENDERER**

The Tenderer shall list below or in a separate schedule a statement of those works/services that are of a similar nature which they have satisfactorily completed in the past five years. The works/services should reflect a project of similar nature to this tender. It is essential that telephone contact details of references be supplied.

**COMPARABLE PROJECT UNDERTAKEN:**

<table>
<thead>
<tr>
<th>PROJECT DESCRIPTION</th>
<th>EMPLOYER / CONTACT PERSON / TEL NO.</th>
<th>CONSULTING ENGINEER / CONTACT PERSON / TEL NO.</th>
<th>VALUE OF SUB-CONTRACT WORKS</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

DATE: ______________________ SIGNATURE OF TENDERER: ___________________
T2.4 : FORMS, CERTIFICATES AND SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES : STAGE 3 : FINANCIAL OFFER AND PREFERENCE EVALUATION

T2.4.1 Broad-based Black Economic Empowerment Status Level Certificate

Page No.

55
T2.4.1 : BROAD-BASED BLACK ECONOMIC EMPOWERMENT STATUS LEVEL CERTIFICATE

Tenderer to attach hereto the Broad-Based Black Economic Empowerment Status Level Certificate of the Tendering Company and/or Joint Venture Partners.

a) Exempted Micro Enterprises (EME’s) with an annual total revenue of R10.000.000 or less may submit a sworn affidavit or Certificate issued by the Companies and Intellectual Properties Commission (CIPC).

b) Qualifying Small Enterprises (QSE’s) with an annual total revenue of R50.000.000 or less may submit a sworn affidavit or Certificate issued by the Companies and Intellectual Properties Commission (CIPC).

c) All other measured entities are required to submit their original and valid BBBEE status level verification certificate or a certified copy thereof, substantiating their BBBEE rating.

i) as issued prior to 17 February 2016 in accordance with the Construction and Chartered Accounting (CA) Sector Codes

ii) as issued post 17 February 2016 in accordance with the Generic Codes of Good Practice

iii) only BBBEE status level certificates issued by the following are valid:

- Verification Agencies accredited by the South African National Accreditation System (SANAS);

- Registered Auditors approved by the Independent Regulatory Board of Auditors (IRBA) in accordance with the approval granted by the Department of Trade and Industry.

d) The submission of such certificates must comply with the requirements of instructions and guidelines issued by the National Treasury and be in accordance with notices published by the Department of Trade and Industry in the Government Gazette.

e) The BBBEE status level attained by the Tenderer must be used to determine the number of points contemplated in regulations 5 (2) and 6 (2)."
### T2.5 : FORMS, CERTIFICATES AND SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2.5.1</td>
<td>Final Summary</td>
<td>57 - 59</td>
</tr>
<tr>
<td>T2.5.2</td>
<td>Form Concerning Fulfilment of the Construction Regulations</td>
<td>60 - 62</td>
</tr>
<tr>
<td>T2.5.3</td>
<td>N/S Subcontract Variables : Pre-tender information</td>
<td>63 - 66</td>
</tr>
<tr>
<td>T2.5.4</td>
<td>N/S Subcontract Variables : Post-tender information</td>
<td>67 - 69</td>
</tr>
<tr>
<td>T2.5.5</td>
<td>Pro-Forma Construction Guarantee</td>
<td>70 - 73</td>
</tr>
<tr>
<td>T2.5.6</td>
<td>Form of Intent to provide a Performance Guarantee</td>
<td>74</td>
</tr>
<tr>
<td>T2.5.7</td>
<td>Audited Financial Statements for the last three years</td>
<td>75</td>
</tr>
<tr>
<td>T2.5.8</td>
<td>Letter of Good Standing from Tenderers Banker</td>
<td>76</td>
</tr>
<tr>
<td>T2.5.9</td>
<td>Schedule of Proposed Sub Contractors</td>
<td>77</td>
</tr>
<tr>
<td>T2.5.10</td>
<td>Schedule of Equipment Offered</td>
<td>78 - 83</td>
</tr>
</tbody>
</table>
### T2.5.1 : FINAL SUMMARY

#### PRICE SUMMARY

The following Schedule of Prices must be completed by the Tenderer. The total price must include everything necessary to complete the installation in terms of the Specification and Drawings.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supply, delivery, installation, testing and commissioning of the following complete systems.</td>
<td></td>
</tr>
</tbody>
</table>

1. **AIR CONDITIONING UNIT AC2.1**
   1.1 Indoor air handling unit to AC2.1 including filters
   1.2 Outdoor VRF condensing units serving AC2.1
   1.3 Complete refrigeration piping installation to AC2.1 including all cable trays, insulation, external covers, etc.
   1.4 AC2.1 control panel including controls, MXD kits, etc.
   1.5 Commissioning of AC2.1 System.

    **Sub Total 1**

2. Ducting installation to AC2.1 including flexible ducting and supply air diffusers.

3. Sound Attenuator (S2.1)

4. Extract Fans (F2.1, F2.2 and F2.3) including sheetmetal partition in masonry shafts.

5. **Extract System F2.5**
   5.1 Extract Fan F2.5 and sound attenuators
   5.2 Ducting, grilles and flexible ducting

    **Sub Total 6**

6. **Extract System F2.6**
   6.1 Extract Fan F2.6 and sound attenuators
   6.2 Ducting to System F2.6

    **Sub Total 7**
7. Backdraught shutter (BS2.1) 
R………………

8. Motorised shut-off dampers (SD2.1, SD2.2 and SD2.3) including actuators 
R………………

10. Extract grilles EG2.1, EG2.2 and EG2.3 
R………………

11. Weather louvers and burglar bars

11.1 WL2.2  R………………

11.2 WL2.3  R………………

11.3 RA2.1  R………………

11.4 Burglar Bars to WL2.2 and WL2.3 
R………………

Sub Total 11
R………………

12. Air conditioning plantroom louvred doors blanking, filter and damper installation (PF1 to PF4) 
R………………

13. Hot dipped galvanised rectagrid grille over return air opening for System AC2.1 
R………………

14. Complete electrical installation including HVAC control panel, supplies to equipment, local isolators and controls 
R………………

15. Midwall split Unit (AC2,2) including piping brackets, etc.. 
R………………

16. Twelve months maintenance 
R………………

17. Maintenance & Operating Manuals 
R………………

18. Provisional and General (P&G) Items not included above 
R………………

19. Provisional Sums:
R 420 000-00

19.1 Gas Monitoring System  R 150 000-00
19.2 BMS Installation  R 85 000-00
19.3 Wet Lab extract hood  R 65 000-00
19.4 HVAC to Main Building Lab  R 50 000-00
19.5 Specialist Electrical Work  R 70 000-00

TOTAL
CARRIED FORWARD TO FORM OF TENDER (PART 2.1) 
R………………
NAME OF TENDERER: ____________________________________________________________

DATE: _______________  SIGNATURE: ____________________________________________
(for the Tenderer)

TEL: _______________  FAX: _______________  CELL: ________________________________
T2.5.2 : FORM CONCERNING FULFILMENT OF THE CONSTRUCTION REGULATIONS, 2003

In terms of regulation 4(3) of the Construction Regulations, 2003 (hereinafter referred to as the Regulations), promulgated on 18 July 2003 in terms of Section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) the Employer shall not appoint a contractor to perform construction work unless the Contractor can satisfy the Employer that his/her firm has the necessary competencies and resources to carry out the work safely and has allowed adequately in his/her Tender for the due fulfilment of all the applicable requirements of the Act and the Regulations.

1. I confirm that I am fully conversant with the Regulations and that my company has (or will acquire/procure) the necessary competencies and resources to timeously, safely and successfully comply with all of the requirements of the Regulations.

(Tick)

2. Proposed approach to achieve compliance with the Regulations

(Tick)

| Own resources, competent in terms of the Regulations (refer to 3 below) |                |
| Own resources, still to be hired and/or trained (until competency is achieved) |                |
| Specialist sub-contract resources (competent) - specify: |                |
| ............................................................................................................................ |                |
| ............................................................................................................................ |                |
| ............................................................................................................................ |                |
| ............................................................................................................................ |                |
| ............................................................................................................................ |                |
| ............................................................................................................................ |                |
| ............................................................................................................................ |                |
3. Provide details of proposed key persons, competent in terms of the Regulations, who will form part of the Contract team as specified in the Regulations (CV's to be attached).

...............................................................................................................................
...............................................................................................................................
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4. Provide details of proposed training (if any) that will be undergone:
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...............................................................................................................................
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5. Potential key risks identified and measures for addressing risks:
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...............................................................................................................................
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...............................................................................................................................

6. I have fully included in my Tendered rates and prices (in the appropriate payment items provided in the Schedule of Quantities) for all resources, actions, training and any other costs required for the due fulfilment of the Regulations for the duration of the construction and defects repair period.

(Tick)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

SIGNATURE OF PERSON(S) AUTHORISED TO SIGN THIS TENDER:

1. .................................................... Date ....................................................

2. .................................................... Date ....................................................
T2.5.3 : N/S SUBCONTRACT VARIABLES : PRE-TENDER INFORMATION

N/S CONTRACT VARIABLES

THE N/S SCHEDULE

This n/s schedule contains all variables referred to in this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of this n/s agreement.

Spaces requiring information must be filled in, shown as ‘not applicable’ or deleted and not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross referenced to the applicable clause of the n/s schedule. Key cross reference clauses are italicised in [ ] brackets.

42.0 PRE-TENDER INFORMATION

42.1 N/S CONTRACTING AND OTHER PARTIES

42.1.1 Employer

[5.1] Postal address

South African Institute for Aquatic Biodiversity (SAIAB)
Private Bag 1015
Grahamstown Code 6140
Tel 046 – 603 5820  Fax 046 – 622 2403 E-mail

42.1.2 Principal Agent

[5.1] Postal address

KWMH Quantity Surveyors
P O Box 12496
Centrahil, Port Elizabeth Code 6006
Tel 041 – 585 8374  Fax 041 – 585 9046 E-mail

42.1.3 Agent (1)

[5.2] Agent's service

Moors Milne Kievit Architects
Architects

[5.1] Postal address

P O Box 12019
Centrahil, Port Elizabeth Code 6006
Tel 041 – 585 1575  Fax 041 – 585 7797 E-mail

42.1.4 Agent (2)

[5.1] Postal address

Botha Shelver cc t/a KWMH Quantity Surveyors
P O Box 12496
Centrahil, Port Elizabeth Code 6006
Tel 041 – 585 8374  Fax 041 – 585 9046 E-mail
Agent (3)  
Clinkscales Maughan-Brown

Agent’s service  
Mechanical and Electrical Consulting Engineers

Postal address  
P O Box 12615
Centrahil, Port Elizabeth
Tel  041 – 585 9731  Fax  041 – 585 5733  E-mail cmb@cmbpe.co.za

Agent (4)

Agent’s service

Postal address

Tel  Fax  E-mail

N/S CONTRACT DETAILS

42.2.1 Works description  Refer to T3.3 Scope of Work

42.2.2 Site description  Refer to T3.3 Scope of Work

42.2.3 N/S works description  HVAC Installation

1.1

42.2.4 Specific options that are applicable to a State organ only

Where so:

(1) Legislation applicable to the rate  Section 80(1)(b) PFMA

(2) Lateral support insurance to be affected by the contractor  No

(3) Payment will be made for materials  Yes

(4) Dispute resolution by litigation in terms of the principle agreement  No

(5) Extended defects liability period applicable to the following elements:

Electrical and Mechanical : 12 months

42.2.5 Commencement period  of the n/s cons

Volume 2
[15.2.1]  in accordance with the programme (date)

42.2.6 The subcontractor shall be responsible for the design of the n/s works (yes/no) No

**Principal Agreement**

42.2.7 For the works as a whole: im completion n/s work

<table>
<thead>
<tr>
<th>Date</th>
<th>Penalty / day Works Amount</th>
<th>Practical Completion works Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

42.2.9 The law applicable to this agreement [1.2] shall be that of (country)

**INSURANCES**

42.3.1 Contract works insurance effected by the Employer for the sum of (amount) m + 20%

[8.4, 10.1, 12.1]

With a deductible of (amount)

42.3.2 Supplementary insurance required [10.1, 12.1] yes/no

42.3.3 Public liability insurance to be effected by the subcontractor (contractor)

1 of (amount) 00

42.3.4 Public liability insurance to be taken out by the subcontractor (contractor)

42.4 DOCUMENTS

42.4.1 Waiver of the contractor's lien or right of continuing possession required [3.3, 15.13, 31.16.2] in terms of the principal agreement (yes/no)

42.4.2 Construction document copies to be supplied [3.7] to the subcontractor free of charge (No of) 3

42.4.3 N/s bills of quantities / n/s lump sum document schedule of rates drawn up in accordance with (state measuring system) N/A

42.4.4 On acceptance of the tender the detailed bill of quantities / n/s lump document is to be submitted within working days (No of) 5

42.4.5 JBCC Engineering General Conditions are to be included

[3.4] in the n/s contract documents (yes/no) Yes

42.4.6 The n/s contract value is to be adjusted using CPAP indices
[31.5.3] No

Where JBCC CPAP is to be used

Alternative indices (if applicable)
42.4.7 Details of changes made to the provisions of JBCC standard documentation

Refer to Principal Contract Preliminaries

42.4.8 Express amendments to the provisions of this document

Refer to Principal Contract Preliminaries

JBCC Series 2000 Edition 4.1 Code 2102 @ March 2005
T2.5.4 : N/S SUBCONTRACT VARIABLES : POST-TENDER INFORMATION

N/S CONTRACT VARIABLES

THE N/S SCHEDULE

This n/s schedule contains all variables referred to in this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of this n/s agreement.

Spaces requiring information must be filled in, shown as ‘not applicable’ or deleted and not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross referenced to the applicable clause of the n/s schedule. Key cross reference clauses are italicised in [ ] brackets.

