AGRICULTURAL RESEARCH COUNCIL
NATURAL RESOURCES AND ENGINEERING
(Agricultural Engineering Campus)

Private Bag X519, Silverton, 0127

CLIENT REPORT: TENDER SPECIFICATIONS

# ARC-TSC Glasshouse 8 renovation using Architectural Aluminum and glass

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| | |
|---|---|
| **AE Project No:**<br>**Pilot report** | |

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# 1 Background

ARC TSC (Tropical and Sub tropical Crops) need to convert an existing building into a Laboratory and upgrade 3 Glasshouse structures that need to comply with current Building regulations. All structures must be insect proof to mitigate the risk of insect pests entering the facilities. A maximum opening size of 0.36 $mm^2$ is allowed. The renovations include:

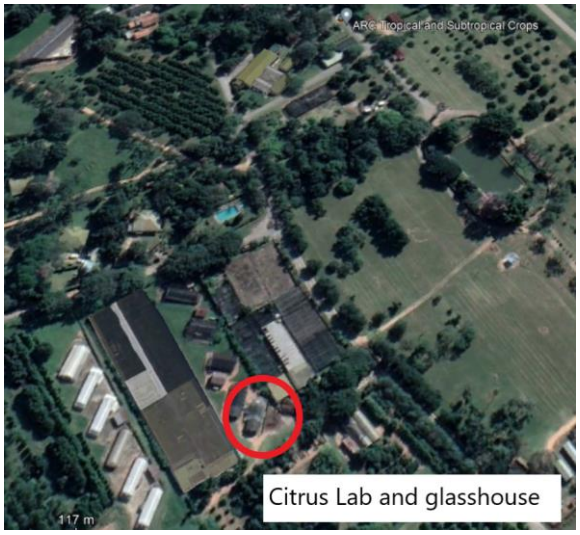
1. Glasshouse 1 renovations
2. Glasshouse 2 renovations
3. Building of PEQ facility and Glasshouse 8 renovations

Tenders for each of the three structures have to be completed separately in Table 1. Each structure will be linked to a specific RFQ. Items may be sub-contracted, except the items indicated where no sub-contracting is allowed. Locations

## 1.1 GPS information

- GPS coordinates: -25.453699° 30.969313°

## 1.2 Map of site



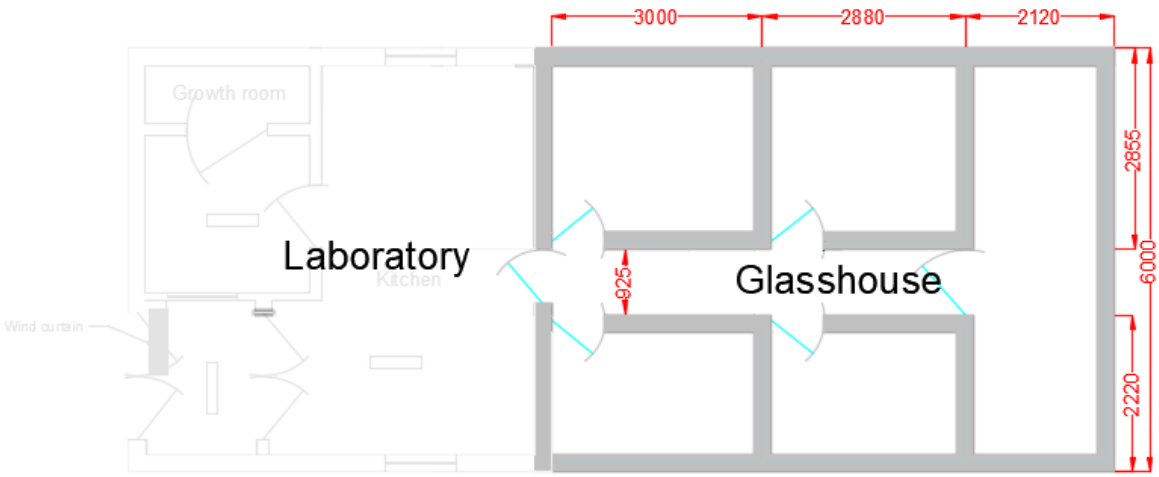

# 2 Price breakdown

The ARC has a limited budget; therefore, the tenderer must give a price breakdown as shown in Table 1. The ARC has the right to choose only certain aspects of the quotation as set out in Table 1. One contractor will do all the work selected. The remaining items will go on a new tender process in the next financial year.

