

BILL NO1: BULK SUPPLY & RETICULATION

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NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL NO2 : CONFERENCE CENTRE : ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
	The complete installation must comply SANS 0142 specifications and the Quality specifications. Therefore Tenders are advised to study the specification and drawings before the Bill is to be priced.					
1	CONDUITS					
1.1	Supply and install pipes including short lengths jointing, sweeping bends, buses, locknuts, roundboxes etc.:					
1.1.1	20mm diameter PVC pipe cast into concrete, brick work or suspended in ceiling voids	meter	1700			
1.1.3	20mm diameter copex conduit	meter	100			
1.2	Supply and install steel galvanised walls boxes complete with all accessories					
1.2.1	100mm x 50mm x 50mm deep	each	200			
1.2.2	100mm x 100mm x 50mm deep	each	100			
1.2.3	Supply and install 1,6mm diameter steel galvanised draw wires drawn into conduit/sleeves:	meter	1800			
1.2.4	Supply and install 100mm x 100mm blank cover plates	each	10			
1.2.5	Supply and install 20mm diameter 4 way PVC round boxes	each	425			
1.2.6	Supply and install 25mm diameter 4 way PVC round boxes	each	25			
1.2.6	Supply and install 100mm X 50 blank plates	each	10			
2	ELECTRICAL CABLE MANAGEMENT & TRUNKING					
	Supply, Install, Test and Commission					
2.1	Galvanised unistrut suspended from structure in the roof. Fixings not to exceed 4m including galvanized steel cover (Rates to include: Tees, Bends, 4 ways, ends and all other accessories) .					
2.1.1	P9000 Unistrut	m	300			
2.1.2	P2000 Unistrut	m	100			
2.2	Power Skirting Aluminium:(To include All: elbows, corners sections, T-sections & end caps)					
2.2.1	Cabstrut N8/P803, 3-way with 3 cover plates & dividers	m	60			
3	DISTRIBUTION BOARDS (Refer to schematic diagrams)					
3.1	DB-CC	each	1			
4	CONDUCTORS					
4.1	Supply and install 600/1000Volt PVC insulated stranded copper conductors drawn into conduits, etc. (Wiring for lighting circuits is to be carried out with 2,5mm ² conductors and 2,5mm ² earth conductors. For socket outlet circuits the wiring shall comprise of 4 mm ² conductors with 2, 5mm ² earth conductors)					
4.1.1	2.5mm ²	meter	4500			
4.1.2	4mm ²	meter	2000			
4.1.3	6mm ²	meter	500			
4.2	Earth Wire					
4.2.1	2.5mm ²	meter	3250			
4.2.2	4mm ²	meter	250			
	AMOUNT CARRIED FORWARD					

NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL NO2 : CONFERENCE CENTRE : ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
	AMOUNT BROUGHT FORWARD					
5	SOCKETS OUTLETS					
	Supply, install and connect socket outlets in flush wall mounted boxes, power skirting, trunking or surface if required complete with cover plates and all necessary accessories:					
5.1	Supply and install 230V, 16A combination switched socket outlets (with 1 x standard 16A round 3 pin socket + 1 x 3 pin ZA plug socket combined) flush mounted on the wall c/w steel cover plate (white) suitable to accommodate SANS 164-1 & SANS 164-2 socket outlets.	each	50			
5.2	Supply and install 230V, 16A combination switched socket outlets (with 1 x standard 16A round 3 pin socket + 1 x 3 pin ZA plug socket combined) with weatherproof (IP44) box flush mounted on the wall c/w steel cover plate (white) suitable to accommodate SANS 164-1 & SANS 164-2 socket outlets.	each	2			
5.3	Supply and install 230V, 16A standard round 3-pin switched socket outlets flush mounted on the power skirting c/w steel cover plate suitable to accommodate SANS 164-1 socket outlets.	each	15			
5.4	Supply and install 230V, 16A dedicated round 2-pin + shaped earth pin switched socket outlets flush mounted on the power skirting c/w steel cover plate (red) suitable to accommodate SANS 164-1 socket outlets.	each	15			
5.5	Supply and install 230V, 16A 3-pin ZA plug switched socket outlets flush mounted on the power skirting c/w steel cover plate (red) suitable to accommodate SANS 164-2 socket outlets.	each	15			
5.6	Supply and install cluster unit to accommodate: 1 x 16A standard round 3-pin switched socket outlet, 16A 3-pin ZA plug switched socket outlet + 1 x RJ11 telephone outlet and RJ45 data outlet complete with covers, blank plates and all necessary accessories (to be installed in 1 tier wall box). Rates to include blank covers for RJ11 and RJ45 only as these outlets are measured under ICT.	each	2			
5.7	Supply and install 5 Amp single un-switched Socket outlet (complete with 60mm pvc round box for light fittings). The socket to be mounted on the trunking or somewhere else in the ceiling void.	each	230			
6	SWITCHES					
	Supply, install and connect light switches in flush wall mounted boxes, complete with cover plates and all necessary accessories:					
6.1	Supply and install 16A one lever one way light switch flush mounted on the wall	each	30			
6.2	Supply and install 16A two lever one way light switch flush mounted on the wall	each	4			
6.3	Supply and install 16A one lever two way light switch flush mounted on the wall	each	10			
6.4	Supply and install Day light switch/photocell	each	4			
6.5	Supply and install occupancy sensors	each	30			
7	ISOLATORS					
	Supply, install and connect isolators in flush wall mounted boxes or surface, complete with cover plates and all necessary accessories (Isolators to be mounted within one meter of the equipment to be controlled).					
7.1	Supply and install 230V, 30A double pole isolator surface mounted in the ceiling void or wall. Rates to include 4 inch x 4 inch extension box	each	20			
7.2	Supply and install 230V, 60A double pole isolator surface mounted in the ceiling void or wall. Rates to include 4 inch x 4 inch extension box	each	2			
7.3	Supply and install 4000V, 30A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.4	Supply and install 4000V, 60A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.5	Supply and install 4000V, 80A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.6	Supply and install 4000V, 100A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
	AMOUNT CARRIED FORWARD					