42.0 POST – TENDER INFORMATION

Note: All information for this category requires consultation with the subcontractor

42.5 N/S CONTRACT DETAILS

42.5.1 Subcontractor

Postal address

Tel Fax E-mail

Tax / VAT registration No

Physical address

[1.2]

42.5.2 The accepted n/s contract sum inclusive of tax is

[1.1] (in words)

42.5.3 The latest day of the month for the

issue of an interim payment certificate (day of)

42.5.4 The preliminaries amounts shall be

paid in terms of (Alternative A or B)

[32.12]

42.5.5 The preliminaries amounts shall be

adjusted in terms of (Alternative A or B)

[32.12]

42.5.6 The payment guarantee to be effected by the

contractor for the sum of (Amount) [3.1]
42.5.7 The security selected by the subcontractor is a:

[14.1] (1) Variable n/s construction guarantee (yes/no)  
(2) Fixed n/s construction guarantee (yes/no)  
[14.5] (3) Advance payment guarantee (yes/no)  

42.5.8 The annual building holiday period after the commencement of the construction period (dates)  

42.6 DOCUMENTS

42.6.1 N/s contract documents marked and annexed hereto:

Priced n/s bills of quantities (yes/no) (marked)  
N/s lump sum document (yes/no) (marked)  
Guarantees (yes/no) (marked)  
N/s contract drawings (yes/no) (marked)  
Other documents (yes/no) (marked)  

42.6.2 Signed set of n/s contract documents originals held by contractor  

4.3.1 (1) Variable n/s construction guarantee (yes/no)  
If “No” held by ________________________________  
Postal address ________________________________ Code ____________  
Tel ____________ Fax ____________ E-mail ________________________________

42.7 DISPUTE RESOLUTION

42.7.1 The default dispute resolution process is adjudication  
[40.2.1#] (insert arbitration only where adjudication is not to apply)  

Note: It is considered good practice to name the person to be appointed or the body to make such appointment  

42.7.2 Where adjudication is elected:

(1) Adjudicator ________________________________  
Postal address ________________________________ Code ____________  
Tel ____________ Fax ____________ E-mail ________________________________  
or ________________________________

(2) Adjudicator to be appointed by: (name)  
body)
42.7.3 Where arbitration is elected or required in terms of 40.5:

(1) Arbitrator N/A
Postal address

________________________________________________________________________

________________________________________________ Code ____________
Tel ______________ Fax __________ E-mail _______________________________________________________________________

or

(2) Arbitrator to be appointed by: (name

body)

42.7.4 Where mediation is elected in terms of 40.6:

(1) Mediator
Postal address

________________________________________________________________________

________________________________________________ Code ____________
Tel ______________ Fax __________ E-mail _______________________________________________________________________

or

(2) Mediator to be appointed by: (name

body)

42.8 SIGNATURES OF THE N/S CONTRACTING PARTIES

Thus done and signed at ___________________________ on ___________________________

_________________________________________ Capacity of signatory
Name of signatory

_________________________________________

as Witness for and on behalf of the subcontractor who by
signature hereof warrants authorisation hereto

_________________________________________

JBCC Series 2000

_________________________________________
T2.5.5 : CONSTRUCTION GUARANTEE

GUARANTOR DETAILS AND DEFINITIONS

Guarantor means

Physical address

Guarantor’s signatory 1  Capacity

Guarantor’s signatory 2  Capacity

Contractor means

Subcontractor means

Employer means

N/S Works means

Site means

Agreement means

Subcontract Sum means

Amount in words

Guaranteed Sum means

N/S Construction Guarantee

(Insert Variable or Fixed) (Insert expiry date)

AGREEMENT DETAILS

Sections:  Total sections (No or n/a) Last section (No / Identification or n/a)

Contract issues: Interim payment advices, Final payment advice

Principal Agent issues: Interim payment certificates, Final payment certificate, Practical completion certificate/s and Final completion certificate/s
1.0 VARIABLE N/S CONSTRUCTION GUARANTEE

1.1 Where a variable N/S Construction Guarantee in terms of the Agreement has been selected this 1.0 with 3.0 to 13.0 shall apply. The Guarantor’s liability shall be limited to the diminishing amounts of the Guaranteed Sum as follows:

<table>
<thead>
<tr>
<th>GUARANTOR’S LIABILITY</th>
<th>PERIOD OF LIABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1 Maximum Guaranteed Sum (not exceeding 10.0% of the subcontract sum) in the amount of:</td>
<td>From and including the date of issue of this N/S Construction guarantee and up to and including the date of the interim payment advice certifying in excess of 50% of the subcontract sum</td>
</tr>
<tr>
<td>Amount in words:</td>
<td></td>
</tr>
</tbody>
</table>

| 1.1.2 Reducing to the Guaranteed Sum (not exceeding 6.0% of the subcontract sum) in the amount of: | From and including the date of aforesaid interim payment advice and up to and including the date of the only practical completion certificate where there are sections |
| Amount in words: | |

| 1.1.3 Reducing to the Guaranteed Sum (not exceeding 4.0% of the subcontract sum) in the amount of: | From and including the day after the date of the applicable practical completion certificate and up to and including the only or last final completion certificate |
| Amount in words: | |

| 1.1.4 Reducing to the Guaranteed Sum (not exceeding 2.0% of the subcontract sum) in the amount of: | From and including the date of the applicable final completion certificate and up to and including the date of the final payment advice where payment is due to the subcontractor, whereupon this N/S Construction Guarantee shall expire. Where the final payment advice reflects payment due to the Contractor, this N/S Construction guarantee shall expire upon payment of the full amount certified |
| Amount in words: | |

1.2 For avoidance of doubt the Guarantor’s liability limits set out in 1.1.1 to 1.1.4 shall apply in respect of any claim received by the Guarantor during the period in question.
2.0 **FIXED N/S CONSTRUCTION GUARANTEE**

2.1 Where a fixed N/S Construction Guarantee in terms of the Agreement has been selected this 2.0 with 3.0 to 13.0 shall apply. The Guarantor’s liability shall be limited to the amount of the Guaranteed Sum as follows:

<table>
<thead>
<tr>
<th>GUARANTOR’S LIABILITY</th>
<th>PERIOD OF LIABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1 5.0% of the subcontract sum in the amount of:</td>
<td>From and including the date of issue of this N/S Construction Guarantee and up to and including the date of the last practical completion certificate and up to and including the only practical completion certificate or last practical completion certificate where there are sections upon which this N/S Construction Guarantee shall expire.</td>
</tr>
</tbody>
</table>

Amount in words: 

3.0 The Guarantor hereby acknowledges that:

3.1 Any reference in this Guarantee to the Agreement is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship.

3.2 Its obligation under this Guarantee is restricted to the payment of money.

4.0 Subject to the Guarantor’s maximum liability referred to in 1.0 or 2.0, the Guarantor hereby undertakes to pay the Contractor the sum certified upon receipt of the documents identified in 4.1 to 4.3 below:

4.1 A copy of a first written demand issued by the Contractor to the Subcontractor stating that payment of a sum certified by the Contractor in an interim or final payment advice has not been made in terms of the Agreement and failing such payment within seven (7) calendar days, the Contractor intends to call upon the Guarantor to make payment in terms of 4.2.

4.2 A first written demand issued by the Contractor to the Guarantor at the Guarantor’s physical address with a copy to the Subcontractor stating that a period of seven (7) calendar days has elapsed since the first written demand in terms of 4.1 and that the sum certified has still not been paid therefore the Contractor calls up this N/S Construction guarantee and demands payment of the sum certified from the Guarantor.

4.3 A copy of the said payment advice which entitles the Contractor to receive payment in terms of the Agreement of the sum certified in 4.0.

5.0 Subject to the Guarantor’s maximum liability referred to in 1.0 or 2.0, the Guarantor undertakes to pay the Contractor the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Contractor to the Guarantor at the Guarantor’s physical address calling up this N/S Construction Guarantee stating that:

5.1 The Agreement has been cancelled due to the Subcontractor’s default and that the N/S Construction guarantee is called up in terms of 5.0. The demand shall enclose a copy of the notice of cancellation; or
5.2 A provisional sequestration or liquidation court order has been granted against the Subcontractor and that the N/S Construction guarantee is called up in terms of 5.0. The demand shall enclose a copy of the court order.

6.0 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4.0 and 5.0 shall not exceed the guarantor’s maximum liability in terms of 1.0 or 2.0.

7.0 Where the Guarantor is a registered insurer in terms of the Short-Term Insurance Act No 53 of 1998 and has made payment in terms of 5.0, the Contractor shall upon the date of issue of the final payment certificate submit an expense account to the Guarantor showing how all monies received in terms of the N/S Construction guarantee have been expended and shall refund to the guarantor any resulting surplus. All monies refunded to the guarantor in terms of this N/S Construction guarantee shall bear interest at the prime overdraft rate of the Contractor’s bank compounded monthly and calculated from the date payment was made by the guarantor to the Contractor until the date of refund.

8.0 Payment by the guarantor in terms of 4.0 or 5.0 shall be made within seven (7) calendar days upon receipt of the first written demand to the guarantor.

9.0 The Contractor shall have the absolute right to arrange his affairs with the Subcontractor in any manner which the Contractor deems fit and the Guarantor shall not have the right to claim his release from this N/S Construction Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

10.0 The Guarantor chooses the physical address as stated above for all purposes in connection herewith.

11.0 This N/S Construction Guarantee is neither negotiable nor transferable and shall expire in terms of either 1.1.4 or 2.1, or payment in full of the Guaranteed Sum or on the Guarantee expiry date, whichever is the earlier, where after no claims will be considered by the Guarantor. The original of this N/S Construction Guarantee shall be returned to the Guarantor after it has expired.

12.0 This N/S Construction Guarantee, with the required demand notices in terms of 4.0 or 5.0, shall be regarded as a liquid document for the purpose of obtaining a court order.

13.0 Where this Construction Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate’s Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate’s Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate’s Court.
T2.5.6 : FORM OF INTENT TO PROVIDE A PERFORMANCE GUARANTEE

The Tenderer must attach hereto a letter from the bank or institution with whom he has made the necessary arrangements, to the effect that the said bank or institution will be prepared to provide the required performance guarantee when asked to do so.
T2.5.7 : AUDITED FINANCIAL STATEMENTS FOR THE LAST THREE YEARS

Tenderers are to attach Audited Financial Statements for the last three financial years.
T2.5.8 : LETTER OF GOOD STANDING FROM TENDERERS BANKER

Letter to be provided by Tenderers banker regarding the tenders financial status.
T2.5.9 : SCHEDULE OF PROPOSED SUB-CONTRACTORS

In terms of Clause 4.4 of the Conditions of Contract for Construction, the Tenderer shall enter below the names of sub-contractors he intends to employ for work on this contract, as well as the portion and value of the work to be executed by such sub-contractors.

Based on the definition of SMME provided below the Tenderer should indicate in which category, i.e. Medium, Small, Very Small or Micro, the intended sub-contractor is categorized if applicable.

<table>
<thead>
<tr>
<th>DESCRIPTION OF PORTION OF WORK</th>
<th>APPROX. VALUE (EXCL. VAT)</th>
<th>NAME, ADDRESS AND TELEPHONE NUMBER OF SUB-CONTRACTOR/SMME</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

DATE: ___________________________ SIGNATURE OF TENDERER: ___________________________

(Authorised Person)
T2.5.10 : SCHEDULE OF EQUIPMENT OFFERED

NOTE: 1. This Schedule must be completed for all items offered. Failure to comply with this requirement may render the Tender invalid.

2. Information in amplification of that given below may be submitted in the form of a covering letter, published literature, etc.

3. Acceptance of a tender, with this schedule complete, does not relieve the Tenderer of the responsibility of complying with the Specification for the items listed.

1. COLLECTED AREA AIR CONDITIONING UNIT (AC2.1)

1.1 Air Handling Unit

i) Make .................................................................

ii) Model .................................................................

iii) Supply air Volume (m$^3$/s) .....................................

iv) Make and Model of supply fans ................................

v) Cooling Capacity (kW Total) .....................................

1.2 Outdoor VRF Units

i) Make .................................................................

ii) Model .................................................................

iii) Capacity:

    Cooling (kW) .....................................................

    Heating (kW) .....................................................

1.3 AC2.1 Control Panel

i) Manufacturer ........................................................

ii) Material of construction ...........................................

iii) Make and Model of Controller .................................

iv) Supply fans Variable Speed Drive Method ..................

v) VRF TX valve controls .............................................
1.4 Responsibilities

i) Party responsible for co-ordinating air handling unit and VRF interface _______

ii) Party responsible for commissioning VRF units ________________________________

iii) Warranty period of VRF compressors ________________________________

iv) Party responsible for commissioning AC2.1 controls ________________________________

2. DUCTING

2.1 Name of Manufacturer (Galvanised Sheetmetal) ______________________________

2.2 Material ______________________________

2.3 Insulation material ______________________________

2.4 Flexible ducting:

<table>
<thead>
<tr>
<th>Insulated</th>
<th>Uninsulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Make ______________________________</td>
<td>______________________________</td>
</tr>
<tr>
<td>ii) Model ______________________________</td>
<td>______________________________</td>
</tr>
</tbody>
</table>

9. FANS

3.1 Extract Fans (F2.1, F2.2 and F2.3)

i) Make ______________________________

ii) Model ______________________________

iii) Duty ______________________________ (/s) at ______________________________ Pa

iv) Motor class ______________________________

v) Fan speed (rpm) ______________________________

3.2 Evacuation Extract Fan (F2.4)

i) Make ______________________________

ii) Model ______________________________

iii) Duty ______________________________ (/s) at ______________________________ Pa

iv) Motor class ______________________________

v) Fan speed (rpm) ______________________________
3.3 **Extract Fan (F2.6)**

i) Make _____________________________________________________________

ii) Model __________________________________________________________

iii) Duty ________________ (l/s) at __________________________ Pa

iv) Motor class _____________________________________________________

v) Fan speed (rpm) ________________________________________________

3.4 **Extract Fan (F2.5)**

i) Make _____________________________________________________________

ii) Model __________________________________________________________

iii) Sound Attenuators ______________________________________________

4. **SOUND ATTENUATORS**

4.1 **Supply Air Sound Attenuator (SA2.1)**

i) Make _____________________________________________________________

ii) Model __________________________________________________________

iii) Length __________________________________________________________

5. **SUPPLY AIR DIFFUSERS (SA.1 TO SA.23)**

5.1 Make _____________________________________________________________

5.2 Model __________________________________________________________

5.3 Finish ___________________________________________________________

5.4 Method of fixing to ceiling __________________________________________

6. **EXHAUST GRILLES (EG2.1, EG2.2 and EG2.3)**

6.1 Make _____________________________________________________________

6.2 Model __________________________________________________________

6.3 Finish ___________________________________________________________
7. **WEATHER LOUVRES**

   **RA2.1**  
   **WL2.2 and WL2.3**

   7.1 Make ____________________________

   7.2 Model ____________________________

   7.3 Finish ____________________________

8. **FILTERS (PRIMARY)**

   8.1 Make ____________________________

   8.2 Type ____________________________

9. **BACKDRAUGHT SHUTTER (BS2.1)**

   9.1 Make ____________________________

   9.2 Model ____________________________

   9.3 Material of Construction ____________________________

10. **MOTORISED SHUT-OFF DAMPERS (SD2.1, SD2.2 AND SD2.3)**

    10.1 Make ____________________________

    10.2 Model ____________________________

    10.3 Material of Construction ____________________________

    10.4 Actuator:

    i) Make ____________________________

    ii) Model ____________________________

    iii) Voltage ____________________________

11. **EXTRACT VALVES (EV.1 to EV.4)**

    11.1 Make ____________________________

    11.2 Model ____________________________
12. **ELECTRICAL**

12.1 **HVAC Control Panel (for general HVAC equipment)**
   
i) Manufacturers Name ............................................................

   ii) Details of construction ........................................................

   iii) Make of Isolator ................................................................

   iv) Make of MCB’s ....................................................................

   v) Make of motor starters ............................................................

12.2 **Sundry Electrical Fittings (make and type)**

   i) Relays ................................................................................

   ii) Local Isolators:
       a) Weatherproof ................................................................
       b) Standard ........................................................................

   iii) Pilot lights ........................................................................

   iv) Cable Trays ........................................................................

   v) Conduit ................................................................................