**Table 1**

| | Item | Quoted price (VAT excluded |
|---|---|---|
| 1. | Refurbish / Repairing glass house except the listed items below | R |
| 2. | Growth lights per compartment | R |
| 3. | New electrical outlets | R |
| 4. | Removal and re installing of existing electrical cables | R |
| 5. | Deep cleaning all brickwork | R |
| 6. | Portable Fire extinguishers & signs | R |
| 7. | Compartment and glass house signs | R |
| 8. | Contingency | R30 000 |
| | Total (Vat excluded) | R |
| | Vat | R |
| | Grand total | R |

## 3 Existing Glass house number 8



## 1.3 Photos of existing glasshouses number 8

# 4 Wire netting

Refurbish existing wire netting by stretching netting flat and stitching the panels to the main frame using galvanized wire.


Photo indicating the wire netting

# 5 Dismantle the glass facades

The contractor is responsible to:

- Dismantle all glass and removing it from site
- Dismantle the Aluminum glass frames and sell it for a discounted contracted price.

# 6 Installation of New Glass within aluminum frames sealed in rubber

**This part of the tender may not be subcontracted**

## 1.4 Main frames of the structures

Re use and refurbish the main frame of the glasshouse structure.

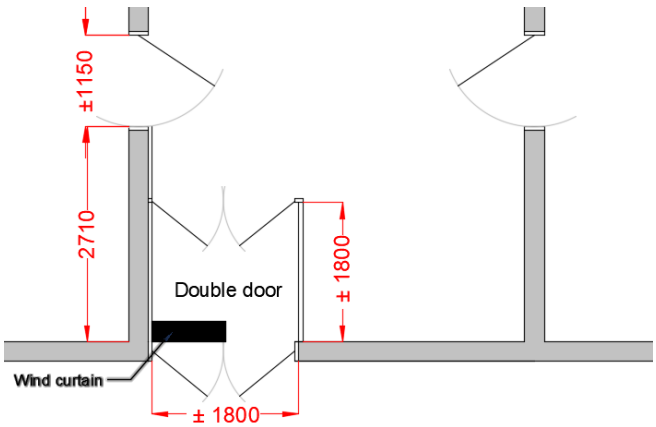
- Glazing requirements: Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and all in accordance with the National Building Regulations Parts B, N, T, SANS 10137, SANS 10400 and SANS 1263.
- All safety glass and glazing materials (individual panes) shall be permanently marked in such a way that the marking will be visible after installation of glazing.
- **The successful Tenderer shall submit the AAAMSA Glass & Glazing Certificate confirming that glazing has been installed in accordance with SANS 10160, SANS 10137 and SANS 10400 and ensuring that Safety Glazing Materials have been installed and individually marked in the mandatory safety glazing areas.**
- TEMPERED SAFETY SINGLE GLASS

- Area of glass surface ± 230m²
- The glass house must be insect free. I.e., all holes and crevasse must be sealed off
- 6.38 laminated safety glass
- All rubber seals must be UV resistant
- All doors must be hinged doors and must seal on all 4 sides

## 1.5 Aluminum frames

- Use Aluminum glass frames
- Rubber gasket must be applied to ensure an insect, water and wind tight seal between the glass and aluminum
- No gutters require