BILL NO2 : CONFERENCE CENTRE : ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
	AMOUNT BROUGHT FORWARD					
8	LUMINAIRES					
	Supply, install and connect luminaires complete with lamps, fixings, brass screws, washers, etc. All recessed light fittings should be supplied with 3m connection lead					
8.1	Type F9 (1150mm long surface mounted light fitting c/w 33W LED, 5609 lumens, IP54, 4 000K, UV stabilised polycarbonate diffuser, electronic control gear)	each	2			
8.2	Type C (232 diameter decorative Bekarondo ECO 19W LED Downlight)	each	160			
8.3	Type C/E (232 diameter decorative Bekarondo ECO 19W LED Downlight) come with full load battery pack	each	10			
8.4	Type D (Wall mounted 20W serie 31 Beka bulkhead)	each	30			
8.5	Type F12 (Recessed 1200x600 LED panel light fitting c/w 60W LED , 5907 lumens, IP40, UV polycarbonate diffuser, 2m x 0.75mm ² flex cable, 5A unswitched socket outlet, 5A plug top, electronic control gear and 5 year warranty)	each	2			
9	TELECOMMUNICATION AND DATA					
9.1	RJ11 cover plate on the wall or Power skirting	each	5			
9.2	RJ45 cover plate on wall or Power skirting	each	22			
9.3	450mm x 300mm x 125mmdeep telephone wall box	each	1			
10	TESTING AND COMMISSIONING					
10.1	Inspections, testing and handing over of the complete installation in the presence of the Engineer and certify the results on the <i>Certificate of compliances by an accredited person.</i>	item	1			
	TOTAL CARRIED TO SUMMARY PAGE					

NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL NO3 : HOTEL 1 : ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
	The complete installation must comply SANS 0142 specifications and the Quality specifications. Therefore Tenders are advised to study the specification and drawings before the Bill is to be priced.					
1	CONDUITS					
1.1	Supply and install pipes including short lengths jointing, sweeping bends, buses, locknuts, roundboxes etc.:					
1.1.1	20mm diameter PVC pipe cast into concrete, brick work or suspended in ceiling voids	meter	1500			
1.1.3	20mm diameter copex conduit	meter	100			
1.2	Supply and install steel galvanised walls boxes complete with all accessories					
1.2.1	100mm x 50mm x 50mm deep	each	150			
1.2.2	100mm x 100mm x 50mm deep	each	100			
1.2.3	Supply and install 1,6mm diameter steel galvanised draw wires drawn into conduit/sleeves:	meter	1600			
1.2.4	Supply and install 100mm x 100mm blank cover plates	each	10			
1.2.5	Supply and install 20mm diameter 4 way PVC round boxes	each	375			
1.2.6	Supply and install 25mm diameter 4 way PVC round boxes	each	25			
1.2.6	Supply and install 100mm X 50 blank plates	each	10			
2	ELECTRICAL CABLE MANAGEMENT & TRUNKING					
	Supply, Install, Test and Commission					
2.1	Galvanised unistrut suspended from structure in the roof. Fixings not to exceed 4m including galvanized steel cover (Rates to include: Tees, Bends, 4 ways, ends and all other accessories) .					
2.1.1	P9000 Unistrut	m	80			
2.1.2	P2000 Unistrut	m	20			
2.2	Power Skirting Aluminium:(To include All: elbows, corners sections, T-sections & end caps)					
2.2.1	Cabstrut N8/P803, 3-way with 3 cover plates & dividers	m	20			
3	DISTRIBUTION BOARDS (Refer to schematic diagrams)					
3.1	DB-D1	each	1			
4	CONDUCTORS					
4.1	Supply and install 600/1000Volt PVC insulated stranded copper conductors drawn into conduits, etc. (Wiring for lighting circuits is to be carried out with 2,5mm ² conductors and 2,5mm ² earth conductors. For socket outlet circuits the wiring shall comprise of 4 mm ² conductors with 2, 5mm ² earth conductors)					
4.1.1	2.5mm ²	meter	3200			
4.1.2	4mm ²	meter	2200			
4.1.3	6mm ²	meter	500			
4.2	Earth Wire					
4.2.1	2.5mm ²	meter	2700			
4.2.2	4mm ²	meter	250			
	AMOUNT CARRIED FORWARD					

NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL NO3 : HOTEL 1 : ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
	AMOUNT BROUGHT FORWARD					
5	SOCKETS OUTLETS					
	Supply, install and connect socket outlets in flush wall mounted boxes, power skirting, trunking or surface if required complete with cover plates and all necessary accessories:					
5.1	Supply and install 230V, 16A combination switched socket outlets (with 1 x standard 16A round 3 pin socket + 1 x 3 pin ZA plug socket combined) flush mounted on the wall c/w steel cover plate (white) suitable to accommodate SANS 164-1 & SANS 164-2 socket outlets.	each	102			
5.2	Supply and install 230V, 16A combination switched socket outlets (with 1 x standard 16A round 3 pin socket + 1 x 3 pin ZA plug socket combined) with weatherproof (IP44) box flush mounted on the wall c/w steel cover plate (white) suitable to accommodate SANS 164-1 & SANS 164-2 socket outlets.	each	2			
5.3	Supply and install 230V, 16A standard round 3-pin switched socket outlets flush mounted on the power skirting c/w steel cover plate suitable to accommodate SANS 164-1 socket outlets.	each	2			
5.4	Supply and install 230V, 16A dedicated round 2-pin + shaped earth pin switched socket outlets flush mounted on the power skirting c/w steel cover plate (red) suitable to accommodate SANS 164-1 socket outlets.	each	2			
5.5	Supply and install 230V, 16A 3-pin ZA plug switched socket outlets flush mounted on the power skirting c/w steel cover plate (red) suitable to accommodate SANS 164-2 socket outlets.	each	2			
5.6	Supply and install cluster unit to accommodate: 1 x 16A standard round 3-pin switched socket outlet, 16A 3-pin ZA plug switched socket outlet + 1 x RJ11 telephone outlet and RJ45 data outlet complete with covers, blank plates and all necessary accessories (to be installed in 1 tier wall box). Rates to include blank covers for RJ11 and RJ45 only as these outlets are measured under ICT.	each	2			
5.7	Supply and install 5 Amp single un-switched Socket outlet (complete with 60mm pvc round box for light fittings). The socket to be mounted on the trunking or somewhere else in the ceiling void.	each	150			
6	SWITCHES					
	Supply, install and connect light switches in flush wall mounted boxes, complete with cover plates and all necessary accessories:					
6.1	Supply and install 16A one lever one way light switch flush mounted on the wall	each	35			
6.2	Supply and install 16A two lever one way light switch flush mounted on the wall	each	2			
6.3	Supply and install 16A one lever two way light switch flush mounted on the wall	each	2			
6.4	Supply and install Day light switch/photocell	each	2			
6.5	Supply and install occupancy sensors	each	4			
7	ISOLATORS					
	Supply, install and connect isolators in flush wall mounted boxes or surface, complete with cover plates and all necessary accessories (Isolators to be mounted within one meter of the equipment to be controlled).					
7.1	Supply and install 230V, 30A double pole isolator surface mounted in the ceiling void or wall. Rates to include 4 inch x 4 inch extension box	each	15			
7.2	Supply and install 230V, 60A double pole isolator surface mounted in the ceiling void or wall. Rates to include 4 inch x 4 inch extension box	each	2			
7.3	Supply and install 4000V, 30A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.4	Supply and install 4000V, 60A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.5	Supply and install 4000V, 80A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.6	Supply and install 4000V, 100A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
	AMOUNT CARRIED FORWARD					

BILL NO3 : HOTEL 1 : ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
	AMOUNT BROUGHT FORWARD					
8	LUMINAIRES					
	Supply, install and connect luminaires complete with lamps, fixings, brass screws, washers, etc. All recessed light fittings should be supplied with 3m connection lead					
8.1	Type F9 (1150mm long surface mounted light fitting c/w 33W LED, 5609 lumens, IP54, 4 000K, UV stabilised polycarbonate diffuser, electronic control gear)	each	2			
8.2	Type C (232 diameter decorative Bekarondo ECO 19W LED Downlight)	each	10			
8.3	Type C/E (232 diameter decorative Bekarondo ECO 19W LED Downlight) come with full load battery pack	each	2			
8.4	Type D (Wall mounted 20W serie 31 Beka bulkhead)	each	15			
8.5	Type C1 (75 diameter decorative Bekarondo ECO 6W LED Downlight)	each	120			
9	TELECOMMUNICATION AND DATA					
9.1	RJ11 cover plate on the wall or Power skirting	each	1			
9.2	RJ45 cover plate on wall or Power skirting	each	5			
9.3	450mm x 300mm x 125mmdeep telephone wall box	each	1			
10	TESTING AND COMMISSIONING					
10.1	Inspections, testing and handing over of the complete installation in the presence of the Engineer and certify the results on the <i>Certificate of compliances by an accredited person.</i>	Item	1			
	TOTAL CARRIED TO SUMMARY PAGE					

NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL NO4 : HOTEL 2 : ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
	The complete installation must comply SANS 0142 specifications and the Quality specifications. Therefore Tenders are advised to study the specification and drawings before the Bill is to be priced.					
1	CONDUITS					
1.1	Supply and install pipes including short lengths jointing, sweeping bends, buses, locknuts, roundboxes etc.:					
1.1.1	20mm diameter PVC pipe cast into concrete, brick work or suspended in ceiling voids	meter	1500			
1.1.3	20mm diameter copex conduit	meter	100			
1.2	Supply and install steel galvanised walls boxes complete with all accessories					
1.2.1	100mm x 50mm x 50mm deep	each	150			
1.2.2	100mm x 100mm x 50mm deep	each	100			
1.2.3	Supply and install 1,6mm diameter steel galvanised draw wires drawn into conduit/sleeves:	meter	1600			
1.2.4	Supply and install 100mm x 100mm blank cover plates	each	10			
1.2.5	Supply and install 20mm diameter 4 way PVC round boxes	each	375			
1.2.6	Supply and install 25mm diameter 4 way PVC round boxes	each	25			
1.2.6	Supply and install 100mm X 50 blank plates	each	10			
2	ELECTRICAL CABLE MANAGEMENT & TRUNKING					
	Supply, Install, Test and Commission					
2.1	Galvanised unistrut suspended from structure in the roof. Fixings not to exceed 4m including galvanized steel cover (Rates to include: Tees, Bends, 4 ways, ends and all other accessories) .					
2.1.1	P9000 Unistrut	m	80			
2.1.2	P2000 Unistrut	m	20			
2.2	Power Skirting Aluminium:(To include All: elbows, corners sections, T-sections & end caps)					
2.2.1	Cabstrut N8/P803, 3-way with 3 cover plates & dividers	m	20			
3	DISTRIBUTION BOARDS (Refer to schematic diagrams)					
3.1	DB-D2	each	1			
4	CONDUCTORS					
4.1	Supply and install 600/1000Volt PVC insulated stranded copper conductors drawn into conduits, etc. (Wiring for lighting circuits is to be carried out with 2,5mm ² conductors and 2,5mm ² earth conductors. For socket outlet circuits the wiring shall comprise of 4 mm ² conductors with 2, 5mm ² earth conductors)					
4.1.1	2.5mm ²	meter	3200			
4.1.2	4mm ²	meter	2200			
4.1.3	6mm ²	meter	500			
4.2	Earth Wire					
4.2.1	2.5mm ²	meter	2700			
4.2.2	4mm ²	meter	250			
	AMOUNT CARRIED FORWARD					

NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL NO4 : HOTEL 2 : ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
	AMOUNT BROUGHT FORWARD					
5	SOCKETS OUTLETS					
	Supply, install and connect socket outlets in flush wall mounted boxes, power skirting, trunking or surface if required complete with cover plates and all necessary accessories:					
5.1	Supply and install 230V, 16A combination switched socket outlets (with 1 x standard 16A round 3 pin socket + 1 x 3 pin ZA plug socket combined) flush mounted on the wall c/w steel cover plate (white) suitable to accommodate SANS 164-1 & SANS 164-2 socket outlets.	each	102			
5.2	Supply and install 230V, 16A combination switched socket outlets (with 1 x standard 16A round 3 pin socket + 1 x 3 pin ZA plug socket combined) with weatherproof (IP44) box flush mounted on the wall c/w steel cover plate (white) suitable to accommodate SANS 164-1 & SANS 164-2 socket outlets.	each	2			
5.3	Supply and install 230V, 16A standard round 3-pin switched socket outlets flush mounted on the power skirting c/w steel cover plate suitable to accommodate SANS 164-1 socket outlets.	each	2			
5.4	Supply and install 230V, 16A dedicated round 2-pin + shaped earth pin switched socket outlets flush mounted on the power skirting c/w steel cover plate (red) suitable to accommodate SANS 164-1 socket outlets.	each	2			
5.5	Supply and install 230V, 16A 3-pin ZA plug switched socket outlets flush mounted on the power skirting c/w steel cover plate (red) suitable to accommodate SANS 164-2 socket outlets.	each	2			
5.6	Supply and install cluster unit to accommodate: 1 x 16A standard round 3-pin switched socket outlet, 16A 3-pin ZA plug switched socket outlet + 1 x RJ11 telephone outlet and RJ45 data outlet complete with covers, blank plates and all necessary accessories (to be installed in 1 tier wall box). Rates to include blank covers for RJ11 and RJ45 only as these outlets are measured under ICT.	each	2			
5.7	Supply and install 5 Amp single un-switched Socket outlet (complete with 60mm pvc round box for light fittings). The socket to be mounted on the trunking or somewhere else in the ceiling void.	each	150			
6	SWITCHES					
	Supply, install and connect light switches in flush wall mounted boxes, complete with cover plates and all necessary accessories:					
6.1	Supply and install 16A one lever one way light switch flush mounted on the wall	each	35			
6.2	Supply and install 16A two lever one way light switch flush mounted on the wall	each	2			
6.3	Supply and install 16A one lever two way light switch flush mounted on the wall	each	2			
6.4	Supply and install Day light switch/photocell	each	2			
6.5	Supply and install occupancy sensors	each	4			
7	ISOLATORS					
	Supply, install and connect isolators in flush wall mounted boxes or surface, complete with cover plates and all necessary accessories (Isolators to be mounted within one meter of the equipment to be controlled).					
7.1	Supply and install 230V, 30A double pole isolator surface mounted in the ceiling void or wall. Rates to include 4 inch x 4 inch extension box	each	15			
7.2	Supply and install 230V, 60A double pole isolator surface mounted in the ceiling void or wall. Rates to include 4 inch x 4 inch extension box	each	2			
7.3	Supply and install 4000V, 30A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.4	Supply and install 4000V, 60A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.5	Supply and install 4000V, 80A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
7.6	Supply and install 4000V, 100A Three phase isolator mounted on the wall or ceiling void. Rates to include 4 inch x 4 inch extension box	each	2			
	AMOUNT CARRIED FORWARD					

