

**REQUEST FOR QUOTATION (RFQ): BUILDING  
ELECTRICAL INSTALLATION WORKS FOR KHULA  
BUSINESS PREMISES (PTY) LTD A SUBSIDIARY OF  
SMALL ENTERPRISE FINANCE AGENCY SOC LTD (SEFA)  
AT KWAMAGXAKI SHOPPING COMPLEX, C/O RALO &  
CETU ROADS, KWAMAGXAKI, GQEBERHA, EASTERN  
CAPE**

**INTERNAL LIGHTING INSTALLATIONS**

**Consisting of:**

**Section 1: Detailed Specification**  
**Section 2: Bills of Quantities**

---

## DETAILED SPECIFICATION – Electrical Installation

---

### Contents

1.0	INTRODUCTION & GENERAL .....	1
2.0	SCOPE OF WORK .....	1
2.1	SUPPLY AND CONNECTION .....	1
2.2	Temporary Works .....	1
3.0	SYSTEM LOW VOLTAGE.....	2
4.0	QUALITY OF MATERIALS.....	2
5.0	BUILDER’S WORK .....	2
6.0	SCHEDULES OF INFORMATION .....	2
7.0	SCHEDULE OF LUMINAIRES.....	3
8.0	SAMPLES AND ALTERNATIVES .....	4
9.0	SUPERVISION, WORKMANSHIP AND DELAYS .....	5
10.0	MAKING GOOD .....	5
11.0	COMMISSIONING AND TESTING .....	5
11.1	Commissioning.....	5
12.0	COMPLIANCE WITH REGULATIONS, STANDARDS AND CODES.....	5
13.0	PROGRAMME.....	6
14.0	DRAWINGS .....	6
14.1	General.....	6
14.2	Record / As-Built Drawings .....	6
14.3	Construction / Workshop Drawings.....	6
15.0	MEASUREMENT .....	7
16.0	MONTHLY CERTIFICATES.....	7
17.0	WIRING.....	7
18.0	WALL SWITCHES AND SWITCH SOCKET OUTLETS.....	8

## **1.0 INTRODUCTION & GENERAL**

The work covered by this Sub-contract comprises a complete electrical installation to INTERIOR LIGHTING INSTALLATION WORKS FOR KHULA BUSINESS PREMISES (PTY) LTD A SUBSIDIARY OF SMALL ENTERPRISE FINANCE AGENCY SOC LTD (SEFA) AT KWAMAGXAKI SHOPPING COMPLEX.

The Electrical Sub-Contractor will perform the works, according to this specification and drawings, including the supply and installation of all materials and the testing of the installation. The work may also include the installation of such equipment as may be supplied by the Employer or implement changes as instructed in writing by the Electrical Engineer.

Should there be any conflict or ambiguity between sections of this enquiry, then the sections will be considered in the following order of priority:-

- Bills of Quantities
- Project Specification including Equipment Schedules
- Drawings (loose and bound-in)

Should the Tenderer notice any inconsistencies between these sections, it is his responsibility to notify the Engineer in order to obtain clarification thereon.

## **2.0 SCOPE OF WORK**

This project provides for the construction new building for INTERIOR LIGHTING INSTALLATION WORKS FOR KHULA BUSINESS PREMISES (PTY) LTD A SUBSIDIARY OF SMALL ENTERPRISE FINANCE AGENCY SOC LTD (SEFA) AT KWAMAGXAKI SHOPPING COMPLEX. The site shall entail various buildings.

This contract comprises of the interior lighting installation only.

Other electrical installations like LV Mains cabling, Distribution Boards and wiring for the lights shall be installed by others on a different contract which may run at the same time as this one.

### **2.1 SUPPLY AND CONNECTION**

The supply to all the Electrical installation shall be, 400/230 Volts, 3 phase, 4 wire, 50 Hertz, Earthed Neutral.

### **2.2 Temporary Works**

No temporary works are envisaged in the current design and planned execution of the works except where the Electrical Contractor wants to incorporate it as part of his work method. In the case of the latter the Electrical Contractor must price the temporary works in the tendered rates.

### **3.0 SYSTEM LOW VOLTAGE**

The supply to all the Electrical installation shall be 400/230 Volts, 3-phase, 4 wire, 50 Hertz, Earthed Neutral.