## 1.6 Glass doors

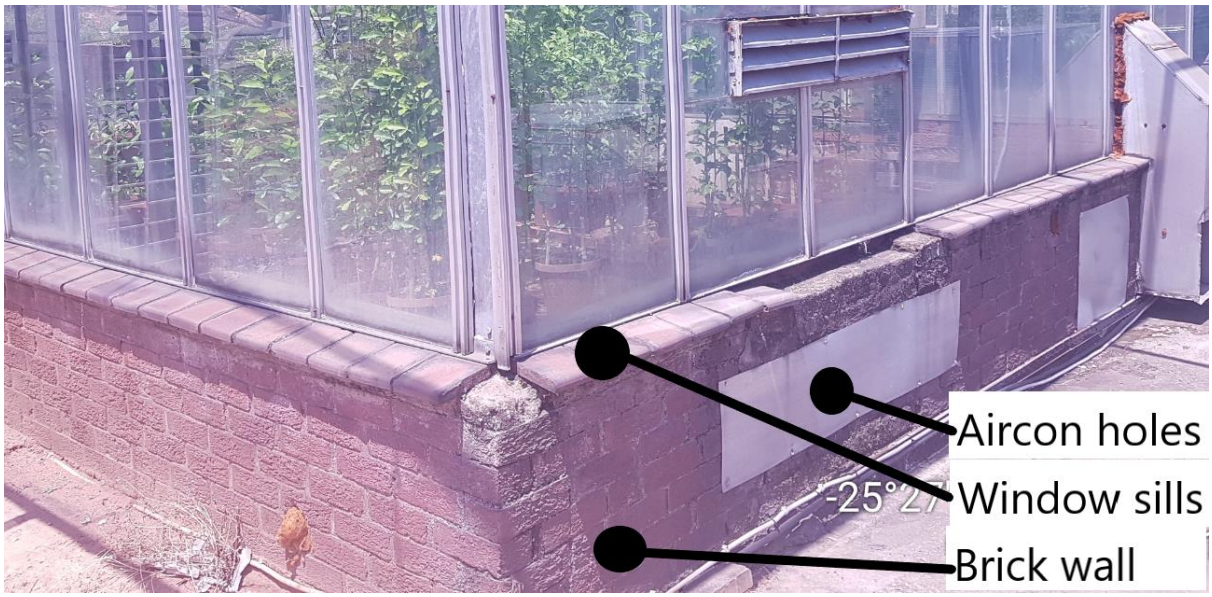


- The second door of the double entrance will only be used to bring in big equipment
- All doors to be glass and aluminum doors
- Doors must be seal at all 4 sides of the door with soft rubber seals
- Doors must be 100% be sealed
- An existing air curtain must be installed above the first door of the double door entrance. ARC will provide this equipment
- The double door on the outside must be lockable
- Please note that the keyhole must not allow for opening to the outside as this will allow insect to enter the facility.

## 1.7 Air curtain switch

- The air curtain must be automatically switch on when the door is opened.
- Industrial metal magnetic switch for door. Similar or equal to https://www.acdc.co.za/pages/all-products#eyJjYXRlZ29yeSI6W10sImJyYW5kIjpbXSwic3BlY2lhbCI6W10sImNsZWFyYW5jZSI6W10sInNlYXJjaFNLVSI6ImZhbHNlIiwic2VhcmNoRGlzY3JpcHRpb24iOiJmYWxzZSIsInNlYXJjaENhdFBBR0UiOiJmYWxzZSIsImNvbnRhaW5zIjoidHJ1ZSIsInN0YXJ0c1dpdGgiOiJmYWxzZSIsIm9yZGVyQnkiOiIiLCJzZWFyY2giOiJtYWduZXRpYyBzd2l0Y2giLCJwcmljZSI6W119
- Current must flow thru a solid-state relay to switch on the fan.
- Ad electrical components as needed
- All electrical components must be in a box. Similar or equal to : https://www.googleadservices.com/pagead/aclk?sa=L&ai=DChcSEwj-tdH4jbL7AhVJtO0KHfsFBU4YABAPGgJkZw&ohost=www.google.com&cid=CAESbOD2npAs6lOI8JDJi8Ftw0nJP0tPuvvmOS5eMeASlHfjE3ORF8EZw4Z8aYrTJe3PEx1xjTEufEBHkL_PQ6Br1xALyMdQNWkWcjO2guxDs_fMgAF6fKK_cOdJx5gqAZArFjsboFo4MyQBlW6-7Q&sig=AOD64_0-JKdylw4yND0qnIoTyzPIVUaGpA&ctype=5&q=&ved=2ahUKEwjAysj4jbL7AhV_QEEAHeN2B8sQ9aACKAB6BAgHEA8&adurl=

