



public works
& infrastructure

Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF PUBLIC WORKS AND INFRASTRUCTURE
DURBAN REGIONAL OFFICE

REFERENCE NUMBER – DBN24/03/02

BOOK 2

VOLUME 2 OF 5 BILL OF QUANTITIES PART C

SERVICE DESCRIPTION: JUSTICE: BERGVILLE MAGISTRATE COURT: REPAIRS AND RENOVATIONS INCLUDING UPGRADE AND INSTALLATION OF BOREHOLE

SUBMITTED BY:

Company Name :

CSD / CIDB registration number:/.....

Physical Address:	_____	Postal Address:	_____
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Contact No.	_____	Email	_____
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CLOSING DATE: 18 APRIL 2024

TENDER BOX LOCATION: PHYSICAL ADDRESS: National Department of Public Works, 157 Monty Naicker, Durban, 4001
TENDER BOX NUMBER: DBN24/03/02

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SECTION 5:

EPWP-NYS AND CPG

Item No		Quantity	Rate	Amount
	<u>SECTION NO 4</u>			
	<u>BILL NUMBER 1</u>			
	<u>EMPLOYMENT AND TRAINING OF LABOUR ON EPWP-NYS INFRASTRUCTURE PROJECTS</u>			
	<u>PREAMBLES</u>			
	Tenders are advised to study Additional Specification SL: Employment and Training of Labour on the Expanded Public Works Programme (EPWP) Infrastructure Projects: National Youth Service, as bound elsewhere in the Bills of Quantities, and then price this Bill accordingly			
	<u>TRAINING OF YOUTH WORKERS</u>			
	Target : 30 Youth Workers			
	<u>Life Skills development and Technical training:</u>			
1	Life skills development training for youth workers for an average of 5 days per youth worker (ref. SL 11.01.01)	Item		120 000,00
2	Technical skills training for youth workers for an average of 45 days per youth worker (ref. SL 11.01.02)	Item		780 000,00
	NOTE: The above item is only applicable if DoL does not fund the Technical Training PRIOR to site handover.			
3	Add profit on above if required	Item		
4	Allow for attendance on the above, if any	Item		
5	Penalty due to not meeting the target as in SL 11.01.02 (R 2'000.00 per Youth Worker)			
	<u>Travelling and Accommodation during off-site Training</u>			
	<u>Life skills training for 5 days each (ref. SL 11.02.01)</u>			
6	Travelling (based on R120 per day return trip/facilitator)	Item		600,00
	Carried to Collection			
	Section No. 4		R	
	Bill No. 1			
	Employment and Training of Labour			
	RUBIQUANT			
	QUANTITY SURVEYORS			

**BERGVILLE MAGISTRATE OFFICE
REPAIR AND RENOVATIONS**

7	Accommodation (based on 5 nights per week and R700 per night/facilitator) <u>Technical training for 45 days (ref. SL 11.02.02)</u>	Item	3 500.00
8	Travelling (based on R120 per day return trip/facilitator)	Item	5 400.00
9	Accommodation (based on 5 nights per week and R700 per night/facilitator x 1/39 nights) <u>Test for Medical fitness</u>	Item	31 500.00
10	Provision of General Medical Practitioner or Clinic to examine EPWP youth workers on medical fitness before and after appointment (including Covid-19 PPE).	Item	48 000.00
11	Add profit and attendance on above if required <u>Employment of youth workers including on-and-off site training</u>	Item	
12	Employment of youth workers (off - site training 90 worker days)	Item	221 760.00
13	Employment of youth workers (On - site training 270 worker days) <u>NOTE:</u> The unit of measurement shall be the number of youth workers at the Ministerial Determination labour rates multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of youth workers and for complying with the conditions of contract. The cost for the training shall be excluded from this item. This item is based on max. of 9 months appointment for youth workers	Item	665 280.00
14	Add profit on above if required	Item	
15	Allow for attendance on the above, if any <u>Provision of EPWP PPE branded overalls and T-shirts/golf shirts to youth workers</u>	Item	
16	Supply 2x EPWP/NYS branded overalls, 1 x EPWP/NYS branded hard hat, 1 x pair safety boots and 2 x EPWP/NYS branded t-shirts to youth workers (ref. SL11.05.01) SABS Approved	Item	48 000.00
	Carried to Collection		
	Section No. 4 Bill No. 1 Employment and Training of Labour RUBIQUANT QUANTITY SURVEYORS		
		R	