13. **MIDWALL SPLIT AIR CONDITIONING UNIT (AC2.2)**

13.1 Make ..................................................................................

13.2 Model ..................................................................................

13.3 Cooling (kW) .......................................................................

13.4 Heating (kW) ......................................................................

13.5 Guarantee Unit (years) .........................................................

13.6 Guarantee Compressor (years) .............................................

13.7 Voltage ...............................................................................}

13.8 Inverter Type (Yes/No) ..........................................................
14. **BURGLAR BARS**

14.1 Manufacturer ____________________________________________

14.2 Material of Construction ___________________________________
T2.6 : OTHER FORMS, CERTIFICATES AND SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT

Page No.

T2.6.1 Record of Addenda to Tender Documents 85
T2.6.2 Schedule of Departures from Specification 86

Volume 2
T2.6.1 : RECORD OF ADDENDA TO TENDER DOCUMENTS

I/We confirm that the following communications amending the Tender documents, received from the Employer or his representative before the closing date of submission of this Tender offer, have been taken into account in this Tender offer.

<table>
<thead>
<tr>
<th>ADD NO.</th>
<th>DATE</th>
<th>TITLE OR DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

SIGNATURE: __________________________________________ DATE: ______________

(of Authorised Person)
T2.6.2 : SCHEDULE OF DEPARTURES FROM SPECIFICATION

<table>
<thead>
<tr>
<th>Part No</th>
<th>Reference</th>
<th>Clause No</th>
<th>Departure</th>
</tr>
</thead>
</table>

N.B. The Tenderer is required to give full details of any departure from the Specification and shall then sign this page officially. If there are no departures, the Tenderer must state NIL on this page and sign it. The Tender shall then be held to comply in all respect with the Specification.

Should there be insufficient space, the Tenderer may include separate sheets arranged in the same manner as above. Mere reference to a covering letter will not be regarded as compliance with this requirement.

DATE: _____________________ SIGNATURE: __________________________

(For The Tenderer)
# T3 : THE TENDER

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<th>Description</th>
<th>Page No.</th>
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<td>Conditions of Subcontract</td>
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</tr>
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</tr>
<tr>
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<td>Drawings</td>
<td>74</td>
</tr>
</tbody>
</table>
T3.1 : AGREEMENT AND CONTRACT DATA

T3.1.1 : CONDITIONS OF SUBCONTRACT

The Conditions of Subcontract are the JBCC Series 2000 N/S Subcontract Agreement (March 2005) published by the Joint Building Contracts Committee.

Copies of these conditions of contract may be obtained from the Association of South African Quantity Surveyors (011-3154140), Master Builders Association (011-205-9000; 057-3526269) South African Association of Consulting Engineers (011-4632022) or South African Institute of Architects (051-4474909; 011-4860684; 053-8312003;)

The JBCC N/S Subcontract Agreement makes several references to the Contract Variables for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Variables shall have precedence in the interpretation of any ambiguity or inconsistency between it and the JBCC N/S Subcontract Agreement.
T3.1.2 : MAIN CONTRACT PRELIMINARY & GENERAL INFORMATION

Refer to Annexure T3.4.2 for an extract from the Main Contract Bills
**T3.2 : PRICING DATA**

**T3.2.1 : SCHEDULE OF RATES**

The following Schedule of Rates is to be completed by the Tenderer and these Rates will be used in the case of settlement of additions or omissions arising from major variations to the contract.

The rates are to allow for the complete supply and installation of the items of equipment and materials listed, in terms of this Specification, and must also include for all indirect costs such as overheads, travelling, handling, profit, etc.

The Tenderer may, if he so wishes, submit two rates for each item – one rate for additions and one rate of omissions.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price for Addition or Omission</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAYWORK RATES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The following Items are for work not covered by rates in the Schedule of Variation Rates.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LABOUR RATES, NORMAL TIME, PER HOUR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artisan and Labourer</td>
<td>R...............................</td>
<td></td>
</tr>
<tr>
<td>Apprentice and Labourer</td>
<td>R...............................</td>
<td></td>
</tr>
<tr>
<td>Labourer</td>
<td>R...............................</td>
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</tr>
<tr>
<td>LABOUR RATES, NORMAL OVERTIME, PER HOUR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artisan and Labourer</td>
<td>R...............................</td>
<td></td>
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<tr>
<td>Apprentice and Labourer</td>
<td>R...............................</td>
<td></td>
</tr>
<tr>
<td>Labourer</td>
<td>R...............................</td>
<td></td>
</tr>
<tr>
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<td>Artisan and Labourer</td>
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<tr>
<td>Apprentice and Labourer</td>
<td>R...............................</td>
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<tr>
<td>Labourer</td>
<td>R...............................</td>
<td></td>
</tr>
</tbody>
</table>
MATERIALS
Percentage mark up on nett cost of materials ...........................................% 

TRANSPORT
Private car or light delivery vehicle .......................................................cents/km 
3 tonne truck ............................................................................cents/km 
5 tonne truck ............................................................................cents/km 
10 tonne truck .............................................................................cents/km 

DATE: ____________________      SIGNATURE: ______________________________
(For the Tenderer)
T3.2.2 : PRICE SUMMARY

The following Schedule of Prices must be completed by the Tenderer. The total price must include everything necessary to complete the installation in terms of the Specification and Drawings.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supply, delivery, installation, testing and commissioning of the following complete systems.</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td><strong>AIR CONDITIONING UNIT AC2.1</strong></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Indoor air handling unit to AC2.1 including filters</td>
<td>R……………</td>
</tr>
<tr>
<td>1.2</td>
<td>Outdoor VRF condensing units serving AC2.1</td>
<td>R……………</td>
</tr>
<tr>
<td>1.3</td>
<td>Complete refrigeration piping installation to AC2.1 including all cable trays, insulation, external covers, etc.</td>
<td>R……………</td>
</tr>
<tr>
<td>1.4</td>
<td>AC2.1 control panel including controls, MXD kits, etc.</td>
<td>R……………</td>
</tr>
<tr>
<td>1.5</td>
<td>Commissioning of AC2.1 System.</td>
<td>R……………</td>
</tr>
<tr>
<td></td>
<td><strong>Sub Total 1</strong></td>
<td>R……………</td>
</tr>
<tr>
<td>2.</td>
<td>Ducting installation to AC2.1 including flexible ducting and supply air diffusers.</td>
<td>R……………</td>
</tr>
<tr>
<td>3.</td>
<td>Sound Attenuator (S2.1)</td>
<td>R……………</td>
</tr>
<tr>
<td>4.</td>
<td>Extract Fans (F2.1, F2.2 and F2.3) including sheetmetal partition in masonry shafts.</td>
<td>R……………</td>
</tr>
<tr>
<td>5.</td>
<td>Extract Fan F2.4 including ducting sections.</td>
<td>R……………</td>
</tr>
<tr>
<td>6.</td>
<td><strong>Extract System F2.5</strong></td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Extract Fan F2.5 and sound attenuators</td>
<td>R……………</td>
</tr>
<tr>
<td>6.2</td>
<td>Ducting, grilles and flexible ducting</td>
<td>R……………</td>
</tr>
<tr>
<td></td>
<td><strong>Sub Total 6</strong></td>
<td>R……………</td>
</tr>
<tr>
<td>7.</td>
<td><strong>Extract System F2.6</strong></td>
<td></td>
</tr>
<tr>
<td>7.1</td>
<td>Extract Fan F2.6 and sound attenuators</td>
<td>R……………</td>
</tr>
<tr>
<td>7.2</td>
<td>Ducting to System F2.6</td>
<td>R……………</td>
</tr>
<tr>
<td></td>
<td><strong>Sub Total 7</strong></td>
<td>R……………</td>
</tr>
</tbody>
</table>
8. Backdraught shutter (BS2.1)  

9. Motorised shut-off dampers (SD2.1, SD2.2 and SD2.3) including actuators  

10. Extract grilles EG2.1, EG2.2 and EG2.3  

11. Weather louvers and burglar bars  
   11.1 WL2.2  
   11.2 WL2.3  
   11.3 RA2.1  
   11.4 Burglar Bars to WL2.2 and WL2.3  

Sub Total 11  

12. Air conditioning plantroom louvred doors blanking, filter and damper installation (PF1 to PF4)  

13. Hot dipped galvanised rectagrid grille over return air opening for System AC2.1  

14. Complete electrical installation including HVAC control panel, supplies to equipment, local isolators and controls  

15. Midwall split Unit (AC2.2) including piping brackets, etc.  

16. Twelve months maintenance  

17. Maintenance & Operating Manuals  

18. Provisional and General (P&G) Items not included above  

R……………………
19. Provisional Sums: R 420 000-00

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.1 Gas Monitoring System</td>
<td>R 150 000-00</td>
</tr>
<tr>
<td>19.2 BMS Installation</td>
<td>R 85 000-00</td>
</tr>
<tr>
<td>19.3 Wet Lab extract hood</td>
<td>R 65 000-00</td>
</tr>
<tr>
<td>19.4 HVAC to Main Building Lab</td>
<td>R 50 000-00</td>
</tr>
<tr>
<td>19.5 Specialist Electrical Work</td>
<td>R 70 000-00</td>
</tr>
</tbody>
</table>

TOTAL CARRIED FORWARD TO FORM OF TENDER (PART 2.1) R__________

NAME OF TENDERER: ____________________________________________

DATE: _______________  SIGNATURE: ____________________________
      (for the Tenderer)

TEL: _______________  FAX: _______________  CELL: _______________
T3.3 : SCOPE OF WORK

T3.3.1 DESCRIPTION OF THE WORKS

T3.3.1.1 PRELIMINARY AND GENERAL INFORMATION

1. PREAMBLE

This Part of the Tender Document deals with general requirements to be met and standards for plant and workmanship which shall be observed in the execution of the subcontract covered by this Tender Document. "Plant" is defined as machinery, apparatus, materials, articles and things of all kinds to be provided under the subcontract other than Construction Equipment.

When the requirements of this Part are at variance with any detailed requirement of any other Part hereof, or the Drawings, such other detailed requirements shall take precedence. All items of plant which are specified in this Tender Document or by nature of the installation are required, shall comply with this Part, unless stated otherwise elsewhere in this Tender Document. In the event of ambiguity the Engineer shall be asked for his clarification prior to submission of the Tender.

Any reference herein to "elsewhere in this Tender Document" shall be deemed to mean in any of the other Parts of this Tender Document or on the Drawings.

This Tender Document covers major items required for this installation but shall not limit the Subcontractor's responsibility to provide everything necessary to complete the subcontract. The works shall be carried out with best quality items of plant and to a high class of workmanship. All items of plant shall be the best of their respective kinds, and the subcontractor shall, upon request of the Engineer, furnish him with proof to his satisfaction that they so comply.

This Tender Document and accompanying Drawings are copyright and are the property of the Engineer and must be returned to him whether a bona-fide tender is submitted or not.

For the purposes of this Part of the Tender Document the term “Engineer” is used to describe the Agent, named elsewhere in this Tender Document, who will deal with the Subcontract Works covered by this Tender Document.

2. ALTERNATIVE OFFERS

Tenderers must tender in accordance with the Tender Document.

While Tenderers may offer alternative materials, makes of equipment, construction techniques, etc. which they believe will be advantageous, it is to be clearly understood that the main tender is to be in full compliance with this Tender Document. The total tender price entered on the Form of Tender, all prices entered in any Schedule of Quantities and the prices detailed in the Price Summary, must reflect the price to provide the plant and
everything which is or may be necessary for the completion of the Subcontract Works in complete accordance with this Tender Document, irrespective of any alternatives that may be offered.

Where alternative offers are submitted, these shall comply in principle with all requirements of this Tender Document. Tenderers should note that should any accepted alternative subsequently be found not to meet this condition, the Subcontractor will be liable for all costs incurred in making the necessary alterations.

Should tenderers wish to offer alternative makes and types of equipment to those specified herein, the alternatives are to be listed separately in detail, complete with make, type No., price etc, in the Schedule of Proposed Amendments and Qualifications, Part T2.3 of this Tender Document. In cases where a Schedule of Quantities is applicable, the alternative price for each noted item must be submitted.

The Engineer shall have the right to accept any or all of the alternative offers as he thinks appropriate and must give his written acceptance of these prior to orders being placed.

Failure to comply with the foregoing may result in the Subcontractor being compelled to meet the requirements of this Tender Document in full at the tendered price.

3. **SPARE PARTS**

Tenderers shall state in the Schedule of Equipment Offered, Part T 2.4, the names of the accredited South African Agents from whom spare parts for all items of plant offered are obtainable and the place nearest to the Works from which such spare parts are available. Submission of a tender will be construed as confirmation that spare parts for all equipment offered are readily available, and the subcontractor will be held responsible for any costs involved if this should prove to be otherwise.

4. **DELIVERY TIMES OF MANUFACTURED ITEMS**

The Tenderer shall, if required in the Schedule of Equipment Offered, state the times quoted by suppliers for both dispatch and delivery of major items of plant which may contribute to an extension of the time for completion.

The subcontractor shall, during the continuance of the subcontract, keep the Engineer well and sufficiently informed regarding the placing of all orders for materials and the progress of manufacture of any plant so as to ensure that no extension of the time for completion may be occasioned because of non-delivery of plant within the time specified for delivery of same. A delivery status report on each major item of plant shall be submitted by the 7th of every second month.

The subcontractor shall at all times remain fully and solely responsible for the timeous delivery to site of all plant, equipment and materials in terms of this subcontract.

5. **PACKING AND DELIVERY**

Plant shall be carefully packed and protected to avoid mechanical or other damage during transport and off-loading. The subcontractor will be held responsible for any damage occurring prior to its acceptance in writing by the Employer.
Every item of plant is to be clearly labelled with its description and with the subcontract number.

All consignments shall be addressed to the subcontractor on site and he/she shall make prior arrangements for receipt and storage upon arrival. The employer and/or contractor will not accept delivery of items of plant for the subcontractor unless the subcontractor has made prior arrangements to this effect with the contractor and/or the employer. The subcontractor will be required to make all arrangements for off-loading since no equipment for this will be available on site unless specifically stated to the contrary elsewhere herein.

6. LAYOUT OF INSTALLATION

The layouts shown on the Engineer's Drawings shall be strictly adhered to in principle, only alterations to suit specific plant being provided being acceptable. The Engineer's Drawings show general arrangements of layout but the subcontractor is required to prepare detailed Drawings of pipework, fabricated plant, machine and plant rooms, ductwork, switchboards, transformers, sub-stations, etc. The position of services detailed by the Engineer shall not be altered.

All architectural and structural dimensions shown on the drawings are approximate and must be verified by the subcontractor on Site. All measurements specially marked on the drawings in connection with engineering services shall be strictly adhered to.

If Tenderers require alterations to structure these must be described at the time of tendering. Minor structural alterations which may facilitate the work can be arranged with the Engineer and/or Principal Agent as the work progresses, but no claims will be entertained for alteration of any part of the subcontract works constructed before the necessary dimensions and details have been verified.

Before work on any particular section is commenced, the position of all control equipment and plant shall be approved by the Engineer.

7. DRAWINGS, CERTIFICATES AND OPERATING INSTRUCTIONS

7.1 Tenderers shall submit with their tender, outline drawings and pamphlets showing principal dimensions of the plant offered together with a general description of its operation.