# 7 Brick walls




## 1.8 Old Air conditioner holes

- Close all holes in brick wall with mortar and bricks that has a similar color than the existing wall.
- Glasshouse number 8: Area to be closed: ±2.9 m²
- No Painting required

## 1.9 Window sills

- Remove old tiles that were used as sills
- Use facia boards 10 * 150 as window sills
- Screw Facia boards at minimum 1m intervals to brick walls
- Paint strictly to paint manufactures instructions
- Color to ARC instructions
- Seal void between the facia and aluminum with copious amounts of silicon, the building must be insect proof

Glasshouse number 8 Length required = ±22.4m

## 1.10 Deep cleaning of brick walls

- Deep cleaning existing brick walls with high pressure washer and chemical cleaning solutions
- Do not use water pressures higher than 2800 kPa as measured at the nozzle

  Glasshouse number 8: Area to be cleaned ± 16 m²

# 8 Electrical Cables for the glass house

- All cables must be routed in cable ladder racks
- Route and re fit all electrical cable to all outlets, plugs and lights
- Using old cables, wires, plugs and socket outlets
- Certificate of Compliance (COC) for all electrical work must be issued after final completion of the work as stipulated in this bid document. ARC reserves the right to withhold final payment should the COC not be issued or fail to comply with legislation

## 1.11 Aircons

- Remove all heavy-duty electrical cables to DB boards.
- Re install existing cables to Aircon units

## 1.12 New terrain lights

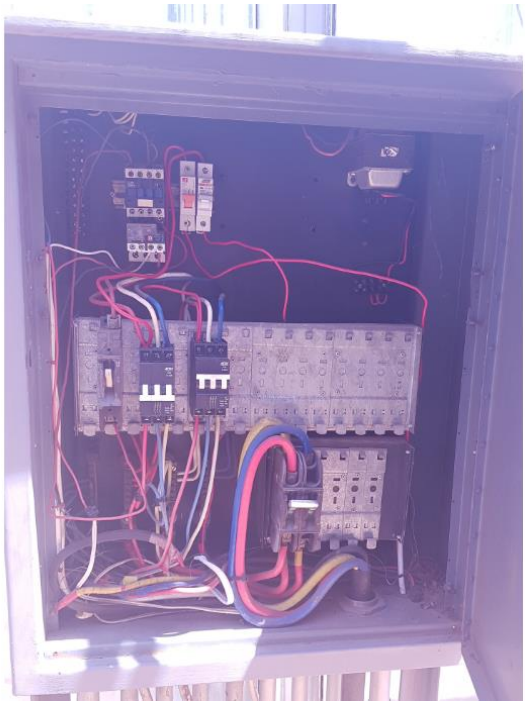
- 2 x 50 W LED flood lights around buildings
- Automatically switchable with 25 A day/night control switch
- The location around the Glass house of the lights will be discussed on site

## 1.13 New plug outlets

- Install new 1 new waterproof double wall outlet socket in each glass house compartment
- Re-install 1 new single waterproof outlet above door for air curtain (use existing installation)

## 1.14 DB Boards

- Install cover plates for DB board



## 1.15 Electrical standards

- The cable sizes, circuit breaker sizes, cable lengths, make of pillar boxes, etc. to be verified by the contractor and agreed upon by the engineer and to be in compliance with the National Building Regulations.
- All equipment to comply with SANS standards.
- All equipment to be installed according to SABS 0142
- All cables to be SWA copper
- All cables to be installed according to SANS 0142