17	Add profit on above if required		Item	
18	Allow for attendance on the above, if any		Item	
	<u>Provision of Small Tools for youth workers</u>			
19	Supply of small tools to youth workers. Specification to be supplied by the EPWP-NYS Service Provider for the respective trades. These tools will become the property of the youth workers after the completion of the programme (Ref SL 11.06.01)		Item	54 000.00
20	Add profit on above if required		Item	
21	Allow for attendance on the above, if any		Item	
	<u>Provision of Catering for exit workshop</u>			
22	Sourcing of catering company for provision of meals during NYS EXIT Workshop and arrangement of hiring venue for the workshop.		Item	7 000.00
	<u>Appointment of Youth team Leader</u>			
23	Appointment of youth team leader for the duration of the contract (ref:SL 11.07.01)		Item	70 000.00
	<u>Liaison with Service provider</u>			
24	Liaison with service provider (ref SL 10.08)	Hrs	200	
	Monthly reporting and administration of the EPWP system including submission of EPWP Reporting System (ERS) beneficiary registration tool to the principal agent on a monthly cycle to reflect employment on a government construction site. Records will include			
	<u>CLO Allowance</u>			
25	Provide a budgetary allowance of One Million Rand (R 1'000'000.00) for CLO complete		Item	1 000 000.00
	Carried to Collection			
	Section No. 4			
	Bill No. 1			
	Employment and Training of Labour			
	RUBIQUANT			
	QUANTITY SURVEYORS			

Section No. 4			
Bill No. 1			
Employment and Training of Labour			
<u>COLLECTION</u>			
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Section No. 4			-----
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Item No		Quantity	Rate	Amount
	<u>SECTION NO 4</u>			
	<u>BILL NUMBER 2</u>			
	<u>COMMUNITY PARTICIPATION GOAL</u>			
	<u>PREAMBLES</u>			
	Note to tenderers: As CPGs may not provide any bidder a competitive advantage. Provisional amounts and fixed percentages for profit and attendance have been provided. Only the provisional amount will be adjusted once the awarded tender amount and/or the beneficiaries have been appointed, and the final values have been ascertained.			
	<u>MINIMUM PERCENTAGE COMPULSORY SUB-CONTRACTING</u>			
1	Provision is made for 30% subcontracting to SMMEs in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.1. The percentage is the contractors allowance for the P&G's for the 30% sub-contractors (SMME's).The PQS is to define the actual P&G items applicable to the SMME's e.g. scaffolding , PPE etc.	Item		752 860.86
2	Add profit on above if required	Item		
3	Allow for attendance on the above, if any	Item		
	<u>MINIMUM TARGETED LOCAL BUILDING MATERIAL MANUFACTURERS</u>			
4	Provision is made for the Minimum Targeted Local Building Material Manufacturers CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.2. Allowance for monitoring and monthly reporting on material purchased from Local Building Material Manufacturers by main contractor and subcontractors based on determination by PQS taking into account specific project variables	Item		83 651.21
5	Add profit on above if required	Item		
	Carried to Collection		R	
	Section No. 4 Bill No. 2 Contract Participation Goal RUBIQUANT QUANTITY SURVEYORS			

6	Allow for attendance on the above, if any	Item	
	<u>MINIMUM TARGETED LOCAL BUILDING MATERIAL SUPPLIERS</u>		
7	Provision is made for the Minimum Targeted Local Building Material Suppliers CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.3. Allowance for monitoring and monthly reporting on material purchased from Local Building Material Suppliers by main contractor and subcontractors based on determination by PQS taking into account specific project variables	Item	83 651.21
8	Add profit on above if required	Item	
9	Allow for attendance on the above, if any	Item	
	<u>MINIMUM TARGETED LOCAL LABOUR SKILLS DEVELOPMENT</u>		
10	Provision is made for the Minimum Targeted Local Labour Skills Development CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.4. This allowance is for the cost for a suitably qualified and experienced training service provider appointed by the main contractor including monitoring and monthly reporting.	Item	167 302.41
11	Add profit on above if required	Item	
12	Allow for attendance on the above, if any	Item	
	<u>MINIMUM TARGETED ENTERPRISE DEVELOPMENT</u>		
13	A provisional amount has been allowed for in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.5. The provisional amount allowed is for the appointment of training coordinator, mentor, training service providers and training of the beneficiary enterprises including monitoring and monthly reporting.	Item	1 335 000.00
14	Add profit on above if required	Item	
15	Allow for attendance on the above, if any	Item	
	Carried to Collection		
	Section No. 4		
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	Contract Participation Goal		
	RUBIQUANT		
	QUANTITY SURVEYORS		
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<u>MINIMUM TARGETED SKILLS DEVELOPMENT GOALS</u>			
16	A provisional amount has been allowed for the Minimum Targeted Development CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.6. <ul style="list-style-type: none"> • stipends payable to the beneficiaries • appointment of training coordinator • appointment of mentor (where applicable) • appointment of training service providers • other additional costs as per table 3 of the Standard • monitoring and monthly reporting 	Item	167 302.41
17	Add profit on above if required	Item	
18	Allow for attendance on the above, if any	Item	
<u>LABOUR INTENSIVE PARTICIPATION GOAL</u>			
19	Labour Intensive Participation Goal - Allowance for monthly reporting of labour intensive works by main contractor based on determination by PQS taking into account specific project variables. Allowance for monitoring and monthly reporting on Works executed by means of Labour Intensive methods by main contractor and subcontractors based on determination by PQS taking into account specific project variables	Item	180 000.00
20	Allowance for profit all inclusive of associated costs to the contractor for implementation.	Item	
Carried to Collection			
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Section No. 4