BILL NO4 : HOTEL 2 : ELECTRICAL INSTALLATION

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NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A
ELECTRICAL INSTALLATION BILL OF QUANTITIES
BILL NO5 : EARTHING AND LIGHTNING PROTECTION: ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
NOTE:	(a) The earthing & lightning protection installation shall be strictly as per the latest SANS Specifications, these are available from the SABS, and the onus is on the contractor to acquire his /her own copy:(b) Install SABS Approved earthrods (1,5m in length, 16mm Dia copper plated) in pre-drilled holes (55mm Dia) as per drawing. (c) Connect the earthrod via 70mm2 Insulated Copper wire & wire rope clamps/u-bolts to the rebar of the column or testing points. (d) The 70mm2 Insulated Copper wire must be laid in a trench 500mm in depth & the copper must be connected to the earthrod via electrothermic welding. (e) All pre-drilled holes must be backfilled with conductive cement, as per supplier's specification. (f) The roof should be bonded every 20m to the column via 35mm2 Insulated Copper wire (connected to the rebar & connected to the zinc roof.					
1	LIGHTNING PROTECTION					
1.1	Install 1,5m SABS Approved earthrods at a depth off 500mm below ground level	each	46			
1.2	70mm ² Insulated Copper wire	meter	230			
1.3	Bond to test point as per drawing.	each	46			
1.4	Electrochemical /Exothermic connection	each	46			
1.5	Trenching in soft rock (Rate per point- Earthrod)	each	46			
1.6	PVC conduit 25mm diameter (flush mounted in the wall from the roof to the flush galvanised conduit box and from conduit box to the earth peg outside the building)	meter	920			
1.7	105mm x 105 mm galvanized conduit box located 300 mm above finished floor level and fitted with blank PVC cover plates labelled "Earth Test Point".	each	46			
1.8	Conductive Cement	each	46			
1.9	Continuous 35 square mm round solid zinc coated copper strip secured to roof of building, including all clamps, joints and fixing accessories.	meter	552			
2	TESTING AND COMMISSIONING					
2.1	Testing and commissioning and issuing of COC for the complete earthing and lightning protection installation	item	1			
	TOTAL CARRIED TO SUMMARY PAGE					

NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL NO6 : AREA AND SECURITY LIGHTING: ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
1	Supply and install area and security lights as indicated in drawings					
1.1	Type S: Beka KAZELLE LED Post top type luminaire with 71W LED lamp mounted on a 4.6m high pole.	each	35			
1.2	Supply & install 76 mm top diameter hot dipped galvanised steel mast of mineral grey paint finish with overall length of 4.6 m for direct embedment in ground and complete with accessories including 2,5 mm ² internal wiring, BCEW, pole earthing and access cover as per specifications	each	35			
1.3	Supply, install and connect up die cast aluminium body with tempered glass LED floodlight Luminaire equipped with motion sensor. Total power rating of LEDs to be 30W with builtin driver. Adjustable sensor for Lux, time and sensitivity of 25 metre range throughput. IP rating of IP65. Luminaire is describe as Type D in technical specification.	each	0			
2	CABLES, CONDUCTORS & SLEEVES					
2.1	6mm ² x 3 core PVC/SWA/PVC Alu cable (underground cables for post tops)	each	700			
3	GLANDS AND SHROUDS					
3.1	6mm ² x 3 core PVC/SWA/PVC Cu cable	each	70			
4	LIGHTING CONTROL					
4.1	Photocell	each	2			
4.2	32 A contactor switch with 240 V AC coil, enclosed in distribution enclosure and coupled to photocell.	each	2			
5	CABLE MARKERS & WARNING TAPES					
5.1	Cable warning tape	meter	700			
6	SUPPLY & INSTALL UPVC SLEEVES (Rate to include 2,5mm² draw wire)					
6.1	50 diameter	meter	130			
6.2	25mm	meter	300			
7	TRENCHING AND EXCAVATIONS (450mm wide & 800mm deep), Rate to include backfilling, compacting and other necessary materials required for around the cables					
7.1	Pickable soil	m ³	252			
8	TESTING AND COMMISSIONING					
8.1	Testing and commissioning and issuing of COC for the complete lighting installation	item	1			
	TOTAL CARRIED TO SUMMARY PAGE					