## 1.16 Pipe, Wire / cable management

- Medium duty cable tray, Equal or similar to Cabstrut
- Wire management with cable trays
- Wire diameter of trays 4mm
- Width of tray - to accommodate all cables/wires in a single layer

**Table 1:Wire management**

# 9 Growth lights inside the glass houses

## 9.1 Growth Lights

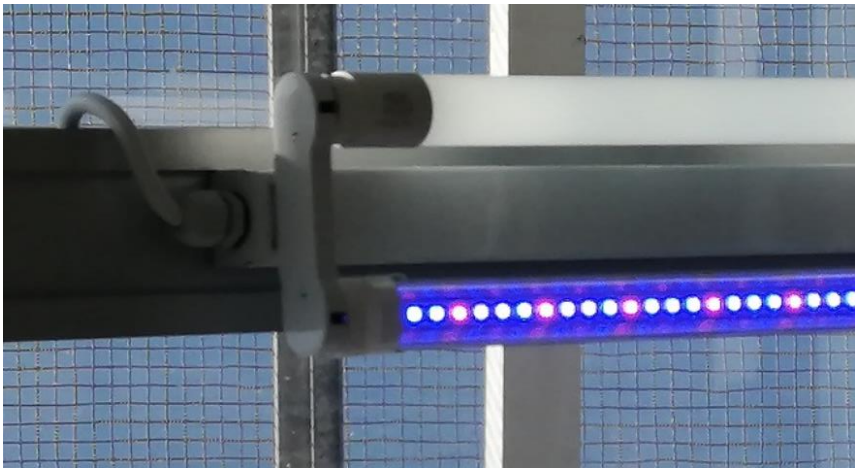


Photo indicates the Growth and normal LED light on each fitting

| | Quantity requires per glass house number 8 / Large compartment | Quantity requires per glass house number 8 / small compartment |
|---|---|---|
| | 1200mm | 1200mm |
| Double T8 LED fitting | 16* | 14* |
| 230v Daylight, frosted LED tube. Similar or equal to ACDC | 16* | 14* |
| 230v Growing LED tube | 16* | 14* |

(Included 2 spare tubes)

- http://a365.acdc.co.za/Images//spec/LEDT8PG-A3FR.pdf
- Similar or equal to: https://www.acdc.co.za/pages/led-grow-lights
- Complete with T8 fittings, switch etc.

## 9.2 Light switches

- 24 hour geyser timer with 8 programs mounted to wall plate
- Timer must be mounted into water proof box
- All wire must be in plastic trunking
- 24 hour geyser timer with 8 programs mounted

Photos indicate timer configuration

## 10 Water supply inside glass compartments

- Supply and install 25 mm brass bib tap on existing water reticulation system (SABS approved, similar or equal to Cobra). Quantity 1
- Replace all tap washer to existing taps. Quantity 8
- Four x 5 meter long, 20 mm diameter hose-pipe complete with Gardena fittings on Tap and hosepipe, with a six year warranty.
- One x 10 meter long, 20 mm diameter hose-pipe complete with Gardena fittings on Tap and hosepipe, with a six year warranty.
- One Trigger Nozzle to be connected to each hose pipe

## 11 Glass house compartment signs

- See **Error! Reference source not found.**
- Quantity required: 13 units
- Manufacture of 2 * 2mm Perspex 330 * 260 (Paper will be sandwiched between Perspex plates)