7.2 In instances where, for any reason, the subcontractor is required to prepare and/or submit detailed drawings of any portion of the subcontract works, the subcontractor shall, within one month of the date of acceptance of the subcontract tender, or on such other date as may be agreed with the contractor and/or the Engineer to suit the contract programme, submit duplicate copies of such subcontractor's detailed drawings to the Engineer for approval. A further two copies of the finally approved drawings shall subsequently be supplied to the Engineer. The following drawings shall be submitted, as appropriate:

- General arrangement details of all items of plant.
- Schematic and wiring diagrams of all switchboards and control systems.
- Detailed layout drawings of all pipework, ducting, cable racking etc.
- Detailed layouts, sections and elevations of all plant rooms.
- Rating plate details of all plant including inter alia- max.: kW rating, speed, temperature limitations, no-load voltage, full load current, percentage impedance, etc.
- Cable termination arrangements of all transformers, motors etc.:
Detailed drawings of all plinths, foundations or bases.

Failure to comply with this requirement may result in the Engineer instructing the subcontractor to place the order for the specific item of plant with another Manufacturer. Where failure of the Contractor to ensure that the proposed Manufacturer complies with this requirement necessitates the above action being taken, no increase in price will be considered.

7.3 The subcontractor shall, within one month of acceptance of the subcontract tender, or on such other date as may be agreed with the contractor and/or the Engineer to suit the contract programme, submit triplicate copies of type test certificates issued by an authorised inspection authority or other approved testing agency in respect of all items of plant for which such certificates are required by the Engineer.

7.4 After completion of manufacture, all test certificates called for elsewhere in this Part shall be provided in duplicate.

7.5 Prior to the issue of the Practical Completion Certificate the following documents shall be provided, as appropriate, in duplicate, bound in a durable folder bearing the contract title and number:

- Test certificates relating to tests done after completion of the installation as called for elsewhere in this Part.
- Catalogue extracts of all major items of plant with performance curves marked to show operating duties.
- List of spare part numbers and local Agents for these parts.
- "As built" drawings, including layouts, sections, wiring and control diagrams and plant schematic diagrams. These are to show in detail the positions of poles, stays, cables, joints, sleeves, ducts, heating and cooling coils, dampers, pipes, control and regulating valves, air release valves, expansion joints, fixed equipment and all other pertinent items of plant. In the case of buried services, the route of such services and location of all cables, pipes, joints, valves, tees, access manholes, etc. are to be dimensioned relative to permanent and fixed objects, and the GPS coordinates must be provided. These drawings must depict the complete installation as finally commissioned.
- Detailed instruction manuals covering the operation, maintenance and servicing of each item of major plant provided under this subcontract and, where the complete plant has been supplied under this subcontract, the operation of the plant as a whole.
- In addition, one complete set of Engineer's Drawings clearly marked up to indicate all alterations made to the original drawings must be provided.
- The subcontractor shall note that the Practical Completion Certificate may be withheld until the above has been complied with.

8. **STANDARDS AND CODES OF PRACTICE**

The installation shall comply with the following and all amendments thereto, as appropriate:

The Occupational Health and Safety Act and Regulations
SABS 0142 Code of Practice for the Wiring or Premises, as appropriate (referred to herein as the Wiring Regulations).

The Post Office Act.

The SAIEE Code of Practice for Overhead Power Lines.

The Local Authorities: Standard Electricity Supply By-Law and appropriate Additional By-Law or Regulations.

Any further Specification, Regulation or Code of Practice stated elsewhere in this Specification.

All items of plant supplied and/or installed, whether expressly specified herein or not, shall conform in respect of quality, manufacture, tests and performance with the requirements of the appropriate South African National Standards (SANS) Specifications and addenda thereto, or, if no such Specification exists covering any one or more of these requirements, with the relevant requirements of the appropriate British Standard Specifications and addenda thereto, except where elsewhere required by this Specification or approved by the Engineer. Where the South African Bureau of Standards has issued a licence for the use of its Mark on products complying with any of its Specifications, only such products which carry the Mark shall be supplied.

Preference will be given to plant manufactured in South Africa.

9. WORKMANSHIP

All work shall be carried out by qualified artisans or registered apprentices or, only where appropriate, labourers, under the constant supervision of a qualified artisan. At no stage during the construction programme shall any work be carried out without adequately qualified and experienced installation personnel being on site. If the subcontractor fails to comply with this requirement, the Engineer has the right to instruct the subcontractor to suspend the subcontract work. All costs incurred in so doing shall be for the account of the subcontractor.

10. CO-ORDINATION OF SERVICES ON SITE

The subcontractor will be required to work in close co-operation with the contractor and other specialist direct contractors and subcontractors to ensure that no conflict arises between the various services, and to plan the progress of the various aspects of his work. It is imperative that such close liaison continues throughout the duration of the contract.

11. INTERRUPTION OF EXISTING SERVICES

No interruption of existing services will be permitted without the express permission of the contractor, and/or the Engineer and/or the Employer or his representative, given as a result of written notification by the subcontractor of the date, time and duration of such interruption. Any costs arising from the interruption of any service without such permission shall be for the subcontractor’s account.

12. BUILDER’S WORK
All builders’ work as detailed in other Parts of this Tender Document has been allowed for in the contract and must not be allowed for in this subcontract. The onus shall be on the subcontractor to ensure that all work carried out by the contractor in this respect, is to the subcontractor’s satisfaction.

The subcontractor shall notify the contractor prior to building work being commenced of the positions where holes, cuts and recesses will be required and shall ensure that each is correctly located and that heavy-gauge draw-wires are supplied and installed in all sleeves.

13. APPROVAL OF DRAWINGS

All Drawings, circuit or schematic diagrams prepared by or on behalf of the subcontractor for submission to the Engineer in terms of the requirements of this Tender Document shall have been thoroughly checked, corrected where necessary and signed as approved by the subcontractor, prior to such submission.

14. OPERATING, MAINTENANCE AND SERVICING PROCEDURES

The subcontractor shall, by agreement with the contractor and the Engineer, instruct the Employer’s appointed Representative in routine operating, maintenance and servicing procedures of all items of plant supplied under this subcontract, and shall ensure that the Employer or his/her Representative, fully understands the documents provided in terms of Clause 7.5 hereof.

15. MAINTENANCE

During the defects liability period, up until issue of the Final Completion Certificate, the subcontractor shall, in addition to attending to any lists of work to be completed which may be issued by the Engineer, carry out full maintenance and servicing operations specifically recommended by the suppliers of any item of plant used in the subcontract works to maintain it in full and correct operation. Such maintenance shall include all attention necessary to comply with the suppliers’ recommendations and shall include the provision of all necessary consumable items. The subcontractor will also be required to make any adjustments necessary during this period to ensure the satisfactory operation of the plant.

On completion of each such maintenance visit the subcontractor shall submit to the Engineer a schedule detailing the work done, which schedule shall have been countersigned by the Employer’s representative, whereupon a certificate will be issued for moneys due, in respect of the particular maintenance service, as included in the original tender price.

Notwithstanding any maintenance and servicing which may be carried out during the defects liability period, the subcontractor shall carry out a full maintenance and servicing operation at the end of the defects liability period and before the Final Completion Certificate will be issued.

Allowance for all costs in relation to the above must be made in the tender price. It shall be noted that the Engineer reserves the right to omit partly or wholly the prices submitted for the maintenance of the subcontract works, should the installation not be adequately maintained within the stipulated maintenance period.
The Employer may request the subcontractor to enter into a Service/Maintenance Agreement for the subcontractor to continue to maintain and service the subcontract works, or a portion thereof, beyond the date of issue of the Final Completion Certificate. The terms and duration of such an Agreement shall be subject to mutual agreement between the Employer and Subcontractor, and shall be concluded before the issue of the Final Completion Certificate.

Mutually agreeable conditions will be negotiated by the Engineer with the subcontractor should the subcontract works not be put into operation immediately on issue of the Practical Completion Certificate.
T3.3.1.2 GENERAL PARTICULARS

1. SCOPE AND TYPE OF CONTRACT

The Principal Contract, which is the Main Contractor’s responsibility, comprises the fit out of the existing First Floor of a new Wet Collection Facility adjacent to the existing facilities in Sommerset Street, Grahamstown for the South African Institute of Aquatic Biodiversity.

The Air Conditioning Contract which will form a Nominated Sub-Contract to the Principal Contract comprises the supply, delivery to site, off-loading, storage, installation, testing, commissioning and handing over in good working order, and twelve months guarantee and free maintenance, of all items of materials and workmanship as further specified in this Document and on the drawings.

Tenderers are to include for all things, whether necessary or specified, to complete the installation in a satisfactory and first class workmanlike manner. The installation is to comply with all the relevant regulations and shall be to the satisfaction of the Engineer.

2. CONDITIONS OF CONTRACT

The contract will be let as a Nominated Sub-contract to the Main Building Contract in terms of the JBCC Series 2000 (March 2005) Selected Sub-Contract Agreement and Additional General Conditions of Contract and Addendum.

The Tenderer's attention is drawn to Part T3.1.2, of this document which contains extracts from the Preliminary and General Information forming part of the Bills of Quantities for the Main Building Contract.

3. BUILDINGS

The Air Conditioning Contractor must fully acquaint himself with the type of materials, method of construction and finishes to be used prior to construction. No allowance will be made should difficulties arise during installation through lack of knowledge in this respect. A full set of Architectural and Structural drawings will be available at the offices of the Architect and Structural Engineer during the tendering period, and on site during construction and these shall be read in conjunction with the drawings covering the air conditioning installation.

4. ENGINEERS DRAWINGS

The Engineers Drawings pertaining to this installation are:

8599-A-01 – First Floor HVAC Layout
8599-A-02 – Ground Floor HVAC Plant and Sections
8599-A-03 – First Floor Collection Area Extract Systems

These drawings are sufficiently accurate for tendering purposes but all dimensions must be verified on site prior to manufacture. No extras will be considered where work has been proceeded with, without such prior verification or approval.
5. **CONTRACT PERIOD AND PROGRAMME OF WORK**

A detailed programme will be drawn up by the Principal Contractor and the sub-contractor shall comply with any reasonable programme laid down.

6. **CONTRACT PRICE ADJUSTMENT**

This contract will **NOT** be adjusted according to CPAP. Tender prices submitted will be fixed for the duration of the contract.

Fluctuations in the rate of foreign exchange and Government Duties/Taxes of imported items of equipment listed hereunder shall be accepted.

- VRF outdoor units, controls and associated imported items.

The successful HVAC Contractor, once appointed, shall provide quotations for Forward Cover on the relevant orders. Forward Cover will be purchased on written approval by the Engineer and shall be for the Client’s account.

7. **SERVICE BY OTHERS**

7.1 **Builder’s Work**

All building work associated with the Sub-Contract will be carried out by the Contractor and no allowance must be made for this item in the tender.

Generally, building work consists of the provision of plinths and bases for equipment, holes, sleeves, etc., through the structure, and the cutting and provision of holes or framed openings through brickwork, ceilings, etc.

The Sub-Contractor remains fully responsible for providing detailed drawings clearly indicating all building work requirements to the Contractor in good time, and for ensuring that the work is properly executed in accordance with his requirements.

8. **ELECTRICITY SUPPLY**

The supply will be taken at a nominal 400/231 volt, 50 Hz, 3 phase, 4 wire. All equipment shall be suitable for these conditions as applicable.

9. **SAMPLES OF MATERIAL AND WORKMANSHIP**

If called upon to do so, the Electrical Contractor shall submit samples of materials, equipment and installation methods to the Engineer for approval prior to their installation.

10. **LIAISON**

It is the Air Conditioning Contractors responsibility to liaise fully with the Principal Contractor and his respective Sub-Contractors on site so as to prevent clashes and to ensure that the contract is completed timeously.
11. **VALUE ADDED TAX**

The tender shall be inclusive of Value Added Tax as set out in the Price Summary.

12. **GUARANTEE AND MAINTENANCE**

The Air Conditioning Contractor will be required to guarantee the complete new installation and all equipment installed by him for a period of twelve months commencing from date of acceptance of the installation or portion thereof. He shall make good any defects in material and workmanship which may arise during this period.

13. **NAME BOARD**

It is the Principal Contractor's responsibility to supply and erect a project notice board which bears the names of the Sub-Contractors. No individual notice boards of Sub-Contractors will be allowed on site.

14. **BUDGETARY ALLOWANCE AND PROVISIONAL SUMS**

Tenderers must allow in the Tender Price for these items as detailed in the Price Summary.

The above amounts will be deducted in part or in whole to the extent that they are expended in accordance with the direction of the Engineer.

No amounts shall be expended without authority of the Engineer.

15. **QUALIFICATIONS OF PERSONNEL**

The supervision, testing and inspection of the entire installation shall be carried out only by competent personnel whose training has included instructions on the various types of protection and installation practice, relevant rules and regulations and the general principles of area classification. C.O.C.'s shall be issued on completion of the entire works and signed off only by personnel in possession of the appropriate licences.
T3.3.1.3  TECHNICAL SPECIFICATION APPLYING TO THIS INSTALLATION

1. GENERAL

This part of the Specification describes the main items of equipment, material and labour etc., which it will be the Air Conditioning/Ventilation Contractor’s responsibility to supply, install, test, commission and hand over in good working order and maintain for a period of 12 months.

2. DESIGN CONDITIONS

The Engineer’s design for the air conditioned areas has been based on the following Ambient Conditions, whilst maintaining the specified Internal Conditions.

Ambient Temperature  - Summer : 32°C Dry Bulb
                     : 21°C Wet Bulb
                     - Winter : 3°C Dry Bulb

Internal Areas (Collection Area) - Summer : 18°C Dry Bulb ± 1,5°C

Air Cooled Condensers shall be selected for 35°C Dry Bulb entering temperature.

3. NOISE AND VIBRATION

Noise levels caused by the operation of the air conditioning/ventilation equipment shall not exceed 60 dBA when measured at a distance of 1,5m from any grille or diffuser.

Emergency extract fan F2.4 is unattenuated and the above noise level does not apply to this fan.

Sound attenuators are indicated on all ducting layout drawings (where applicable) and must be included in the tender.

All equipment shall, in any event, be selected for the quietest possible operation.

No transmission of vibration to the structure, or elsewhere, caused by the operation of the air conditioning or ventilation equipment, will be permitted. All sound absorbing and/or anti-vibration materials or devices as are necessary to ensure a satisfactory degree of silence and absence of the transfer of vibration to the structure shall be included in the tender price.

All fans shall only be connected to ducting etc., by means of flexible duct connectors, having a width of at least 100mm, which can be renewed as necessary.

4. PLANT DUTIES

The duties of all plant and equipment are indicated on the drawings. No plant shall have a capacity of less than that indicated.
Tenderers shall note that fan pressures and pump heads, where indicated, are given for tendering purposes only, and selections shall be made to suit the losses of the system and the particular equipment offered.

5. **COLLECTION AREA AIR CONDITIONING UNITS (AC 2.1)**

Air conditioning unit AC 2.1 shall be a ‘hybrid’ type system consisting of a vertical discharge indoor air handling unit incorporating a DX cooling coil and matched with a set of suitably selected VRF outdoor units.

The indoor air handling unit shall be Air Options Modair series incorporating variable speed EC motor plug supply air fans. Fans shall be provided with fan guards and inlet screens. Cooling coil shall be copper tube with aluminium fins in a stainless steel frame. Filter frames shall be stainless steel.