BILL NO7 :PHOTOVOLTAIC AND ENERGY STORAGE INSTALLATION

NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL NO8 : ICT & ELECTRONIC INSTALLATION WIREWAYS

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL	LABOUR	TOTAL
NOTE:	The complete installation must comply SANS 0142 specifications and the Quality specifications. Therefore Tenders are advised to study the specification and drawings before the Bill is to be priced.					
1	CONDUITS (Installation of conduits for ICT and Electronic installation)					
1.1	Supply and Install pipes including short lengths jointing, sweeping bends, buses, locknuts, roundboxes etc.					
1.1.1	25mm diameter PVC pipe cast into concrete, brick work or suspended in ceiling voids	meter	600			
1.1.2	32mm diameter PVC pipe cast into concrete, brick work or suspended in ceiling voids	meter	200			
1.1.3	25mm diameter copex conduit	meter	100			
1.2	Supply and install steel galvanised walls boxes complete with all accessories					
1.2.1	100mm x 50mm x 50mm deep	each	60			
1.2.2	100mm x 100mm x 50mm deep	each	120			
1.2.3	Supply and install 1,6mm diameter steel galvanised draw wires drawn into conduit/sleeves:	meter	900			
1.2.4	Supply and install 100mm x 100mm blank cover plates	each	6			
1.2.5	Supply and install 25mm diameter 4 way PVC round boxes	each	150			
1.2.6	Supply and install 32mm diameter 4 way PVC round boxes	each	50			
1.2.7	Supply and install 100mm x 50 blank plates	each	6			
1.2.8	Supply and Install 450mm x 350mm x 125mm deep box	each	3			
1.3	Galvanised unistrut suspended from structure in the roof. Fixings not to exceed 4m including galvanized steel cover (Rates to include: Tees, Bends, 4 ways, ends and all other accessories) .					
1.3.1	P9000 Unistrut	m	120			
	TOTAL CARRIED TO SUMMARY PAGE					

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ELECTRONIC INSTALLATION BILL OF QUANTITIES

BILL NO 9 10G FIBRE OPTIC BACKBONE NETWORK

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
NOTE: The complete installation must comply to electrical installation specifications. Therefore Tenders are advised to study the specifications and drawings before pricing the Bill.					
1	Installation of a modular hierarchical 10G Fibre Optic Backbone Network (For CCTV, Data and IP Telephony) with redundancy as per the drawings.				
2	Multimode fibre, 4 core, OM4	Supply & Install	m	1000	
3	XFP, SFP+ Modules, 10G Transceivers	Supply & Install	No	20	
4	24 Port Multimode ST / SC Simplex 1U Sliding Patch Panel	Supply & Install	No	5	
5	Fibre patch connectors, LC, ST	Supply & Install	No	20	
6	Fibre splicing incl fibre preparation, Enclosures etc	Supply & Install	No	20	
7	Standalone Media Converter (Fibre-UTP)	Supply & Install	No	4	
8	Core Switch -Multilayer (L2, L3, L4) - Managed - 24 x 10G SFP+; 4 x 10GbE; GigE port aggregation, IEEE 802.1q; VLANs - Port-based; Voice VLAN; Spanning Tree Protocols: 802.1d/w/s (RSTP, MSTP and Rapid PVST+); DHCP & DHCP Relay; Layer 3 Routing; IGMP v1/v2/v3; Protocol Independent Multicast (PIM); SNMP v1/v2/v3; Syslog; SMTP alert; ACLs; MAC filtering; DoS Control; Quality of service (QoS); IP ARP / RARP; Super-netting (CIDR), Port security; SSL/HTTP; SSH/Secure Shell ; RADIUS/ TACACS+ Client; IPv4 & IPv6; PoE - IEEE 802.3af.	Supply & Install	No	1	
9	Server Access Switch. Layer 2, Managed, GigE - 48 x 10/100/1000 + 4 x 10 Gigabit SFP+; Spanning Tree Protocols: 802.1d/w/s (RSTP, MSTP and Rapid PVST+); IGMP Snooping: v1/v2/v3 ; PIM; VLANs: 4K IEEE 802.11Q VLANs: Port-based; Port Security; SSL/HTTP; SSH/Secure Shell ; RADIUS/ TACACS+ Client; - rack-mountable, PoE - IEEE 802.3af.	Supply & Install	No	1	
10	Field Access Switch. Layer 2, Managed, GigE - 48 x 10/100/1000 + 2 x 10 Gigabit SFP+, Spanning Tree Protocols: 802.1d/w/s (RSTP, MSTP & Rapid PVST+); IGMP Snooping: v1/v2/v3; PIM; VLANs - Port-based; Port Security; SSL/HTTP; SSH/Secure Shell ; RADIUS/ TACACS+ Client; - rack-mountable, PoE - IEEE 802.3af	Supply & Install	No	6	
11	Outdoor 9U fixed swing out cabinet, floor mount, lockable, incl cooling fans, rack shelves, rack rails. Rack must also come with a 230V, 16A, 3pin round (X 10 socket) outlets adapter, suitable for mounting on the 19" rack	Supply & Install	No	2	
12	43U 19inch cabinet, integrated rack, incl cooling fans, rack shelves, rack rails. Rack must also come with a 230V, 16A, 3pin round (X 10 socket) outlets adapter, white in colour, suitable for mounting on the 19" rack	Supply & Install	No	1	
13	9U fixed swing out cabinet, wall mount, lockable, incl cooling fans, rack shelves, rack rails. Rack must also come with a 230V, 16A, 3pin round (X 10 socket) outlets adapter, suitable for mounting on the 19" rack	Supply & Install	No	4	
14	1.5kVA inline, rack mount, UPS system with 30 minutes autonomy:	Supply & Install	No	6	
1.15	3kVA 3phase UPS system with 30 minutes autonomy:	Supply & Install	No	1	

