

# **DATA CENTRE AT SENTECH'S NASREC FACILITY**

## **RAISED ACCESS FLOOR**

### **SCOPE OF WORK**

#### **1. DESCRIPTION OF THE WORKS**

Sentech is planning an internal upgrade to its existing Nasrec Facility. The internal upgrade involves the conversion of underutilized internal floor area into a Data Centre. Part of this upgrade will involve the supply and installation of raised access flooring. The raised access floor void will facilitate the under floor HVAC cold air plenum and will serve as the structural floor for the data racks to be deployed in the Data Centre, at the facility.

#### **2. SCOPE OF WORK**

The scope of work for this contract includes:

- Demolition works – removal of porcelain floor tiles (dependent on floor design)
- Floor repair works (dependent on floor design)
- Design, supply and installation of raised access flooring and ancillary items

#### **3 INFORMATION**

The following information/specifications together with the quotation site inspection and attached drawings/documentation, detail the requirement and will assist in compiling a quotation:

##### **Documents**

- SABS 1549:1993 / SANS 52825:2009 is the applicable SANS standard for Raised Access Floors. This SANS standard is not supplied with this document. The onus is on the contractor to obtain his/her own copy of the standard
- Schedule of Cost
- Google Locality and Google Site Plan
- Proposed floor and rack layout drawing supplied with this document - NASREC/FL/100

##### **Existing Room**

- Overall room area – 94m<sup>2</sup>
- Floor covering – Porcelain tile
- Subfloor – Mesh reinforced concrete
- Walls are hollow block or drywall

##### **Data For Raised Floor Design**

- Proprietary modular, static dissipative raised flooring system manufactured under an accredited iso management system
- Design of structural raised floor understructure by raised floor contractor/manufacture
- Pedestal with bolt-on stringer system with a "heavy duty floor" designation
- Minimum height from FFL to underside of raised floor panel for HVAC purposes – 600mm
- Proposed raised access floor height 680mm above FFL
- Proposed floor and rack layout drawing indicates heights relative to the existing Porcelain tile level
- 600x2400 Electrical distribution board will stand on top of the raised access floor (weight to be advised)
- Electrical cable management system, by Sentech appointed Electrical contractor, supported from the roof slab soffit. Installation of the cable management system will take place after the installation of the raised floor
- Data cable management system, by Sentech appointed Electrical contractor, supported from the roof slab soffit. Installation of the cable management system will take place after the installation of the raised floor
- Access floor void to be utilized as a HVAC plenum, with maximum 100kPa pressurization
- HVAC CCU units will stand on the porcelain tile/subfloor. Installation of the HVAC CCU units will take place after the installation of the raised floor (floor opening size to be advised)
- HVAC piping management system, by Sentech appointed HVAC contractor, supported from

the roof slab soffit. Installation of the HVAC piping will take place after the installation of the raised floor

- HVAC contractor to supply damper controlled air grill panels
- Access to the raised floor from two points [Entrance (North) and Passage (South)] via a stairwell and new steps
- Fully populated electronic equipment rack weight (unknown)

The Contractor shall be responsible for the design and safety of any temporary formwork/support work required during construction.

The Employer retains the right to issue additional drawings during the progress of the works.

The Contractor will be supplied with two full-scale prints of the proposed floor and rack layout drawing.

Dimensions on drawings take precedence over dimensions to scale and detail drawings take precedence over general arrangement drawings as well as over the Schedule of Cost, but the Contractor must bring all cases of ambiguity or discrepancy to the attention of Sentech before he/she proceeds with the various works.

Sentech's Project Manager shall be the point of contact for the Contractor from commencement of the Works.

#### **Site Availability**

The site will be available immediately, once a quotation is accepted, and once Sentech issues a Purchase Order. The Contractor will be required to initiate the project immediately on receipt of a Purchase Order. Sentech's Project Manager will integrate the raised access floor works program with the overall Works program

## **4 CONSTRUCTION**

#### **Shop Drawings**

Shop drawings to be provided by the manufacturer/contractor and to indicate pedestal positions, floor panel layout, step layouts and elevations, to facilitate the planning of Rack, HVAC, Electrical and Data layouts.

#### **Inclement Weather**

Weather delays are not seen to be applicable due to the Works are to be conducted inside the building.

#### **Utilities on Site**

Single phase electricity supply will be available to the Contractor.