### **4.0 QUALITY OF MATERIALS**

Materials are to comply with the relevant South African National Standards (SANS), or to IEC specifications, where no SABS specifications exist. All materials used shall bear the SABS mark of approval as applicable.

***NB: All materials must be of South African manufacture. The Electrical Contractor must submit proof of unavailability where this requirement cannot be fulfilled.***

### **5.0 BUILDER'S WORK**

Subject to negotiations the following may be provided by the Principal Contractor under the building works contract:-

- Openings through walls, floor slabs, etc.
- Manholes and covers
- Making good all penetrations through walls and Concrete
- Making good all chasing

### **6.0 SCHEDULES OF INFORMATION**

The schedule of information contained in this document consists of 2 sections:

- a) Information supplied by the Engineer (schedules of drawings, cables, distribution boards, etc. as applicable.)
- b) Information to be supplied by the Electrical Contractor at tender stage (tender form, information on the makes, types and ratings of equipment and materials offered, schedules of prices and rates for variations, schedules of quantities, etc. as applicable.)

Tenderers are required to enter, at the time of tendering, in the "Schedule of Equipment and Material Offered", sufficient details to enable the equipment concerned to be identified without ambiguity.

It is not sufficient for a tender to state "as specified" in the schedules.

Failure to complete these schedules (if applicable) may render a tender invalid.

## 7.0 **SCHEDULE OF LUMINAIRES**

This schedule details minimum requirements for the luminaires. Tenderer to complete schedule of information with their offered luminaires as stated on “Schedule of Information” below.

Lamps for rectangular lamps may either be LED tubes, strips or any other reputable technology.

### 7.1 **All luminaires to**

- have Class A2 electronic control gear,
- LEDs to have suitable constant current drivers,
- 3m cable with 5A plug,
- bear a SABS or IEC mark of quality approval

### 7.2 **LED luminaires to be 4000K with Ra of not less than 80 for interior installations and not less than 70 for outdoor lights**

Type	Description
A	45W LED Narrow Linear surface mounted luminaire with: <ul style="list-style-type: none"> <li>• Body – Plastic &amp; Aluminium</li> <li>• Driver – external driver complete with cable for joining onto other luminaires where necessary</li> <li>• Beam angle - 120°</li> <li>• Minimum Dimensions –1600mm long</li> <li>• Lumens – 6000lm (minimum)</li> </ul>
B	60W LED Narrow Linear surface mounted luminaire with: <ul style="list-style-type: none"> <li>• Body – Plastic &amp; Aluminium</li> <li>• Driver – external driver, complete with cable for joining onto other luminaires creating a “daisy chain” as shown on lighting layout</li> <li>• Beam angle - 120°</li> <li>• Minimum Dimensions –1600mm long</li> <li>• Lumens – 6000lm (minimum)</li> </ul>
G1	Vapour Proof luminaire with 44W LED strips surface wall/ceiling mounted with: <ul style="list-style-type: none"> <li>• Diffuser – Translucent polycarbonate UV stabilized diffuser</li> <li>• Minimum Dimensions –1250mm (L)</li> <li>• Lumens – 4300lm (minimum)</li> <li>• Protection - IP 65</li> </ul>
Z1	Round downlighter 29W, 230V LED complete with

	<ul style="list-style-type: none"> <li>• Color – Warm White 3000K</li> <li>• Dimensions – minimum 105mm diameter ceiling cutout</li> <li>• Beam angle - 90°</li> <li>• Molded plastic - white trim ring</li> <li>• Lumens – 2500lm (minimum)</li> </ul>
Z2	<p>Round downlighter 29W, 230V LED complete with</p> <ul style="list-style-type: none"> <li>• Color – Warm White 4000K</li> <li>• Dimensions – minimum 105mm diameter ceiling cutout</li> <li>• Beam angle - 90°</li> <li>• Molded plastic - white trim ring</li> <li>• Lumens – 2500lm (minimum)</li> </ul>
Z3	<p>Round slim-line recessed downlighter 9W, 230V LED complete with</p> <ul style="list-style-type: none"> <li>• Color – Warm White 4000K</li> <li>• Dimensions – minimum 105mm diameter ceiling cutout</li> <li>• Beam angle - 120°</li> <li>• Molded plastic - white trim ring</li> <li>• Lumens – &gt;95lm</li> </ul>
TL	<p>40W LED Track light 3000K luminaire complete with:</p> <ul style="list-style-type: none"> <li>• Track for track light (Black)</li> <li>• Track connectors</li> <li>• Surface mounted on cable tray or ceiling suspended.</li> </ul>
TL1	<p>40W LED Track light 4000K luminaire complete with:</p> <ul style="list-style-type: none"> <li>• Track for track light (Black)</li> <li>• Track connectors</li> <li>• Surface mounted on cable tray or ceiling suspended.</li> </ul>