Bill No. 2

Contract Participation Goal

COLLECTION

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Section No. 4

Bill No. 2

Contract Participation Goal

RUBIQUANT

QUANTITY SURVEYORS

Bill No	<u>SECTION SUMMARY - EPWP-NYS & Contract participation Goal</u>	Page No	Amount
1	Employment and Training of Labour	180	
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FINAL SUMMARY

Section No	<u>FINAL SUMMARY</u>	Page No	Amount
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2	Repairs & Renovations	148	
3	External Works (Provisional)	176	
4	EPWP-NYS & Contract participation Goal	185	
	<u>SUBTOTAL</u>		R
	Part B : Electrical Installation	Item	
	Part C : Mechanical Installation	Item	
	<u>SUBTOTAL</u>		R
	ADD:		
	VALUE ADDED TAX		R
	TOTAL		R
	RUBIQUANT QUANTITY SURVEYORS		

PART B:

ELECTRICAL INSTALLATION

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 1: PRELIMINARY AND GENERAL**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
1.	PRELIMINARY AND GENERAL Amount allowed for all expenses, regarding the following					
1.1	PROJECT RELATED COST Net price for the fulfillment of the Tender Requirements, Conditions of Contract regarding all Insurance cost and indemnification, etc	Sum	1			
1.1.2	Determining and locating of existing services	Sum	1			
1.1.3	Allowance to work in close proximity to existing services eg main gas pipes, water lines and electric cables.	Sum	1			
1.1.4	Notice board	Sum	1			
1.1.5	Submit samples of all equipment for approval	Sum	1			
1.1.6	As built drawings & manuals.	Sum	1			
1.1.7	Cleaning of the site, removal of all refuse, rubble, rock etc prior to handing over	Sum	1			
2.	TIME RELATED COST					
2.1	Performance Bonds	Sum	1			
2.2	Machinery-hire purchase cost, transport cost to and from site, depreciation	Sum	1			
2.3	Material-store cost and special delivery cost	Sum	1			
2.4	Subcontractors cost.	Sum	1			
2.5	Complying with Occupational Health and Safety Act, 85, 1993 (OHS&A).					
2.6.1	Appointment of Safety Officer	Sum	1			
2.6.2	Adherence to Construction Regulations of the OHS&A	Sum	1			
2.6.3	Compile a Health and Safety Plan (H & S Plan)	Sum	1			
2.6.4	Compile a Risk Assessment for activities (RA)	Sum	1			
2.6.5	Periodically reviewing of H & S Plan and RA	Sum	1			

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 1: PRELIMINARY AND GENERAL**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
2.6.6	Submit proof of calibration of equipment eg. Crimper, HV test apparatus etc	Sum	1			
2.6.7	Submit proof of Workmans Compensator	Sum	1			
2.6.8	Comply with Environmental Management Program EMI	Sum	1			
3	BULK CONNECTION COST Supply upgrade from Eskom					
3.1	Upgrade of the supply from Eskom from a 25kVA to 100kVA connector	Sum	1			
TOTAL CARRIED FORWARD TO SUMMARY OF BILL OF QUANTITIES						