Condensate drip tray shall be constructed of 1.2mm stainless steel and shall be at least 50mm deep.

The VRF outdoor units shall be Daikin, Mitsubishi or Samsung.

Each outdoor unit shall be an ‘inverter’ type thus enabling variable capacity (refrigerant volume flow) to suit the instantaneous capacities of the indoor units. Outdoor units shall be air cooled, with vertical discharge. Coils shall be standard Copper coils with Aluminium fins.

Outdoor units shall be fixed to hot dipped galvanised steel channels placed on top of the concrete plinths as indicated on the drawings. All steel equipment supports shall be provided by the HVAC Contractor.

All refrigerant piping shall be Refrigerant and Air Conditioning grade copper tubing, annealed coils up to 19.05mm and hard drawn straight lengths for 22.33mm and larger. All tubes are to be thoroughly degreased, nitrogen filled and tube ends capped during installation to prevent ingress of moisture and dirt.

Wall thickness shall be selected for R410A refrigerant design pressure of 5.8 MPa.

All joints and fittings shall be made strictly in accordance with the manufacturer’s instructions. All parts shall be carefully cleaned before jointing. Nitrogen shall be passed through pipes while soldering work is carried out.

Tenders shall note that the Engineer reserves the right to request that two refrigerant pipe joints be cut out and inspected by others to verify that the above has been complied with.

Before charging with refrigerant the system shall be purged of air and a vacuum held for 24 hour to ensure moisture removal. Equipment manufacturer’s instructions and normal industry standards shall be adhered to at all times.

All joints (for branches) shall be as supplied by the VRF System supplier. Joint insulation shall be pre-formed, obtained from the joint supplier. ‘Refnet’ joint insulation shall be neatly connected and glued onto the insulation material of the adjacent refrigerant piping, using a glue of adequate strength.
The HVAC Contractor shall certify in writing that all refrigerant piping installed meets with the technical specification and recommendations of the air conditioning equipment manufacturer. Piping shall be inspected by the Air Conditioning unit manufacturer’s representative for approval.

The refrigerant pipe circuits (before connection to the outdoor units) are to be pressurized to 4MPa and left to stand for 24 hours. The circuits shall be considered satisfactory if during this time the pressure does not become reduced.

Refrigerant pipes shall be insulated with convectional closed cell neoprene rubber sheathes, minimum 10mm thick. Cut ends shall be glued together. All gas pipes and liquid pipes shall be individually insulated.

All piping shall run in cable tray, Cabstrut Medium Duty or equal, of galvanised perforated plate construction. Sizes shall be selected to suit the refrigerant piping.

Piping shall be fixed to the cable tray by means of cable ties with a section of galvanised sheetmetal wrapped around the pipe to prevent over tightening of the cable tie.

Uninsulated copper piping shall not touch any galvanised surfaces e.g. cable tray etc. PVC or rubber spaces shall be provided.

Pipework exposed outdoors shall be provided with galvanised steel covers to prevent deterioration of the insulation by exposure to the sun.

The control panel forming part of the AC2.1 system shall be manufactured by the air handling unit manufacturer who shall take full responsibility for the integration of the AC2.1 system including VRF components with cooling coil functioning.

The VRF outdoor unit suppliers shall inspect the completed installation and commission the VRF units on site. Written confirmation from the VRF supplier after site commissioning shall be submitted to the Engineer.

The AC2.1 control panel and controls shall include the following:

- Main Isolator (Essential Power)
- AC 2.1 supply air fans control
- VRF TX value controls
- Programmable digital controller
- Gas detection system interface
- Interface to switch system OFF if Collection Area goes into evacuation mode
- Auto restart after power failure
- ON/OFF Auto switch. On Auto the system must accept a signal from the BMS system for ON/OFF switching.
- BMS interface of:
  - Return air temperature
  - Fan ON/OFF status
  - Filter dirty alarm
  - Air flow status
  - Trip alarm.
- Pilot lights for Power On (yellow), Fans run (green) and fans trip (red).
The control panel shall be metal construction and painted orange.

Each item of equipment in the panel, or projecting through the door is to be labelled, indicating its function, by means of engraved plastic labels, screwed or pop riveted in position.

All wiring and cables shall be clearly labelled using proprietary cable labelling systems.

A wiring diagram of the control panel is to be provided and fixed to the inside of the door. All terminals are to be numbered on the diagram.

The unit shall be set to operate at a room temperature of 18°C.

The unit shall be required to operate 24 hours per day throughout the year.

Heating is not required.

The indoor unit shall utilize the plant room as a return air plenum.

The Air Conditioning Contractor shall provide all refrigerant piping and condensate drain piping to the extent indicated on the drawings.

Drains shall be provided with suitable P traps.

The Air Conditioning Contractor shall supply and install a weatherproof lockable isolator adjacent to the outdoor VRF condensing units and a power supply to the indoor unit control panel as well as the interconnection cables to the HVAC Control Panel located in the Ground Floor plant room as indicated on the drawings. Interconnecting cables shall be PVCAS.

6. **DUCTING**

6.1 **Galvanised Sheet Metal Ducting (Rectangular)**

All ducting shall comply with SABS 1238, as amended. All ducting dimensions are sheet metal sizes. For ease of installation, ducting may be jointed by means of the “Mezventlock System” or approved equal system.

Ducting metal thicknesses, joint spacing, stiffeners, hanger spacing and hanger types shall be as per the SARACCA 5 Category Classification. A copy of the SARACCA classification can be found as Clause 23 of this specification.

Flexible connections are to be provided on all ducts where they connect to the respective fans.

6.2 **Duct Insulation**

Air conditioning supply and return air ducting shall be externally insulated as indicated on the drawings.

External insulation shall be two layers of Alucushion 1983 (Foil/Foil) securely fixed to the metal surface. Straps shall be provided at 1m centres to all ducts.

All fresh air supply ducting and extract ducting shall not be insulated.
6.3 **Flexible ducting**

Flexible ducting supplying or returning conditioned air shall be similar or approved equal to Systemair Alu-Flex thermally insulated ducting.

Flexible fresh air supply and extract ducting shall be uninsulated Systemair Alu-Flex or equal.

Flexible ducting shall comply with local fire codes, and SABS 0400 fire resistance requirements.

Flexible ducting connected to diffusers shall not exceed 1,5m in length.

Flexible ducting shall be of the maximum possible radius without flattening the duct and shall be supported with galvanised sheetmetal straps, sufficient in number to ensure distortion of the ducting does not occur.

Flexible ducting shall be fixed to spigots using the manufacturer’s recommended clamps and ends sealed by means of duct tape.

6.4 **Duct Supports**

Tenderers shall allow in their tender for all duct supports. Generally ducting supports shall be as per Clause 23 (SARACCA Classification).

All steel supports shall be galvanised.

Ducting shall be supported from the timber trusses. **No drilling of timber members shall be permitted.** Hangers shall be clamped to support members placed over the truss tie beams by the HVAC Contractor.

7. **SUPPLY AIR DIFFUSERS (SA.1 TO SA.23)**

Constant volume ceiling diffusers shall be similar or approved equal to the Rickard CRD circular diffuser. The diffusers shall be provided with tee-rings for fitting into a skimmed ceiling.

8. **EXTRACT AIR GRILLES (EG2.1 TO ED2.3)**

Exhaust and grilles shall be Trox fixed bladed RA type.

9. **WEATHER LOUVRES (RA2.1, WL2.2 and WL.2.3)**

Weather louvers shall be Trox AWK or AWG as per schedule or approved equal. All louvers shall include PVC mesh screens.

10. **FILTERS**
Filters shall be of the washable, moulded cartridge, replacement type, having a depth of at least 50mm. The filter media shall have an average efficiency of 25 - 30% on ASHRAE Test Standard 52 - 76. The filter media enclosing frame shall be of corrosion resistant material.

The filters shall be fitted into stainless steel frames and suitable material such as sponge rubber shall be fixed to the frame so as to form an efficient seal between the filter frame and the holding frame. The filter frames must be so designed that they are capable of housing any other manufacturer’s filters of the same type and dimensions, without modification.

11. **FANS**

11.1 **Plate Mounted Axial Fans** (F2.1, F2.2 and F2.3)

Plate mounted axial fans shall comprise manually adjustable pitch bladed impellers mounted directly onto the motors. Impeller blades shall be of aerofoil section manufactured from aluminium or glass reinforced polypropylene. Bell mouth mounting plates shall be glass fibre and fixing arms shall include anti-vibration mountings as standard.

Fans shall include motor side guards.

**Motors shall be Class 1 Division 1 Flameproof**

11.2 **Cased Axial Fans** (F2.4, and F2.6)

Cased axial fans shall incorporate manually adjustable pitch aluminium or glass polypropylene bladed impellers and hot dipped galvanised casing.

**Motors shall be Class 1 Division 1 Flameproof**

11.3 **Toilet Extract Fan** (F2.5)

The toilet extract fan shall be an S & P SILENT Series in-line duct fan complete with upstream and downstream sound attenuators.

12. **BACK DRAUGHT SHUTTER (MANUAL)** (BS2.1)

The two gravity operated backdraught shutters shall be Trox UL or approved equal. The shutter shall be manufactured from a galvanised steel angle fame and aluminium blades.

13. **MOTORISED SHUT-OFF DAMPERS** (SD2.1, SD2.2 AND SD2.3)

The three emergency ventilation replacement air intakes shall be provided with motorised shut-off dampers as indicated on the drawings.

The dampers shall be Trox JNL type or approved equal.

To improve the sealing the dampers shall be provided with side sealers.

Actuator motors shall be 24 volt, drive to open and spring return.
14. **EXTRACT VALVES (EV.1 AND EV.4)**

Extract valves shall be Trox LVS suitable for extraction.

15. **BURGLAR BARS**

Burglar bars shall be hot dipped galvanised after manufacture. The burglar bars shall be manufactured with 40mm x 5mm thick flat bar frame and 10 dia bars at 150mm centres.

16. **ELECTRICAL**

The electrical supply will be 400/231 volts, 3 phase, 4 wire, 50 Hertz and all equipment supplied under this contract shall be suitable for this supply.

The Air Conditioning Contractor shall supply and install a HVAC Control Panel to be mounted in the Plant Room as indicated on the drawings. (This control panel is in addition to the AC2.1 control panel).

The control panel shall consist of two cubicles, one painted red for essential supply and one painted orange for normal supply.

A three phase power supply to each incoming main isolator shall be provided by the Electrical Contractor.
The following equipment shall be served by the HVAC Control Panel:

- **Essential Supply**
  - Air Conditioning Unit (AC2.1) indoor supply air fans and controls (ie. AC2.1 control panel).
  - Emergency evacuation extract fan F2.4.
  - Normal extract fans F2.1, F2.2 and F2.3
  - Control circuit.
  - Shut-off dampers SD2.1, SD2.2 and SD2.3.

- **Normal Supply**
  - Air Conditioning Unit (AC2.1) outdoor condensing units (Cooling function).

All electrical work beyond the above connection/supply point including the incoming main isolator, control panel complete with internal wiring, local isolators, interconnections between the control panel and equipment, cables, cable trays and conduits, etc., required for the completion of the Air Conditioning Installation shall form part of the tender price.

The following work is, however, not to be included in item 14 of the Price Summary. A Provisional Sum has been allowed for this work which will be performed by a specialist Electrical Contractor.

- Cable tray, cables, flameproof isolators and final connections to:
  - Extract Fans F2.1, F2.2 and F2.3
  - Extract Fan F2.4
  - Damper actuators (SD2.1, SD2.2 and SD2.3).

The fan starters, overloads, controls etc. to be mounted in the HVAC Control Panel must be included in Item 14 of the Price Summary.

For tendering purposes the fault level shall be taken as 5kA. However, this must be confirmed before any equipment is ordered.

The HVAC control panel doors shall be lockable and a sturdy pad lock shall be provided to each cubicle.

Each item of equipment in the panel, or projecting through the door is to be labelled, indicating its function, by means of engraved plastic labels, screwed or pop riveted in position.

All wiring and cables shall be clearly labelled using proprietary cable labelling systems.

A wiring diagram of the control panel is to be provided and fixed to the inside of the door.

All terminals are to be numbered on the diagram.

The control panel shall be of metal construction, painted orange (normal) and red (essential).

The following shall be mounted on the face of the HVAC control panel cubicle doors.

i) Run (green) and Trip (red) pilot lights for each fan.
17. **CONTROLS**

All air conditioning / ventilation equipment (except fans F2.5 and F2.6 and AC2.2) shall be controlled from the HVAC control panel.

The Air Conditioning Contractor shall supply and install a digital controller in the HVAC control panel. The controller shall perform the following functions:

i) Under 'normal' operation, air conditioning unit AC2.1 and extract fans F2.1, F2.2 and F2.3 are to operate together 24 hours per day.

ii) On receiving a signal from a gas monitoring system (by others), air conditioning unit AC2.1 and extract fans F2.1, F2.2 and F2.3 are to shut down.

iii) After AC2.1, F2.1, F2.2 and F2.3 have shut down, open shut-off dampers SD2.1, SD2.2 and SD2.3.

iv) After a 2 minute delay (to allow the dampers to open) switch on evacuation fan F2.4.

v) On receiving a cancel signal from the monitoring system, switch off fan F2.4, close dampers SD2.1, SD2.2 and SD2.3 and start AC2.1 as well as extract fans F2.1, F2.2 and F2.3.

An air flow switch must be provided, by the Air Conditioning Contractor, in the supply air duct of AC2.1 for remote monitoring by the BMS (by others).

18. **SUPPORTS**

Tenderers must allow for all supports required for the Air Conditioning / Ventilation installation.

All supports shall be hot dipped galvanised after manufacture and drilling.

19. **SPLIT TYPE AIR CONDITIONING UNITS**

19.1 **General**

Tenderers may offer only the following makes of air conditioning units for tendering purposes. Other makes may be submitted only as an Alternative to the Main Offer.
Carrier
Daikin
Dunham Bush
Fujitsu General
Hitachi
LG
Midea
Mitsubishi
McQuay
Panasonic
Samsung
Trane
York.

All air conditioning units shall be of the inverter type with capacities as indicated on the drawings.

Refrigerant shall be R410A. R22 refrigerant equipment shall not be accepted.

19.2 Installation

The HVAC Contractor shall provide all refrigerant piping and condensate drain piping to the extent indicated on the drawings.

Manufacturer’s installation instructions shall be strictly adhered to.

Oil traps shall be provided in vertical refrigerant pipe rises at 5m intervals.

Refrigerant piping and cables run inside vertical shafts, roof voids and above ceilings shall be supported on galvanised cable trays. Refrigerant piping exposed to the weather shall be concealed in neatly run galvanised trunking.

Condensate drains, where run above ceilings, shall be thermally insulated with Thermoflex or equal. Suitably sized P traps shall be provided on all condensate drains.

Condensing units shall be fixed to galvanised steel support brackets securely fixed to the walls as indicated on the drawings. Rubber pads shall be provided at all fixing points of the outdoor units to the support bracket.