## 8.0 **SAMPLES AND ALTERNATIVES**

- 8.1 Prior to installation the Electrical Contractor is required to submit for approval, comment or records, samples of materials upon which his offer is based. Any approvals given or comments made shall be on the generality of the scheme and shall not relieve the Electrical Contractor of his responsibility to ensure full compliance with all performance and regulatory criteria and materials latent defects.
- 8.2 Samples forwarded shall be labelled and remain in the site stores until completion of the Works. The samples may be the last items to be embodied in the installation.

- 8.3 All expenses in connection with the supply and return of the samples shall be borne by the Electrical Contractor.

## **9.0 SUPERVISION, WORKMANSHIP AND DELAYS**

The work shall at all times, for the entire duration of the contract, be executed under the supervision of a skilled and competent representative of the Electrical Contractor, who must be able and authorized to receive and execute instructions on behalf of the Electrical Contractor.

In the event that inferior materials or bad workmanship, on the part of the Electrical Contractor, leads to remedial work requiring redesign by the Engineer, the cost of this work, including related professional fees, shall be borne by the Electrical Contractor.

## **10.0 MAKING GOOD**

The Electrical Contractor will carry out in all instances any work to be made good such as damage to or disturbances of the building installations caused by himself or his employees during the execution of the contract, at his own cost.

## **11.0 COMMISSIONING AND TESTING**

### **11.1 Commissioning**

A documented method shall be followed whereby the Electrical Contractor shall ensure that his installation is correctly constructed in accordance with the manufacturers' specifications, consultant's specification, consultant's design and all codes of practice and international design codes.

The commissioning procedure must allow for signing off of the major items of equipment by a qualified person in terms of the codes. These signed off documents will form part of the record drawings.

## **12.0 COMPLIANCE WITH REGULATIONS, STANDARDS AND CODES**

The Electrical Contractor will arrange for all inspections and testing of the installation after completion, including the issuing of the Certificate of Compliance. All notices, fees, including inspection and re-inspection are the responsibility of the Electrical Contractor and all the relevant costs shall be borne by him.

The workmanship throughout the Works will be to the satisfaction of the Employer. Any materials or workmanship considered as faulty or incorrectly or inadequately erected or repaired, will be substituted, altered or rectified to the satisfaction of the Employer, without additional cost to the Employer.

The Works will be executed in strict accordance with the latest following guidelines:-

- (a) SANS 10142-1: "The wiring Code of Practice",
- (b) Interior Lighting Part 1: Artificial Lighting of Interiors; Part 2: Emergency Lighting – SANS 10114-1
- (c) The Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended,

### **13.0 PROGRAMME**

The Electrical subcontractor must conform to the programme as submitted by the Principal Contractor. The cost of overtime, additional labour and plant for the completion of the works, in accordance with the programme, must be included in the Tenderer's price for the project. The cost of any work outside the requirements of the programme or necessary under exceptional circumstances will be for the Employers' account only if covered under a variation order.

### **14.0 DRAWINGS**

#### **14.1 General**

Generally, the term "detail" shall mean that the drawing is exact in all aspects to what shall be provided. Where the term "illustration" is used, however, it shall be construed that the drawing is to be regarded as a proposal or guideline as to what is to be provided, manufactured or supplied.

#### **14.2 Record / As-Built Drawings**

The Electrical Contractor must prepare record/as-built drawings of the completed installation as constructed e.g. indicating actual cable runs, circuiting, distribution board details, final cable sleeves positions, luminaire and power point layout details. The contract will not be deemed complete until these drawings have been submitted.

#### **14.3 Construction / Workshop Drawings**

The Electrical sub-contractor shall submit, in triplicate, installation drawings within 21 (twenty one) days after the signing of the Contract, to allow the Consulting Engineer to examine and approve them before equipment manufacture is started, or material delivered to site.