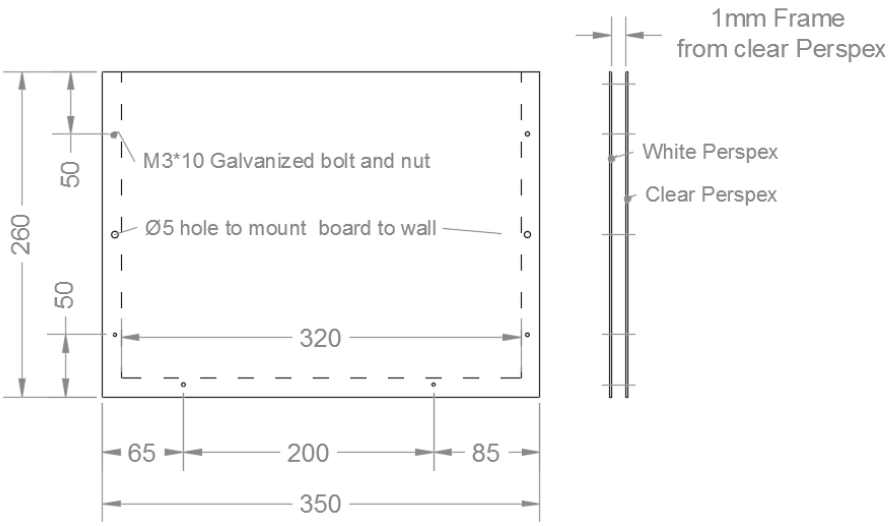



Figure: Compartment signs

## 12 Signboards

- Full color printing material: 1.4 mm chromadek (CKS 191 standards)
- Size of sign: A2
- Chromadek, 0.6mm thick and printed at 300 dpi on a monomeric vinyl sticker
- Mounted with galvanized bolts
- The Chromadek label shall have a minimum guaranteed life of 10 years
- ARC will provide the Artwork in a Microsoft Word format
- Quantity: 1

## 13 Portable Fire extinguishers

- Portable fire extinguishers, SANS 1567 & SANS 1910.
- One, 9 kg or 9 Liter fire extinguishers.
- Appropriate signage must be mounted on the wall next to fire extinguishers.

## 14 Steel Paint

- All steel to be clean, dry, firm and dust free, painted with one coat merit universal undercoat (UC1) (before glazing) and apply two coats of paint similar to Plascon Velvaglo to manufacturer's specification. Colour by dr Jooste.
- Before any painting is applied, the surfaces shall be prepared according to SABS 064, Code for Preparation of Steel Surfaces for Painting. All surfaces shall be moisture free, clean and properly prepared.
- During painting, the Contractor shall ensure that all the necessary fire prevention and firefighting precautions have been taken.
- Name plates, labels and notices on equipment shall not be painted.
- Items which do not require painting such as light fittings and thermometers, shall only be installed after the paint work on the plant, ceiling or walls as applicable have been completed.
- Painted surfaces on proprietary manufactured items shall be adequately protected. Equipment on which the paintwork has been damaged during installation shall be repainted before first delivery of the plant will be considered.

## 15 Ownership

The contractor will be responsible for safekeeping of all building materials and tools until the official completion of site handover.

## 16 Standards & dimensions

- All potential air leaks must be sealed off in the whole glasshouse structure.
- All equipment and fittings supplied must be protected against corrosion. The greenhouse interior environment will be at a relative humidity of between 60% and 80%, therefore good protection against corrosion is of utmost importance.

- All work must comply with the National Building Regulations & Building Standards Act SANS 0400 1990 (or latest). Local council requirements & all relevant specifications and codes are to be adhered to.
- Indicated dimensions to be taken in preference to scaling. Overall dimensions (external) to take precedence.
- All dimensions, levels and heights must be checked on site and any discrepancies to be reported to the Engineers before any work takes place.
- All dimensions on drawings and documents must be checked before commencing of any work and/or compiling of tenders.
- Within 7 days of being issued with an order, the contractor must indicate what information, drawings or specification are still outstanding or needs clarification. After 7 days, it is assumed that the contractor knows exactly what must be done and no delays will result in this respect.

## 17 Warranty

- All equipment and works must carry a warranty of one year from date of final commissioning (final site handover back to the ARC).

## 18 Site survey

- The contractor is to determine the conditions before providing the ARC with a quotation.
- The contractor is to determine, prior to commencing work, the location of all underground services such as water, electricity and communication pipes or lines by engaging an authorized service locator, the cost of which is to be borne by the contractor.
- The contractor will make good any services, surfaces and finishing damaged during course of construction.