	Total Carried Forward					
	Total Brought Forward					
	Civil Works					
	Prices to include excavation, refilling, levelling, compacting and reparation of all surfaces to the original finish					
15	110mm kableflex Sleeve	Supply & Install	m	1000		
16	50mm kableflex sleeve	Supply & Install	m	200		
15	Excavating in Earth	Supply & Install	m3	480		
	Manholes					
17	600mm (l) x 600mm (w) x 800mm (depth)	Supply & Install	No.	20		
18	800mm (l) x 800mm (w) x 800mm (depth)	Supply & Install	No.	2		
	Testing and Commissioning					
19	Testing, Commissioning of Installation and supply of testing results	Supply & Install	No	1		
20	Manuals, Documentation, AS Builts	Supply & Install	No	3		
	Total Carried To Summary (Excluding VAT)					

BILL NO 10 DATA NETWORK: WIRELESS AND WIRED

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
NOTE:	The complete installation must comply to electrical installation specifications. Therefore Tenders are advised to study the specifications and drawings before pricing the Bill.					
1	Installation of wired data points, wireless access points as specified and as indicated on drawings. Wired data and wireless data must not be configured in the same VLAN. Separate Vlans to be configured					
2	CAT6a UTP Cable (Colour: Grey)	Supply & Install	m	5000		
3	CAT 6a UTP Fly Leads, 2m (Grey) . Includes 10 spare	Supply & Install	No	20		
4	Wired data points (incl wifi points) on power skirting or wall mounted as specified and as indicated on drawings. (Inclusive of boxes, RJ45 faceplates & Cat 6 termination)	Supply & Install	No	80		
5	Indoor Wireless Access Point Device. Features: 802.11ac MU-MIMO technology, 802.11i, WPA2, WPA, 802.1X , AES, PoE	Supply & Install	No	45		
6	Wireless LAN Controller with 50 AP License. Wireless intrusion prevention system (IPS) capabilities, RF management, QoS, and Layer 3 fast secure roaming. 2 x 10 GigE support, PoE	Supply & Install	No	1		
7	Authentication Server, hardware, operational software & server licence	Supply & Install	No	1		
	Testing and Commissioning					
8	Testing and Commissioning of Installation	Supply & Install	No	1		
9	Manuals, Documentation, AS Builts	Supply & Install	No	3		
	Total Carried To Summary (Excluding VAT)					