Should the Consulting Engineer require that any drawing be amended, the Electrical Contractor shall make the necessary alterations and re-submit the drawing within 2 (two) weeks.

The Engineer's approval of construction or workmanship drawings does not relieve the Electrical Contractor of his responsibility with regards to any of the deviations from the requirements of this contract unless the Engineer has been clearly informed, in writing, of such deviations at the time of submission and the Engineer subsequently gives written approval for the specific deviation. Similarly, the Engineer's approval shall not relieve the Electrical Contractor of responsibility for errors or omissions in the construction / workmanship drawings.

Delays caused by the submission of drawings or by an error, omission or inadequacy in these drawings, shall not be considered a reason for an extension of the Contract time.



## **15.0     MEASUREMENT**

The Electrical Contractor shall not make any assumption regarding the installation. If there is any doubt or ambiguity, the Engineer must be consulted. The Electrical Contractor shall take cognisance of the fact that the schedule of quantities is re-measurable and the quantities may be adjusted at the end of the contract.

- a) All outlet boxes up to 100 x 100mm are measured as one item regardless of the number of entries.
- b) Conduit boxes shall always include the fixing to the conduit with lock and bush nuts as specified.
- c) All switches and plug units shall include the fixing to conduit as specified.
- d) Outlet boxes shall be without covers and draw boxes shall include covers, screws, etc.
- e) Light switches, switch plugs, etc. shall include screws, cover plates and other equipment specified.
- f) All fittings and accessories always include the connections thereto. All light fittings shall be complete with lamps and tubes, unless otherwise stated in the Bill.
- g) All measurements are net, unless otherwise stated, and Tenderers must allow in the rate for wastage.

## **16.0     MONTHLY CERTIFICATES**

Pro forma claim forms are available from the Engineer. These are available in a blank copied format or as a computer file in Excel. This is the preferred method of submitting payment claims. Should the Electrical Contractor have developed his own method of claiming, this may be submitted to the Engineer for consideration.

## **17.0     WIRING**

Lighting and Power wiring in conduit and channel wireways shall comprise 600/1000V single core PVC insulated copper wire sized in accordance with the distribution board schematics. Conductor outer sheaths shall be of the following colours:-

- Phase Conductors                                 :         red, white, blue
- Neutral     :         black
- Earth     :         yellow + green

Sizes and types of wiring for installation shall be:

- Lighting circuits:     1,5mm<sup>2</sup> and 2.5mm<sup>2</sup> copper earth conductor
- Socket-outlet circuits:     2,5mm<sup>2</sup> and 2,5mm<sup>2</sup> copper earth conductor.
- HVAC and ventilation circuits:     4mm<sup>2</sup> and 6mm<sup>2</sup> copper earth conductor

## **18.0 WALL SWITCHES AND SWITCH SOCKET OUTLETS**

Wall switches to be of the flush type complete with cover plates and screws in 100 x 50 x 50 extension outlet boxes mounted on the wall surfaces. Colours of outlet boxes and cover plates must match.

All surfaces mounted switch socket outlets to be in 100 x 100 x 50 extension outlet boxes mounted on the wall surfaces. Colours of outlet boxes and cover plates must match.

All switched socket outlets mounted in power skirting to have matching cover plates.

Further details of these outlets are on Particular Specifications.

The Electrical sub-contractor will be responsible for the installation of power points to feed equipment such as water heaters, air-conditioners, fans, security equipment, etc. This equipment, will be supplied and installed by others, and connected by the Electrical sub-contractor.

The cover plates to all outlets shall be fixed **AFTER** the final coat of paint has been applied. The Tenderer shall allow for this in his programme and pricing of the Works.

All light switches and power points shall be labelled with indelible circuit number to labels to tie up with a circuit number in the distribution boards. Labels that peel off easily shall not be acceptable.

### **18.1 Floor access boxes**

Floor access boxes with cradles and outlets as shown on various power layouts shall be installed flush into floor screed. The subcontractor shall be responsible to coordinate the positions with the main contractor during pouring of the floor to avoid unnecessary cutting of the finished floors.

The box shall be supplied and installed complete with conduit boxes, stainless steel frame & lid and levelling frames. The boxes shall be big enough to cater for outlets as shown on the power layout and bills of quantities.