## 19 Site cleaning & safety

- The site must be clean at all times.
- The Contractor is liable for the safety of his workers and work conditions according to the OHS act.
- The Contractor is responsible to keep all equipment safe.
- The Contractor to remove all building rubble and clean site after completion of work before final payment can be considered.

## 20 Contingency:

- An amount of **R30 000** will be approved for variations and contingency.
- No variations or contingency will be valid, unless approved by Dr Elize Jooste in writing.
- The ARC has the right not to spend this contingency or only part of it.
- The **R30 000** must be clearly stated in the quotation as Contingency.

## 2. SECTION 2: EVALUATION CRITERIA

**The bid will be evaluated on four (4) stages:**

**Stage 1**: Administrative compliance and screening mandatory documents

**Stage 2:** Mandatory requirements

**Stage 3:** Functionality evaluation

**Stage 4:** Price

### 2.1 STAGE 1: ADMINISTRATIVE COMPLIANCE CHECKS

Bidders must ensure that all standard bid documents are signed and the Central Supplier Database report or Unique Number or Supplier number from the CSD is attached to the proposal.

**Table.1: Minimum compulsory requirements for all bidders.** *Supplier completed table 1 must be included as part of the RFQ document for evaluation.*

| No | Requirement | Comply in RFQ request Yes/No |
|---|---|---|
| **Supply chain management requirements** | | |
| 1 | Valid tax PIN number from SARS | |
| 2 | CSD report (Current and updated Central Supplier Database report) | |
| 3 | Certified copy of company registration documents, such as CK certificate for Close Corporations. | |
| 4 | Completed and signed Standard Bidding Documents (1, 2, 3,4,6) | |
| 5 | Completed and signed form of *Offer and Acceptance*. | |
| 6 | Attendance of the compulsory briefing sessions at identified sites as specified in the advert | |
| **Technical requirements** | | |
| 7 | CIDB grading of 2GB (For glasshouse) | |
| 8 | South Africa Glass and Glazing Association (SAGGA) membership | |
| 9 | CIDB GB (General building), Rating 1 (for building) | |
| 10 | Qualified Wireman's License Certificate (Electrical work) | |

| | | |
|---|---|---|
| 11 | Short company profile demonstrating at least 2 years' experience in renovations of glasshouse structures/shop fronts using **Architectural Aluminum and glass** for construction and/or maintenance as required. | |
| 12 | Contactable recommendation letters on projects using architectural aluminium and glass (construction or maintenance) to be supplied (at least 1). The recommendation letters must include client company name, contact person, telephone number, type of work completed and period of completion. The value of the project must be over R500 000 each.<br><br>(See: ANNEXURE A: Recommendation letter. These letters will be handled in compliance with the POPI Act) | |

## 2.2 STAGE 2: MANDATORY REQUIREMENTS

**CIDB (Construction industry Board)**

Glass house SG 2 (The development, extension, installation, renewal, removal, renovation, alteration or dismantling of glazing, curtain walls and shop fronts)

**Membership (Glass)**

Current and valid membership from the South Africa Glass and Glazing Association (SAGGA) under the umbrella of Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA)

**Electricity**

Must submit the proof of registration to the **Electrical Conformance Board of South Africa (ECB)** of the person who will issue the COC - Electrical

## 2.3 STAGE 3: FUNCTIONALITY EVALUATION

Functionality will be scored against the following criteria.