A weatherproof lockable isolator will be provided adjacent to all outdoor condensing units by the Electrical Contractor. It will be the responsibility of the Air Conditioning Contractor to provide all wiring from the isolator to the condensing unit and between the condensing and room unit. Wiring shall be BLACK SURFEX or approved equal.

Wired remote controllers shall be fixed in the position indicated on the drawings. The Electrical Contractor will provide a 100 x 50 knock-out box and a 20 ø conduit into the ceiling space. The interconnecting control wire shall be drawn through the provided conduit.

19.3 Labels

Each indoor split air conditioning unit shall be provided with an engraved plastic label indicating the number of the unit. Each condensing unit shall be provided with a matching engraved plastic label pop riveted to the unit casing.

19.4 Unit Operating Instructions
The Air Condition Contractor shall submit to the Engineer all the Operating Instruction booklets supplied by the Manufacturer for each and every air conditioning unit supplied and installed under this contract.

19.5 **Wireless Controllers**

Wireless controllers shall be handed to the Client’s Representative and a signed receipt obtained. A copy of the signed receipt is to be submitted to the Engineer.

20. **OPERATING AND MAINTENANCE MANUALS**

20.1 **General**

Two copies of the manuals described in this section shall be handed over as part of the final handover procedures. As far as possible all documents shall be the original issued by suppliers etc. Two paper copies of all as built drawings shall be included. Each volume shall be separately bound and clearly labelled.

20.2 **Manual Content**

<table>
<thead>
<tr>
<th>SECTION</th>
<th>DETAILS TO BE INCLUDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Conditioning System</td>
<td>Complete description of the air conditioning system.</td>
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<tr>
<td>Guarantee / warrantee</td>
<td>Summary schedule of guarantee/warrantees comprising description, start date, duration and completion dates.</td>
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<tr>
<td>Guarantee / warrantee</td>
<td>All guarantee and/or warrantee certificates</td>
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<tr>
<td>Suppliers Literature</td>
<td>Original copies of supplies literature / catalogues</td>
</tr>
<tr>
<td>Operating Manuals</td>
<td>Complete system operating Manual</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Complete maintenance schedule</td>
</tr>
<tr>
<td>Commissioning Data</td>
<td>All commissioning data and test certificates</td>
</tr>
<tr>
<td>Spare Parts</td>
<td>Schedule of recommended spare parts and schedule of suppliers</td>
</tr>
<tr>
<td>As Built Drawings</td>
<td></td>
</tr>
</tbody>
</table>

21. **EQUIPMENT LABELS**

All equipment shall be provided with labels as per the Equipment Schedule.

AC2.1 indoor unit shall be provided with an engraved plastic label ± 80mm x 40mm.

All other equipment shall be provided with printed sticker labels.

Air conditioning indoor and outdoor units shall be labelled as per specification Clause 19.3

22. **TESTING**
The entire installation shall be tested by the Air Conditioning / Ventilation Contractor at his expense, in the presence of the Engineer.
### SARACCA CLASSIFICATION

**SARACCA**

**REVISED LOW PRESSURE DUCT METAL THICKNESS**

CLASSIFICATION : POSITIVE PRESSURE : 500PA

NEGATIVE PRESSURE : 500PA

VELOCITY : 10M/S

<table>
<thead>
<tr>
<th>Category</th>
<th>Longest Side L/S mm</th>
<th>Semi Perimeter</th>
<th>Minimum Thickness</th>
<th>Maximum Spacing between Joint Mm</th>
<th>Maximum spacing between Stiffner Mm</th>
<th>Joint Type</th>
<th>Type of Intermediate Stiffner</th>
<th>Maximum Spacing between Hangers mm</th>
<th>Hanger Rod Dia mm</th>
<th>Hanger Angle mm</th>
<th>Measured Sheet Metal Mass Kg/m²</th>
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<tr>
<td>2</td>
<td>Up to 750</td>
<td>&gt; 1150</td>
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<td>2400</td>
<td>Note 2</td>
<td>Slip on flange</td>
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<td>40 x 2</td>
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<td>3</td>
<td>751 to 1350</td>
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<td>0.8</td>
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<td>1500</td>
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<td>1500</td>
<td>1500</td>
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<td>Angle ms Flange or Mezz Flange and Tie Rods</td>
<td>Note 3</td>
<td>10</td>
<td>40 x 6</td>
<td>9.75</td>
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</tbody>
</table>

**Notes**

1. Sheet Stiffening
   - Either cross breaking, beading or pleating of longest side to be applied on all ducting where duct dimension is over 550mm
2. Slide on flanges
   - Up to 1350mm – 25mm flange, 1351 – 2100mm 35mm Flange > 2100mm 35mm Flange, and tie rod or mild steel 40 x 40 angle
3. Stiffner
   - Inverted V strip or equal stiffner fixed on duct side to prevent panels vibrating and sagging (Tie Rods where necessary to prevent drumming, vibration and sagging)
T3.3.2 : HEALTH AND SAFETY SPECIFICATIONS

In addition to the Standardized and Project Specifications the following Particular Specifications shall apply to this contract and are bound in hereafter.

1. INTERPRETATIONS

Occupational Health and Safety Act, Act 85 of 1993 shall apply to this Contract. The Construction Regulations promulgated on 7 February 2014 published in Government Gazette 37305 apply to any person involved in construction work. These regulations are hereinafter referred to as “the Construction Regulations” and the said Act as “the Act”.

PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

1. SCOPE

This health and safety specification in respect of the Alterations and Additions to the South African Institute for Aquatic Biodiversity Lab:

- Provides the overarching framework within which the Principal Contractor is required to demonstrate compliance with certain requirements for occupational health and safety established by the Occupational Health and Safety Act 85 of 1993 during construction for the Alterations and Additions of SAIAB Lab;
- Establishes the manner in which the Principal Contractor is to manage the risk of health and safety incidents during construction; and
- Establishes the manner in which the Client’s Health and Safety Agent will interact with the Principal Contractor and Sub – Contractors.

This specification establishes general requirements to enable the Principal Contractor to satisfy aspects of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Construction Regulations, 2014. The Principal Contractor is required to develop, implement and maintain a site specific health and safety plan. The Client is required to provide certain site specific information to the Principal Contractor or a health and safety specification for the works to enable such a plan to be formulated. Accordingly, this specification on its own cannot ensure compliance with the requirements of the aforementioned Act.

The Construction Regulations, 2014, require a Client to stop any contractor from executing construction work which is not in accordance with the contractor’s health and safety plan for the site or which poses to be a threat to the health and safety of persons.

The South African Council for the Project and Construction Management Professions has established the following specified categories of registration in terms of the Project and Construction Management Professions Act of 2000 (Act No. 48 of 2000):

- A Construction Health and Safety Agent who may be appointed by the Client to act as his agent in terms of the Occupational Health and Safety Act of 1993 and the Construction Regulations issued in terms of that Act;
- A Construction Health and Safety Manager who may be appointed by the Client to complement his professional team or by a contractor to manage company or project health and safety performance and compliance in accordance with the Occupational Health and Safety Act and Regulations; and
A Construction Health and Safety Officers who may be appointed by an employer to mitigate the risk on a project or by a contractor to monitor and assist on-site health and safety performance and compliance in accordance with the Occupational Health and Safety Act and Regulations and services.
2. DEFINITIONS

As per the Occupational Health and Safety Act (85 of 1993) and the relevant regulations and applicable standards.

Client: South African Institute of Aquatic Biodiversity

LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tr>
<td>AIA</td>
<td>Approved Inspection Authority</td>
</tr>
<tr>
<td>BOQ</td>
<td>Bill of Quantities</td>
</tr>
<tr>
<td>CC</td>
<td>Compensation Commissioner</td>
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<tr>
<td>CHS</td>
<td>Construction Health and Safety</td>
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<td>Construction Health and Safety Agent</td>
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<tr>
<td>CHSO</td>
<td>Construction Health and Safety Officer</td>
</tr>
<tr>
<td>CR</td>
<td>Construction Regulations (Gazette 10113 of 07/02/2014)</td>
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<tr>
<td>DMR</td>
<td>Driven Machinery Regulations</td>
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<td>DoL</td>
<td>Department of Labour</td>
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<td>FEMA</td>
<td>Federated Employers Mutual Association</td>
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<td>General Administration Regulations</td>
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<td>General Safety Regulations</td>
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<td>OHSS</td>
<td>Occupational Health and Safety Specification</td>
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<td>Principal Agent</td>
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<td>Project Specific Health and Safety Specification</td>
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<td>Principal Contractor</td>
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<td>PPE</td>
<td>Personal Protective Equipment</td>
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<td>SANS</td>
<td>South African National Standards (Authority)</td>
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<td>Safety Data Sheet</td>
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<td>Small, Micro, Medium Enterprise</td>
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<tr>
<td>SWP</td>
<td>Safe Work Procedure</td>
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</table>

KEY REFERENCES

Occupational Health and Safety Act No. 85 of 1993 and Regulations (as amended)
Construction Regulations 2014.
Compensation for Injury and Occupational Diseases Act No. 100 of 1993 (as amended)
SANS Code 10400.

3. INTERPRETATION

3.1 The Act and its associated regulations shall have precedence in the interpretation of any ambiguity or inconsistency between it and this specification.

3.2 Compliance with the requirements of this specification does not necessarily result in compliance with the provisions of the Act.
4. Purpose of the Project Specific Health and Safety Specification (PSHSS)

The PSHSS is a performance specification to ensure that the Client and any bodies that enter into formal agreements with the Client / Agents, Professional Service Consultants (Engineers, Quantity Surveyors and Architects), Principal Contractors and Contractors achieve an acceptable level of OHS performance. No advice, approval of any document required by the PSHSS, such as hazard identification and risk assessments, or any other form of communication from the Client shall be construed as acceptance by the Client of any obligation that absolves the Principal Contractor from achieving the required level of performance and compliance with legal requirements. Furthermore, there is no acceptance of liability by the Client, which may result from the Principal Contractor failing to comply with the PSHSS, i.e. the Principal Contractor remains responsible for achieving the required performance levels.

A Mandatory Agreement in terms of Section 37.2 of the OHSA will be signed between parties prior to any works commencing.

The PSHSS highlights the aspects to be implemented over and above the minimum requirements of current legislation. Requirements may be changed should new risks or issues are identified that could not have been foreseen during the design phase of the project, or during the construction phase. Any new legislation or standards (legislated, or determined by the Client) that are promulgated or accepted during the contract will automatically be applied.

It should be noted that this OHSS in no way relieves the Contractor of any of his responsibilities set out in the Act and Regulations.

4.1 Implementation of the Project Specific Occupational Health and Safety Specifications (PSHSS)

The project specific H&S specification (PSHSS) forms an integral part of the Contract, and PCs are required to make it an integral part of their Contracts with Contractors and Suppliers. A PSHSS will be available for each level of Contract and Contractor, and must be complied with.

This specification must be read in conjunction with the OHSA, Regulations (as amended) and any other standards relating to work being done, and ensure compliance thereto. The information relative to the scope of the project, the works etc. are detailed in the tender, are to be considered when developing the H&S plan and associated documentation.

The OHSA S.37.2 Mandatory Agreement must be fully completed by the PC, supplied by the Client. These documents shall be deemed to form part of the returnable Contract Documents.

No work may commence without written approval of the H&S plan by the CHS Agent, or the responsible person at SAIAB.

Should there be design changes, or change in the scope of works, an amended PSHSS may be issued. Where amended PSHSSs are issued, the PC will be required to ensure a resubmission of an amended H&S plan for approval. Further to this, the PC must ensure that similar information must be provided as it applies to the works to all their Contractors, within 5 working days following notification thereof. Such design changes.

The CHS Agent will visit the project as deemed necessary by the Designer and the CHS Agent to ensure compliance and limit risk. All activities on the site and all appropriate documentation will be monitored and reported on to the Client and the Designer.

Non-conformances will be issued and penalties or work stoppage will be issued where appropriate. Communication between the CHS Agent and the PC will be through the Designer (or Client's responsible person) as determined at the commencement of the project.
4.2 **Requirements**

A project specific H&S Plan in response to this PSHSS will be subject to approval by the CHS Agent. This must include all supporting documentation as required to verify the H&S system:

- A declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Occupational Health and Safety Act and its Regulations;
- A valid Letter of Good Standing;
- Incident Investigation Reports for other projects of a similar nature undertaken by the tenderer;
- Claims ratio receipt from FEM or the Compensation Commissioner for the previous review period;
- Detailed technical method statements for approval by the Designer and appropriate risk assessments and safe work procedures for approval by the CHS Agent or Client:
  o Site establishment including:
    - Security Clearance and inductions.
    - Offloading of containers and equipment.
    - Exposure of services, power, telecommunication etc.;
    - Arrangements for hoarding, traffic accommodation;
  o An emergency plan indicating how and where emergencies will be handled, incorporating with the Lab’s existing plan.
  o Temporary Works.
  o Working at heights.
  o Electrical works.
  o Mechanical Installations.

Further method statements are to be submitted prior to, and during the project where changes or new work is required, and the approval of the Designer/Client is required before work on that aspect or activity can commence. The CHS Officer is to be included in production planning sessions/meetings to ensure that the appropriate risk assessments, safe work procedures and communication required are available and completed timeously. Penalties will be applied should this not be adhered to, and deemed a serious offence.

5. **GENERAL REQUIREMENTS**

5.1 **Summary of Risks**

The summary of risks provided is to point the contractor towards some risks he may not be aware of during tendering stage and while developing his formal risk assessments for the project.

The design risks and the management thereof should be included in the Principal Contractors (PC) risk assessments. Where there are other Contractors appointed to do work, the PC is to ensure that Contractors include such information in their risk assessments.

The summary is to be developed following the completion of the Design risk assessment, and to include the residual risks as they apply to the project. The items noted are for information only and must be expanded on as required by the project.

Refer to Risk Analysis

<table>
<thead>
<tr>
<th>PHASES OF THE PROJECT</th>
<th>RESIDUAL RISKS IDENTIFIED TO BE MANAGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security Clearance</td>
<td>All personnel need to be inducted by Security</td>
</tr>
<tr>
<td>Site Establishment</td>
<td>Offloading of Containers, Plant, Equipment and Material.</td>
</tr>
<tr>
<td>Demolition work</td>
<td>breaking down of existing walls and inner structures.</td>
</tr>
<tr>
<td>Brickwork</td>
<td>Working at heights, Housekeeping, Hand tools, constructing off lift shaft.</td>
</tr>
<tr>
<td>Temporary Works</td>
<td>Building of support work, edge protection, working at heights.</td>
</tr>
<tr>
<td>Excavation</td>
<td>Excavation for the lift shaft 2.5m below ground level.</td>
</tr>
<tr>
<td>Painting</td>
<td>HCS, use of correct PPE, working at heights.</td>
</tr>
<tr>
<td>Tiling</td>
<td>Use of HCS, hand tools, housekeeping, Sharp cutting edges.</td>
</tr>
<tr>
<td>Plumbing</td>
<td>Working at heights, Hot works, vessels under pressure (soldering torch)</td>
</tr>
<tr>
<td>Electrical Work</td>
<td>Installation of electrical reticulation.</td>
</tr>
<tr>
<td>Mechanical Installations</td>
<td>Working at heights, working with lifting equipment, exposing existing services.</td>
</tr>
</tbody>
</table>
5.2 Specified Hazardous Chemical Substances

The following lists of products or substances are those which have been identified as likely to be used on the project. This list is not inclusive and other products may be considered. Where the PC is likely to supply the product as the product has not been specified, materials data sheets (MDSs) need to be considered prior to all selections.