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ELECTRONIC INSTALLATION BILL OF QUANTITIES

BILL NO 11 IP TELEPHONE SYSTEM

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
NOTE:	The complete installation must comply to electrical installation specifications. Therefore Tenders are advised to study the specifications and drawings before pricing the Bill.				
	Installation of an Open Source VoIP Server System, with built in, non-proprietary codec which provides good sound quality and low bandwidth usage. The IP-PBX must have a Gateway Feature to support Telkom lines. The Telephones are to be configured in their own voice VLAN				
1	Modular Voice over IP Gateway - VoIP phone adapter. Authentication Method - RADIUS, TACACS+ , GiE, DHCP, DNS, HSRP, CLI, HTTP, SNMP 3, TFTP, Telnet. Voip Protocols - H.323 v4, MGCP, RTP, SCCP, SIP, SRTP. Voice Codecs - G.711, G.729a, T.38. IP Telephony features - automatic fax/modem detection and pass-through, call hold, call transfer, call waiting, caller ID. Rack Mount, 1U. The system must be able to support at least 4 Telkom lines, IP Trunk Ports and up to 100 extensions.	Supply & Install	No	1	
2	CAT6a UTP Cable ((Colour: Green)	Supply & Install	m	600	
3	SIP Compatible VoIP Telephone handsets.	Supply & Install	No	10	
4	Telephone Console	Supply & Install	No	1	
5	Telephone Management System	Supply & Install	No	1	
6	Main Telephone DB	Supply & Install	No	1	
7	Outdoor Telephone Supporting Structure	Supply & Install	No	1	
8	Line Lightning Arresters and Earthing	Supply & Install	No	4	
9	Telephone data points on power skirting or wall mounted as specified and as indicated on drawings.(Inclusive of boxes, RJ45 faceplates, Cat 6 cable termination)	Supply & Install	No	10	
	Testing and Commissioning				
10	Testing and Commissioning of Installation	Supply & Install	No	1	
11	Manuals, Documentation, AS Builts	Supply & Install	No	3	
12	Training of Personnel	Supply & Install	No	2	
	Total Carried To Summary (Excluding VAT)				

BILL NO 12 DSTV INFRASTRUCTURE

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
NOTE:	The complete installation must comply to electrical installation specifications. Therefore Tenders are advised to study the specifications and drawings before pricing the Bill.				
1	Supply and installation of DSTV infrastructure, including, antenna, switch and indoor outlet for decoder connection. Provide rate per unit (The rate has to include: areal cable, antenna, switch and all necessary accessories)	Supply & Install	No	3	
2	Supply and installation of DSTV PVR decoder	Supply & Install	No	3	
	Total Carried To Summary (Excluding VAT)				

NYLSVLEI NATURE RESERVE CONFERENCE CENTRE AND HOTELS -PACKAGE A

ELECTRONIC INSTALLATION BILL OF QUANTITIES

BILL NO 13 OVERHEAD PROJECTORS INSTALLATIONS

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
NOTE:	The complete installation must comply to electrical installation specifications. Therefore Tenders are advised to study the specifications and drawings before pricing the Bill.					
	Installation of overhead projector points					
1	Full HD, 1080p, business Projector	Supply & Install	No	5		
2	Projector mounting base & all mounting accesories.	Supply & Install	No	5		
3	Lockable galvanized box. To house the Active Extender kits & RJ45 point. 300 x 200 x 100mm. Supply complete with lock / keys	Supply & Install	No	5		
4	Wired data points as specified and as indicated on drawings. (Inclusive of boxes, RJ45 faceplates & Cat 6e termination)	Supply & Install	No	5		
5	Active Extender Kit. HDMI Display Port to HDMI over CAT 6e	Supply & Install	No	5		
6	Active Extender Kit. VGA Display Port to VGA over CAT 6e	Supply & Install	No	5		
7	CAT 6e Cable	Supply & Install	m	100		
8	2m cable -. Full HD 1080p HDMI cable	Supply & Install	No	5		
9	2m cable - VGA Cable	Supply & Install	No	5		
10	2m cable - USB A Male to RJ45 serial Data Cable	Supply & install	No	5		
11	25mm galvanized conduiting and accessories	Supply & Install	m	100		
12	3 way video- audio splitter Box	Supply & Install	No.	5		
13	Projector screens GRANDVIEW 120" 16:10 Ratio CNV series motorised white screen with IR control & 12V trigger, 4,22,2 x 2,638mm	Supply & Install	No.	2		
14	Projector screens GRANDVIEW 196" 16:9 Ratio CNV series motorised white screen with IR control & 12V trigger, 2660 x 1490mm	Supply & Install	No.	3		
15	Testing and Commissioning of Installation	Supply & Install	No	1		
16	Manuals and Documentation	Supply & Install	No	1		
17	Training of Personnel	Supply & Install	No	1		
	Total Carried To Summary (Excluding VAT)					

ELECTRICAL INSTALLATION BILL OF QUANTITIES

SUMMARY PAGE

BILL NO	DESCRIPTION	TOTAL
1	BULK SUPPLY & RETICULATION	
2	CONFERENCE CENTRE : ELECTRICAL INSTALLATION	
3	HOTEL 1 : ELECTRICAL INSTALLATION	
4	HOTEL 2 : ELECTRICAL INSTALLATION	
5	EARTHING AND LIGHTNING PROTECTION	
6	AREA AND SECURITY LIGHTING	
7	PHOTOVOLTAIC INSTALLATION (PV AND ENERGY STORAGE)	
8	ICT & ELECTRONIC INSTALLATION CONDUITS	
9	10G FIBRE OPTIC BACKBONE NETWORK	
10	DATA NETWORK: WIRELESS AND WIRED	
11	IP TELEPHONE SYSTEM	
12	DSTV INFRASTRUCTURE	
13	OVERHEAD PROJECTORS INSTALLATIONS	
	SUB-TOTAL	
	VAT (15%)	
	TOTAL	