| **Reference letters (Weight 40%)**<br><br>Bidder's Glass house renovation relevant experience for the assignment: (The bidder must attach duly signed recommendation letter(s) to qualify for the indicated points) (see: ANNEXURE A: RECOMMENDATION LETTER) | |
|---|---|
| Bidder with at least **3 RECOMMENDATION LETTERS** of Glasshouse renovation and/or **Architectural Aluminum work (Large windows such as shopfronts and glass walls)** over R500 000 each | 3- Good |
| Bidder with at least **4 RECOMMENDATION LETTERS** of Glasshouse renovation and/or **Architectural Aluminum work (Large windows such as shopfronts and glass walls)** over R500 000 each | 4- Very Good |
| Bidder with at least **5 RECOMMENDATION LETTERS** of Glasshouse renovation and/or **Architectural Aluminum work (Large windows such as shopfronts and glass walls)** over R500 000 each | 5- Excellent |

| **Company Experience/past performance (Weight 60%)** - Use Annexure B to populate | |
|---|---|
| 3 points will be allocated to a tenderer who has done project/s in Glasshouse renovation and/or **Architectural Aluminum work (Large windows such as shopfronts and glass walls)** with a **combined** value between **R3 000 000 and R5 000 000** in the last 7 years. | 3- Good |
| 4 points will be allocated to a tenderer who has done project/s in Glasshouse renovation and/or **Architectural Aluminum work (Large windows such as shopfronts and glass walls)** with a **combined** value between **R5 000 000 and R8 000 000** in the last 7 years. | 4- Very Good |
| 5 points will be allocated to a tenderer who has done project/s in Glasshouse renovation and/or **Architectural Aluminum work (Large windows such as shopfronts and glass walls) work** with a **combined** value above **R8 000 000** in the last 7 years. | 5- Excellent |

## 2.4 MINIMUM SCORING

Bidders that do not obtain a minimum score of 60% for functionality will be disqualified and will not be evaluated further on price as per the formula from National Treasury.

## 3. ANNEXURE A: RECOMMENDATION LETTER

<table>
<tr><td colspan="4">RECOMMENDATION LETTER FORMAT</td></tr>
<tr><td colspan="4">Bidder’s Letterhead<br><br>We are submitting a bid for the contract described below. We appreciate your assistance and effort in completing, on your letterhead, the reference as set out below on your experience with us.<br><br>RENOVATION OF PEQ FACILITY AND GLASSHOUSE 8.</td></tr>
<tr><td>Reference Letterhead</td><td colspan="3">Reference Legal Name</td></tr>
<tr><td colspan="4">The name of the company you are giving a reference for</td></tr>
<tr><td colspan="4">Describe the Contract / Project work and/or Service the above bidder provided to your organisation:</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td>Project period (start date)</td><td colspan="3"></td></tr>
<tr><td>Project period (end date)</td><td colspan="3"></td></tr>
<tr><td>Project cost that the bidder was responsible for (Vat Inc)</td><td colspan="3"></td></tr>
<tr><td colspan="4">Please rate the above bidder according to the following criteria by ticking the relevant column and providing comments / details in the space provided below if relevant:</td></tr>
<tr><td>Criteria</td><td>Doesn’t meet requirements</td><td>Meets requirements</td><td>Exceeds requirements</td></tr>
</table>

| | | | |
|---|---|---|---|
| Project was completed within **budget** | | | |
| Project was completed within the required **time frame** | | | |
| The bidder understood and delivered successfully on the **scope of work** | | | |
| Professionalism | | | |
| Quality of workmanship | | | |
| Quality of materials used / adherence to given specifications | | | |
| Availability of company resources | | | |
| Overall Impression / Satisfaction with bidder | | | |
| Further details on any of the points above, or any other comments | | | |
| Number of times used in the past years | | | |
| Would you use the provider again | Yes / No | | |
| Completed by: | | | |
| Designation: | | | |
| Signature: | | | |
| Company Name: | | | |
| Contact Telephone Number: | | | |
| Date: | | | |

## 4. ANNEXURE B: Company past 7 years performance

| | Company | Description of work done for which your company was responsible for w.r.t. **Glasshouse renovation or Architectural Aluminum work (Large windows such as shopfronts and glass walls)** | Name and Contact details of customer | Date of contract<br><br>2015 -> | Value of the work done for which your company was responsible for w.r.t. **Glasshouse renovation or Architectural Aluminum work (Large windows such as shopfronts and glass walls)** |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| | Add rows as needed | | | | |
| | | | | **Total** | |