<table>
<thead>
<tr>
<th>PRODUCTS/SUBSTANCES/RISKS</th>
<th>POTENTIAL HEALTH OR OTHER RISKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement</td>
<td>• Hand mixing may occur, 50kg bags are an ergonomic risk from handling.</td>
</tr>
<tr>
<td></td>
<td>• Pumping of concrete may occur exposure to extensive vibration, extended hours of work, and potential eye, skin and respiratory irritant from dust exposure, chromates.</td>
</tr>
<tr>
<td>Cement/Silica dust</td>
<td>Caused by cutting, grinding, sanding of any concrete/granite/tiled surface/masonry.</td>
</tr>
<tr>
<td>Petrol/diesel/lubricants</td>
<td>Potentially fuel storage on site. Fire, spillage, fumes</td>
</tr>
<tr>
<td>Wood dusts</td>
<td>Caused by cutting, sanding, drilling wooden products treated</td>
</tr>
<tr>
<td>Adhesives</td>
<td>Possible irritation of eyes, skin damage SDS to be supplied and checked</td>
</tr>
<tr>
<td>Plaster/mortar/screeds</td>
<td>Cement dermatitis if frequent contact with cement. Dust in Lungs</td>
</tr>
<tr>
<td>Sealants/joint fillers</td>
<td>Fumes can irritate lungs and eyes. Area to be well ventilated.</td>
</tr>
<tr>
<td>Paints (PVA)</td>
<td>Possible irritation of eyes, skin damage SDS to be supplied and checked</td>
</tr>
<tr>
<td>Grouts (epoxy)</td>
<td>May be toxic area to be well ventilated. Possible irritation of eyes, skin damage SDS to be supplied and checked</td>
</tr>
</tbody>
</table>
### PRODUCTS/SUBSTANCES/RISKS

<table>
<thead>
<tr>
<th>Product/Substance</th>
<th>Potential Health or Other Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPG Cylinders</td>
<td>Irritation of eyes, skin and lungs. Highly Flammable, Stored in Bulk</td>
</tr>
<tr>
<td>Oxygen Cylinders</td>
<td>Highly Flammable, stored under pressure, Stored in Bulk.</td>
</tr>
<tr>
<td>Solvents / cleaning detergents</td>
<td>May be toxic area to be well ventilated. Possible irritation of eyes, skin damage SDS to be supplied and checked</td>
</tr>
</tbody>
</table>

### 6. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

#### 6.1 Structure and Organization of H&S Responsibilities

**6.1.1 Notification of Construction Work**

The Notification of Construction must be completed and signed by the Client, Client’s Agent and the Contractor. The Notification must be taken to the Regional Department of Labour Office for approval, the DOL will issue a conformation Letter.

**This must take place before a Site Handover meeting will be scheduled.**

It should be noted that this OHSS in no way relieves the Contractor of any of his responsibilities set out in the Act and Regulations

### 7. HEALTH AND SAFETY PLAN FRAMEWORK

The H&S aspects related to the project outlined in the previous sections are to be taken into account when drawing up the H&S Plan. The PC is required to demonstrate competence by providing an H&S system that will address the requirements of the project.

The current legislative requirements, SANS codes, SANS 10400 and any other standards that may guide practice are to be taken into consideration. The following aspects must be addressed in the H&S Plan, as they have been identified in section 2, as playing a role in reducing the overall risk of a particular activity, or section of the project. The CHS Agent may from time to time request additions or systems as they relate to the works or legislative requirements at the time.

The PC is to prepare a site layout drawing to indicate at least the following:

- The positions of site offices of all Contractors, toilets, drinking water and worker rest areas;
- Indicate the positions of emergency personnel and equipment (fire, first aiders, first aid posts);
- Protection of plant and pedestrians, indicate parking, and
- Storage areas (materials and equipment, waste etc.)
- Access and egress to site for deliveries and intended temporary traffic management
- Emergency assembly point

Such layouts are to be updated regularly throughout the project.

#### 7.1 Appointment of Competent Site Personnel

The CEO (OHSA S16.1) of the PC will take overall responsibility for the appointment of competent site staff for the duration of the project. Should the CEO not be personally involved in the project, the H&S responsibilities are to be delegated to the Site Agent (OHSA 16.2). Knowledge and training in H&S is required, and certificates indicating H&S training as well as experience to be included in CVs.
All other legal appointments are to be made with relevance to the type of work required and kept current with the project programme. The construction team is to ensure the appointed CHS Officer is kept up to date with all planned activities, to ensure all H&S requirements are met.

All construction/technical method statements are to be generated by senior site personnel, and the appropriate risk assessments developed therefrom in conjunction with the CHS Officer.

The Occupational Health and Safety Plan shall include the following, but is not limited to the following key appointments:

### 7.1.1 Construction Manager / Supervisors

Competent Construction Managers (CR 8.1) must be appointed to manage part or all of the works and have training and/or experience in the area of responsibility. All site supervisors must show evidence of appropriate training in H&S, and an understanding or training in areas of responsibility (i.e. risk assessments, method statements etc.).

Construction Managers may be appointed where justified by the scope and complexity of the works.

Curriculum Vitae (CVs) are to be submitted for approval by the Designer, and/or Client. The Supervisor will be held responsible for the safety of working teams and subordinates, housekeeping and stacking and storage of materials.

### 7.1.2 Construction Health and Safety Officer

The PC will employ at least one competent, **full-time CHS Officer** for the duration of the contract. The CHS Officer’s CV is to be submitted for approval by the CHS Agent or the Client, at time of tender. The PC is to ensure adequate resources are provided in order to undertake all responsibilities (i.e. mobile phone, computer and internet access, vehicle etc.) Qualifications shall include at least Grade 12 SAMTRAC/NEBOSH/Diploma in H&S qualifications or similar, with exposure to civil engineering and building that is appropriate given the level of project complexity preferably in an OHS capacity. He should also have undergone training in the Act and Regulations. In the case of a contract where contractors are employed, the CHS Officer must have a competence to evaluate the Contractors Health and Safety plans.

Proof of registration or Confirmation letter as a Construction Health and Safety Officer with SACPCMP must be supplied.

This person may not hold any other position on the site staff.

The site supervisor may not act as the CHS Officer.

The Construction Manager will be held responsible for all H&S on the project. He will be assisted by the Construction Health and Safety Officer:

- Senior site staff and supervision, Contractors are to follow systems, instructions etc. given by the CHS Officer at all times;
- No new workers or Contractors may commence work without approval or following the H&S plan as submitted, and
- No inductions of Contractor staff until the H&S documentation is approved by the CHS Officer.
- The CHS Officer/s may not be removed or replaced without the approval of the CHS Agent, nor may the site be left unattended for more than 1 day without adequate, competent cover.

A monthly report of all H&S activities and incidents is required by the end of the first week of each month, or at a date agreed to by the CHS Agent/Client and the CHS Officer. An example of the monthly report is attached as an Annexure C.

The CHS Officer will be responsible for collating the H&S documentation at the close out of the project in electronic format. A list of the typical aspects that should be provided is available as Annexure A to this document. The PC is to ensure that all Contractors documentation follows the same requirements and closed out H&S documentation must be completed and be available with the close out of the main contract.

Failure to do so will be considered a serious offence and penalties applied.
Traffic Safety
The CHS Officer will be responsible for ensuring that daily traffic management is adequately managed.

No worker may be transported in, or on the rear of construction vehicles (bakkies included), or with plant and materials to, on, or from site. The number of passengers in any vehicle is limited to what is stated on the license disc. Vehicles used to transport workers to, from, or on site, shall have secure seats and be covered.

Where there is an interface between the works and any public thoroughfare, typical traffic accommodation drawings will be provided.

7.2 Health and Safety Representatives and H&S meetings
H&S Representatives representing workers and Contractors are to be appointed following the startup of the project, irrespective of the number of workers on site. The appointed H&S Representatives are to be actively involved with H&S and will assist the CHS Officer and site management in meeting legislative duties.

The CHS Officer shall further ensure that H&S is discussed at all internal production or progress meetings. Issues arising from the CHS Agent audits are to be discussed, as well as all H&S related issues.

Minutes are to be kept for all H&S interventions and meetings. Failure to do so will be deemed to be a moderate offence.

7.3 Appointment of Competent Contractors
The Principal Contractor is to ensure compliance with the Client’s minimum standards and all legislative requirements. The same H&S standards required of the PC are to be applied to all Contractors. An index of all Contractors and Suppliers is to be on file and kept updated at all times. The PC is to ensure there is sufficient funding for H&S compliance by each Contractor.

The following minimum aspects are applicable to any Contractor appointed:

- The CHS Officer is to ensure a Contractor’s appointment and approval of H&S documentation at least seven (7) working days prior to commencing work.
- No Contractor may work under the PC’s Compensation registration number. If required, the PC may assist SMMEs with their registration with the Compensation Commissioner. However, such Contractors will not be able to commence work until proof of registration or Letter of Good Standing has been received.
- No work may commence without Mandatary agreements between parties in place.

The following aspects are applicable to Suppliers or short-term works (surveying, repairs, servicing, deliveries etc). Cognisance is to be taken of the level of risk involved and the CHS Officer is to ensure the level of H&S documentation is appropriate:

- Mandatory agreements in place
- Letter of Good Standing
- Method statements and risk assessments
- Available information relative to:
  - Load testing and registers for cranes or lifting devices
  - Medical certificates of fitness
  - Safety data sheets (SDSs)

Failure to provide written approval of H&S documentation will be considered a serious offense, and could result in aspects of, or all the activities being stopped and penalties implemented.
8. GENERAL RISK MANAGEMENT

8.1 Health Risks and Medical Surveillance
As some products used in the building work have not been identified, the PC is to ensure the CHS Officer
and all supervision is responsible for ensuring the safe use of such products, and their inclusion into
method statements and risk assessment. The appropriate SDSs are to be obtained for all products and
used to develop the H&S documentation as they relate to the works.

Many of the processes may be labour intensive and ergonomic risks are to be noted. All workers
(including Contractors) are to be included in the medical surveillance programme.

Workers will be exposed to noise, dust, and physical risks from extended periods of work of a repetitive
nature, materials specified and the general nature of the works.

Environmental monitoring results and risk assessments are to be made available to the occupational
health professionals doing the medical surveillance. The use of occupational risk exposure profiling
(OREPS) and job descriptions are to be used to determine specific exposures for management.

Medical surveillance will commence at pre-employment. All workers (including Contractors) are required
to be in possession of a medical certificate of fitness prior to commencing work. Annual medical
surveillance is required (unless identified as being required more frequently), as well as an exit medical.
Arrangements for keeping medical records for the required time are to be noted. It is preferable that
the PC has a medical surveillance plan. Full medical records are not to be placed in the H&S file. A
procedure for managing the medical records which require safekeeping for prescribed periods are to be
addressed.

Given the potential health risks the following aspects are to be included in each medical surveillance
intervention:

- Full medical, surgical and occupational history;
- Full physical examination of all systems;
- Referral if required for the management of identified health issues that may affect the
  worker.

Specific testing for existing conditions and limitations relative to exposure could include, but are not
limited to:

- Audiometry (hearing tests); and
- Any other tests identified as relevant from chemical or specifically identified risks of
  exposure
- Urine test for working at heights.

Failure to do so will be considered a serious offence.

8.1.1 General Environmental Conditions

Compliance with the Environmental Regulations (as amended), among others is required.
Environmental monitoring of ventilation, lighting and dusts may be deemed to be required by the
Approved Inspection Authority used to measure the environment. Copies of the relevant reports and
actions taken in respect of these are to be placed in the H&S file.

8.1.2 Noise Risks

All plant from plant hire companies (suppliers) or that of the PC is to be compliant with the Noise Induced
Hearing Loss Regulations. Plant identified that has not been tested and marked for noise emissions
will result in having to be tested at the Contractors or PCs expense. Failure to do so within a reasonable
time period will result in such plant being removed from site.

Audiometric testing of all workers is noted as required in the medical surveillance programme for all
permanent workers prior to work commencing. Temporary labour working in identified noise areas will
require testing if the noise levels are indicated on plant or through processes as greater than 85dB.
Audiometry records are to be available in the H&S file.

Suitable SANS approved hearing protective equipment shall be issued and worn. Where several items
of construction plant are in operation at or near to each other, the noise zone for the combined plant should be established and suitable hearing protective equipment used within this zone.

Failure to do so will be considered a serious offence.

8.2 Emergency Procedures

An emergency plan and procedure that is appropriate to the risks is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The plan may be adapted should new information or risks are identified. An appointment of a competent emergency response co-ordinator must be made.

The procedure shall detail the response plan in relation to the works, and include at least (but are not limited to) the following key elements:

- Fire;
- Public injury, Motor vehicle accidents;
- Injury to patients moving around on the premises.
- Falls from heights;
- Labour unrest
- Serious injury to workers (medical or work-related); and
- Any other major risks identified during risk assessments.

The emergency plan is to ensure the inclusion of local service providers where possible. Such arrangements should be made with these persons prior to the commencement of the project.

Local emergency telephone numbers must be displayed and made part of the emergency procedure.

The general principals of emergency management are to be applied as it applies to the hierarchy of control and management.

The PC must consult with the Client in preparation of the emergency as buildings will be operational.

8.2.1 First Aiders and First Aid Equipment

At least 1 first aider will be trained to Level 3. First aiders shall be available and accessible on site at all times, and be able to work as a team when responding to any emergency on the project.

Contractors are expected to ensure compliance and provide/manage their own first aiders and equipment. The number of First aiders will be determined by the complexity and exposed risks of the project, not numbers of workers.

Appropriately stocked first aid kits, at least to the requirements of the Annexure to the GAR, are to be available at all times to assure continual availability and access on site.

8.2.2 Fires and Emergency Management

Attention to emergency planning and procedures is very important. The full emergency plan must form part of the supporting documentation with the H&S Plan. The CHS Agents approval of all emergency plans and procedures is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The plan may be adapted should new information or risks are identified.

First aiders shall be available in each working team, and be able to work as a team when responding to any emergency on the project.

The procedure shall detail the response plan in relation to the works, and include at least (but are not limited to) the following key elements:

- Appointment of a competent emergency response co-ordinator and wardens;
- Lists of first aiders, and
- Requirement in terms of identified risks:
  - Fire;
  - Explosions;
  - Labour unrest
  - Falls from heights, and
  - Motor vehicle accidents.

The emergency plan is to ensure the inclusion of local service providers where possible. Such arrangements should be made with these persons prior to the commencement of the project; the emergency plan is to include the risks of fire on site and related to any specific activities where gas, welding, cutting etc. occur. Hot work permits are required for any such activities.
Fire extinguishers will be appropriate for the risk and in sufficient numbers to deal with the type of fires that could occur. All mobile plant is to have appropriate, accessible fire extinguishers.