The Contractor shall make provision for toilet facilities for his workforce, for the duration of the works, by means of the supply, daily cleaning and removal on completion of suitable chemical toilets erected in an area demarcated by Sentech

Potable water required for drinking and the execution of the contract works is available on site. It shall be the responsibility of the contractor to provide any hosepipes and adapters required for the execution of the works

No site telephone is available on site. Contractor to provide for these facilities where necessary

Accommodation and washing facilities are not available in the Sentech building or at the site. The contractor must provide suitable washing facilities for staff members.

#### **Contract Works Area**

All areas outside the demarcated site fencing are to be considered public areas and as such are not owned by Sentech. The Contractor shall confine his activities to the Contract Works site within the site fencing.

The Contractors' working area will be demarcated on site by Sentech and handed over to the Contractor soon after the award of the Contract.

The construction area may not exceed the current boundaries of the Sentech site – i.e. all equipment and materials must be stored within Sentech's fenced off area.

The Contractor shall provide all reasonable measures necessary to protect the existing and/or partially occupied works to ensure that they are not damaged and he shall remove such protection on completion.

The Contractor will be required to remove all facilities established on site for construction and restore the site to its original condition on completion of the Works.

Work is to be executed during normal working hours.

Sentech expects the Contractor, his staff or agents to maintain good public relations with other Contractors, other site users and members of the public at all times.

All equipment, materials, etc. is left on the premises at the Contractors own risk.

No fires shall be made on Sentech property.

#### **Site Cleaning and Rubble Removal**

The Contractor shall be responsible for the daily cleaning of all areas which he occupies or works on under this contract and clearing and removal of all rubble from the site to a Municipal designated dumping site. The Contractor is to allow for the cost of site cleaning and rubble removal in his Quotation.

#### **OHS**

The Contractor will be responsible for all Occupational Health and Safety (OHS) requirements as governed by the OHS Act for the full duration of the Contract.

Prior to the commencement of work on site, the Contractor will be required to submit a Health and Safety File complying to both the requirements and format required by Sentech. As part of these requirements, the Contractor is to provide proof that he is in Good Standing with the compensation fund and proof of Public Liability insurance.

The Contractor is to allow for the cost of Health and Safety measures in his Quotation.

#### **Quality Assurance**

The Contractor shall arrange for all the work done at the site to be inspected either by his own inspection staff or by an approved inspection authority.

Requests for Sentech to inspect such work shall only be made after the Contractor's inspectorate has inspected and approved the work.

Requests for the inspection of critical work at hold points should be made well in advance of the requirement, in order for Sentech to make the necessary travel arrangements.

Sentech reserves the right, however, to inspect the works at any stage and without prior notice of inspection.

Sentech reserves the right to intervene at any stage if it is believed that the work is unsafe or not according to specification.

#### **Program and Progress Reporting**

Timeous execution of the project as a whole is of paramount importance to Sentech. To ensure this and to assist the Contractor to monitor his own progress, he will be required to provide a detailed execution program within 10 days after award of Contract. This program shall provide the following information in either data listing format or bar chart and network diagram format:

Activity description  
Activity duration  
Activity logic (inter-dependencies, delays)  
Resource allocations (plant, labour)  
Key dates

This execution program will be used to monitor and report on the Contractor's progress.

The execution program will incorporate HVAC and Electrical constraints. Details of these constraints will be supplied by Sentech's Project Manager. The work sequence must follow logically. Non-working days are Sundays. Special non-working days are statutory public holidays.

Weekly reports are to be compiled and submitted to Sentech's Project Manager via e-mail. Detailed photographic evidence of progress must be included in the weekly report.

#### **Project Closeout Submittals**

- Manufacturer's installation instructions and guidelines.
- Manufacturer's Owner Manual outlining recommended care and maintenance procedures.
- Certification/load calculations confirming that the raised floor system supplied has been designed in accordance with all recognized local/international requirements. Certification will form part of Sentech's application for Tier 3 certification
- Maximum rack loading, in kilograms
- Maximum live load/rolling load in between racks as well as steps, in kilograms
- As-installed Auto-Cad drawings
- Warranty documentation

## **5 LOCATION OF THE WORKS**

Sentech's Nasrec Facility is situated on the corner of Nasrec Road and Recreation Road, adjacent to the Nasrec events complex in Gauteng. The facility entrance is via road Nasrec 5.

Entrance Co-ordinates : 26° 14' 37" S and 27° 59' 03" E

Google Site Locality



Google Site Plan