8.2.3 Incident Management and Compensation Claims

All incidents and accidents are to be investigated. All serious incidents involving any form of disabling injury or fatality are to be reported to the Designer /Client /CHS Agent immediately. This shall be confirmed in writing following the incident. Full details are to be included in each site meeting or when the Client visits site. A summary of incidents is to be included in the monthly report.

Failure to comply with emergency provisions will be considered a serious offence, and the operation or project may be stopped if deemed inadequate for the work at the time of assessment or site inspection.

8.3 Personal Protective Equipment (PPE) and Clothing

The PC is to provide a procedure as an addendum to indicate how PPE is managed within the Company.

The wearing of the identified SANS approved PPE at all times is non-negotiable. The PC shall ensure that all workers (Including Contractors) are issued with and shall wear:

- Hard hats;
- Protective footwear;
- Overalls that ensure worker visibility.
- Eye protection (if required)
- Hearing protection;
- Reflective jackets (no bibs)
- Respiratory protection (minimum of FF2), and
- Safety Harnesses with Big Hooks.
- Life Lines or cables with anchor points.
- Any other necessary PPE identified from SDSs and/or risk assessments.

Adequate quantities of PPE shall be available. This shall include necessary PPE for visitors. The procedures for managing PPE are to be in a formal procedure submitted with the H&S plan for approval.

Any person (including Client, Designers etc.) found on site without the necessary PPE will be removed from site until the PPE is supplied and worn.

Failure to comply will result in penalties being applied.

8.4 Occupational Health and Safety Signage

On-site H&S signage is required. Signage shall be posted up at fixed or temporary working areas, or other potential risk areas/operations. These signs shall be in accordance with the requirements of the General Safety Regulations or SANS requirements as amended. Signage is to be noted on the site drawings indicating where fixed/temporary signage is required.

Temporary signage is to include (but not be limited to) the following:

- Multipurpose Construction sign at the site Entrance
- ‘Report to site office’ / ‘Warning: Construction Site – Keep out’ or similar;
- ‘Site office’ (if relevant);
- ‘hard hat area’ or other PPE requirements noted;
- First aid box positions (including vehicles); and
- Fire extinguishers.
- Assembly Area
Signs shall be posted at areas of work on site indicating that a construction site is being entered and that persons should take note of H&S requirements. Note should be taken that "omnibus" signs indicating that the entire site requires PPE should not be used. Any areas where PPE is mandatory must be separately designated.

Failure to comply will result in penalties being applied.

8.5 Induction of Employees and Visitors, General H&S Training
A simple, formal induction programme is to be submitted as an addendum for approval with the H&S plan. Inductions must be carried out for all workers and visitors (including Client, Designers) to the site.

Pre-task training is required to ensure workers are familiar with the risks and H&S measures of the work or tasks to be done. Such training is to be done at least daily. Records of inductions and pre-task training are to be kept in the H&S file.

Any person found on site without proof of induction in the H&S File will be removed from site until the proof is supplied and, and a penalty issued per non-compliance.

8.6 Management of Plant and Equipment
Close control of plant and equipment is required, including that of Contractors.

Daily monitoring of all plant and equipment is required prior to commencing work. Full lists of hired and own plant are to be available at the CHS Agent's/Client audit. All daily inspection records are to be kept in the H&S file. Plant Hire and Haulage Contractors are to comply with the requirements where plant and equipment is brought onto site. Registers are not to be more than 1 week behind.

Only competent, fit plant operators are to be used. Medical certificates of fitness are required for all operators.

Any plant or slings used to lift plant or material require annual load testing by an AIA, and all certificates must have the testers LMI/E number. Operators are to be adequately trained and certified to operate mobile cranes or crane trucks. Certificates and registers are to be placed in the H&S file. Movement of plant in closures and in confined working areas is to be closely monitored and managed by the supervisors. The blind spots of plant are to be taken into account and workers and Contractors protected accordingly.

All machinery shall have moving parts adequately guarded so that no access to these is possible when the machine is working.

Failure to do so will be considered a serious offence.

8.7 Excavations
Excavations should preferably not be open beyond what can be closed daily. Where excavations need to remain open, all excavations are to be properly protected. Adequate stakes with 1m high demarcation and berms/spoil are required to be a safe distance from the edge of the angle of repose. Candy tape may not be used to demarcate excavations. Cognisance is required of the surrounding area and increased levels of protection are required where work is in communities, near schools and clinics.

Work will be stopped and penalties applied to any work in excavations that is not compliant.

8.8 Working at heights
A Site specific fall protection plan and Rescue Plan is to be available and supplied as an addendum to the H&S plan. The fall protection plan must be appropriate for the project. Method statements, appropriate risk assessments, safe work procedures and training are to be available prior to work commencing.

Construction drawings shall be required for all temporary structures as they relate to the project. The drawings shall be accompanied by full calculations, design loads and any relevant test results as required by the SANS code, and ensure adequate allowance for the development of appropriate documentation and training. All drawings are to be checked and signed by a competent structural engineer (registered with ECSA).
The focus for working at height shall include fall restraint systems where possible except during assembling or dismantling top components or where it is not deemed safe. The relevant SANS codes are to be applied as they apply to the works and the project, such as:

- SANS 10085
- SANS 10333 (parts 1-3)
- SANS 10087-1:2008

Should part of the works be contracted out, competent Contractors are to be appointed and submit documentation according to the project requirements. The PC is to note if such work is to be contracted to specialists in the H&S Plan. The plan is to be developed and work managed by a competent person for the duration of the project. The following aspects must be included:

- Notices to be posted
- Restrictions or stoppage when weather conditions are deemed hazardous
- Permit system for working at heights
- Prevention of falling tools or equipment
- Link to emergency plan regarding rescue

All workers are to be in possession of valid certificates of fitness that extend for the duration of the works. Note the requirements in the section relating to medical surveillance.

Registers and all relevant documentation are to be placed in the H&S file.

**Work will be stopped if any work at heights is not compliant.**

### 8.9 Cranes and lifting equipment

Should any form of lifting device or crane (fixed or mobile) be used during the project for deliveries, moving of supplies or equipment, the appropriate documentation must be made available. Method statements, risk assessments, safe work procedures and training are to be available prior to work commencing. A procedure for managing loads and lifting must be made available as an addendum to the H&S Plan.

### 8.10 Temporary Works (Scaffolding, support work, formwork)

Temporary works must be properly designed and signed off by a competent person. In these instances, a competent person is defined as a Professional Engineer or Professional Technologist (registered with ECSA) who has sufficient experience in the design of the type of temporary work in question to be able to assess the design. The appropriate competent persons are to be appointed to manage and monitor such works to the satisfaction of the Engineer and CHS Agent. Records and registers are to be properly completed and kept in the H&S file. If temporary works are to be erected by a Contractor, this must be notified to the Designer/CHS Agent. All necessary calculations and drawings of temporary works must be kept on site and available to the PA and CHSA.

### 8.11 Bulk Mixing Plants

Whichever form of bulk mixing plant is used, for mixing concrete, guards and protection of nip points, emergency stops etc. are to be appropriately managed by competent supervision. Edge protection, movement of plant and dust management are required, including disposal of cement bags. The layout of the batch plant and movement of plant is to be provided on an appropriate drawing.

The added requirement of Chest X rays for workers is to be added to pre-employment and possibly exit medicals, unless the workers are already on a system of medical surveillance.

### 8.12 Mechanical installations

All mechanical installations are to be carried out in conformity with the manufacturer’s instructions. Method statements and risk analyses must be compiled for each type of installation. A competent person must be designated to supervise the work.

### 8.13 Auditing

Frequency of external auditing by the CHS Agent or Client will be as agreed with the Client and Designer but will at least conform to the requirements of the Construction Regulations. The site will be inspected and the documentation audited relative to the activities and H&S plan. The CHS Officer of the PC must accompany the Client, or the CHS Agent, on all audits and inspections. Not all audits will be, or need be announced.
The PC will ensure that all their Contractors are audited at a frequency determined by the CHS Agent. Audit frequency may be increased if Contractors are not performing adequately. Audit results will be acted upon and non-conformances and penalties issued where deemed appropriate. The Client, Designer or CHS Agent may act or require further outcomes if non-compliances are noted or unsafe acts are noted on site.

Internal audits are to include site conditions as well as ensuring H&S files are appropriate, and compliant. Comprehensive audit reports are to be made available, the format of the audit reports are to be acceptable by the CHS Agent.

The audit template will be adjusted from time to time relative to the activities on site. A similar process is to be used by the PC when auditing their Contractors on site. Compliance with legislative requirements and the systems provided by the PC to manage the H&S on site will be measured. Full compliance is required. Time limits for corrective actions will be set and must be adhered to.

Failure to address findings or non-conformances will be considered a serious offence.

8.14 Communication on Site

All H&S communication during the project between the CHS Agent and the PC will be done through the Architect/Clerk of Works/Client and be in writing, including the issue and responses to non-conformances and H&S audit results.

Failure to address issues timeously will be considered a serious offence.

8.15 Care of Workers on Site (Welfare)

Adequate toilets, clean, safe drinking water and decent shelter must be afforded workers at all times. Toilets will be within reasonable distance of workers, or placed with each working team in safe, with reasonable privacy. Hand washing facilities will be provided. Arrangements made where existing facilities are shared with existing users must be made in writing and placed in the H&S file. No substances containing Formaldehyde may be used in Chemical Toilets.

Failure to ensure compliance will be considered a serious offence.

8.16 Discipline, Alcohol and Substance Abuse

All employees (management included) are to follow instructions given in the interest of H&S. Disciplinary action is to be imposed on those who do not follow such instructions or company rules or policies.

No person is allowed to work or access site if under the influence of alcohol or other substances that could impact on their own or others safety. The PC is to have a drug and alcohol policy available to manage such instances.

These requirements are applicable to any employee of any organization providing services on site. Penalties may also be applied by the Client, OHS Agent or Engineer.

8.17 Electrical Equipment

In addition to the requirements of the Electrical Machinery Regulations and the General Machinery Regulations any electrical distribution board used for construction work shall be fitted with suitable earth leakage protection. Leads must be properly and firmly connected. Plugs and sockets shall be in good and safe condition.

All electrical apparatus, other than electrical hand tools, shall have a physical “lock out” system which will prevent any operation other than that authorized by a supervisor. A “lock out” sign shall be displayed when the apparatus is not in use.

Method statements and safe work procedures will be required for all work involving electrical apparatus.
9. HEALTH AND SAFETY FILE

The documentation submitted and approved following the awarding of the contract will be used to form the H&S file. The H&S file is required to be laid out in a logical manner, and documentation filed within the file is to be easily accessible.

The following completed information shall be included (but not be limited to) as part of the index:
- The PSHSS;
- The H&S Plan and the approval by Client;
- Appointment by Client;
- Mandatory agreement with Client;
- Notification of Construction work
- A record of all working drawings, calculations and design where applicable;
- Detailed list of Contractors and Sub-Contractors with contact details, appointments, Mandatories etc., H&S specifications issued;
- Record of Competencies (CVs) and appointments;
- Training Records;
- Permits;
- Method statements;
- Risk assessments;
- Safe work procedures;
- Emergency and injury management;
- Safety data sheets
- Medical surveillance records;
- Registers; and
- Records of audits, minutes etc.
- Plant lists
- Temporary electrical installations
- Employee records (who is on site)

10. NON-CONFORMANCES

Should, at any time, the works, or part of the works, be stopped due to unsafe acts or non-compliance with the Clients OHS Spec or PCs H&S Plan; neither the PC nor any other Contractor shall have a claim for extension of time or any other compensation.
ANNEXURE A
CLOSE OUT REQUIREMENTS

The H&S files for the Principal Contractors and all Contractors require closure and handover to the Client at the completion of the project. The following list is an example of what should be included, but is not exhaustive. The OHS Agent or the Client may require further information at the time of completion and the Principal Contractor is to ensure that all instructions are met. Documentation would include all records from the start of the project. Daily or monthly plant inspection records are not required unless they are related to an accident. All records to be in electronic format and submitted to the OHS agent for approval in adequately formatted lists and folders. Layout should be logical and in the same order as in the site files.

Health and Safety close out file requirements include:

a) Client H&S Specification
b) Principal Contractor’s OHS Plan(s)
c) Organograms
d) Legal Appointments
e) List of all employees employed on a permanent or contractual basis over the duration of the contract
f) Letters of Good Standing for the Project
g) Full files for all Contractors as well as their close out reports
   • List of Contractors
   • All employees employed on a permanent or contractual basis over the duration of the contract
   • Letters of Approval of Contractors
   • Mandatory Agreements
   • Letters of Good Standing
   • Appointments
h) Incident Records
i) Non-Conformance records
j) Agent’s Audits
k) Method Statements
l) Risk assessments
m) Safe work procedures
n) Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended
o) All drawings for temporary structures (suspended beams/scaffolds etc.)
p) All operating manuals for any systems that require on-going maintenance
q) Copies of test results, policies and procedures for environmental monitoring (silica, noise, dusts etc.)

Defect and Liability Period

The H&S files are to be kept ‘live’ for the defect and liability period by the Principal Contractor, including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the OCHS Agent prior to any work commencing. A copy drawing records for the as-builds must be placed on file by the Designers once complete.
<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>RATE</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>C.01</td>
<td>Preparation of the Contractor’s site specific Health and Safety Plan</td>
<td>lump sum</td>
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<td>C.02</td>
<td>Principal Contractor’s initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations</td>
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<td>C.03</td>
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<td>C.04</td>
<td>Provision of Personal Protective Equipment (PPE)</td>
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<tr>
<td></td>
<td>(a) Reflective vests</td>
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<tr>
<td></td>
<td>(b) Hard hats</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) Protective foot wear</td>
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<td></td>
<td></td>
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<td></td>
<td>(d) Earplugs</td>
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<td></td>
<td>(e) Dust masks</td>
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<td>(f) Gloves</td>
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<td>(g) Ear Defenders SABS approved</td>
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<td>(h) Overall</td>
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<td>(i) Safety harnesses</td>
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<td>(a) Initial (baseline) medical examinations</td>
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<td>(b) Periodic and exit examinations</td>
<td>prime cost (PC) sum</td>
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<tr>
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<td>(c) Contractor's charges to allow for handling costs and profit in respect of sub-items 13/X.06 (a) and (b)</td>
<td>%</td>
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<td>C.07</td>
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<td>C.08</td>
<td>Provision of First Aid Boxes to GSR requirements</td>
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<td>C.09</td>
<td>Noise monitoring</td>
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<td>(a) Establishment of noise zones (plant)</td>
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<td></td>
<td>(b) Audiograms (personnel)</td>
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<tr>
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T3.4 : ANNEXURES

T3.4.1 : DRAWINGS

The following drawings are referred to in the Bills of Quantities and annexed hereto:

<table>
<thead>
<tr>
<th>No</th>
<th>Description:</th>
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<td>1</td>
<td>First Floor HVAC Layout</td>
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<tr>
<td>2</td>
<td>Ground Floor HVAC Plant &amp; Sections</td>
<td>8599-A-02</td>
</tr>
<tr>
<td>3</td>
<td>First Floor Collection Area Extract Systems</td>
<td>8599-A-03</td>
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<tr>
<td>4</td>
<td>Wet Labs and X-Ray Ventilation</td>
<td>8599-A-04</td>
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