BERGVILLE JUSTICE DEPARTMENT
 BILL OF QUANTITIES
 LIST 2: LV NETWORK

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
1.	LV CABLES Supply, delivery, installation and commissioning of the following LV cable with Cu conductor as specified in Clause 18 of Document 12.					
1.1	95 mm ² , 4 core PVC cable	m	110			
1.2	25 mm ² , 4 core PVC cable	m	70			
1.3	16 mm ² , 4 core PVC cable	m	330			
1.4	10 mm ² , 4 core PVC cable	m	150			
1.5	6 mm ² , 4 core PVC cable	m	102			
1.6	70 mm ² BCEW	m	110			
1.7	16 mm ² BCEW	m	70			
1.8	10 mm ² BCEW	m	330			
1.9	6 mm ² BCEW	m	150			
1.10	4 mm ² BCEW	m	102			
2.	LV CABLE ENDS Supply, delivery, making off and commissioning of LV cable ends. Measured per set					
2.1	95 mm ² , 4 core PVC cable	No	4			
2.2	25 mm ² , 4 core PVC cable	No	2			
2.3	16 mm ² , 4 core PVC cable	No	12			
2.4	10 mm ² , 4 core PVC cable	No	4			
2.5	6 mm ² , 4 core PVC cable	No	8			
2.6	70 mm ² BCEW	No	4			
2.7	16 mm ² BCEW	No	2			
2.8	10 mm ² BCEW	No	12			

BERGVILLE JUSTICE DEPARTMENT
 BILL OF QUANTITIES
 LIST 2: LV NETWORK

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
2.9	6 mm ² BCEW	No	4			
2.10	4 mm ² BCEW	No	8			
3.	LV CABLE JOINTS Supply, delivery, making off and commissioning of LV cable joints as specified in Clause 11 of Document 12					
3.1	95 mm ² , 4 core PVC cable	No	1			
3.2	25 mm ² , 4 core PVC cable	No	1			
3.3	16 mm ² , 4 core PVC cable	No	1			
3.4	10 mm ² , 4 core PVC cable	No	1			
3.5	6 mm ² , 4 core PVC cable	No	1			
3.6	4 mm ² , 4 core PVC cable	No	1			
3.7	95 mm ² BCEW	No	1			
3.8	25 mm ² BCEW	No	1			
3.9	16 mm ² BCEW	No	1			
3.10	10 mm ² BCEW	No	1			
3.11	6 mm ² BCEW	No	1			
3.12	4 mm ² BCEW	No	1			
4	DANGER TAPE Supply and installation of danger tape to a depth of 300 mm	m	200			
5	SLEEVES Supply and install 110 mm dia PVC sleeves as per drawings and as entry to distribution boards	m	350			
5.1						
5.2	Supply and install 110 mm diameter slow bend as entry to distribution boards	No	6			

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 2: LV NETWORK**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
6	GENERATOR Supply, install and commission 100K V.A, three phase, diesel generator in a sound damping box/ silent canopy/structure Complete with an automatic changeover switch (ATS), maintenance free batteries and trickle charge Generator to have integrated fuel tank, lockable doors, automatic and manual start options	No	1			
7	MANHOLES Supply and installation of 600 x 600 x 600 mm manhole with checker cover plates and appropriate handles					
7.1	Electrical service including 600 x 600mm heavy duty cast iron lid	No	2			
8	COMMISSIONING Commission of LV Network and issuing of a Certificate of Compliance according to SANS 10142-1:2011	Sum	1			
TOTAL CARRIED FORWARD TO SUMMARY OF BILL OF QUANTITIES						

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 3: AREA LIGHTING**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
1.	LV CABLES					
	Supply, delivery, installation and commissioning of the following LV cable with Cu conductor as specified.					
1.1	10 mm ² , 4 core PVC cable	m	270			
2.	LV CABLE ENDS					
	Supply, delivery, making off and commissioning of LV cable ends as specified					
2.1	10 mm ² , 4 core PVC cable	No	72			
3.	LV CABLE JOINTS					
	Supply, delivery, making off and commissioning of LV cable joints as specified					
3.1	10 mm ² , 4 core PVC cable	No	1			
4	DANGER TAPE					
	Supply and installation of danger tape to a depth of 300 mm	m	210			
5	SLEEVES					
5.1	Supply and install 110 mm dia PVC sleeves at all road crossings	m	100			
5.2	Cut surface with angle grinder, backfill with soilcrete and repair surface with tarmacadam/cement according to clients specifications	m	0			
5.3	Remove paving, backfill with soilcrete and reinstate paving according to the clients specification	m	0			
5.4	Supply and install 110 mm diameter slow bend as entry to distribution boards	No	5			
6	AREA LIGHTING					
	Supply, delivery, installation and commissioning of the following area lights					
6.1	Type PT, 40W LED Pole Mount, IP66 Street Light with Die-Cast Housing 4000 Lumen, with SABS/SANS mark of compliance, installed on a 3.6m fibreglass pole complying to SANS 1749, Mounting Height 3m above Natural Ground Level	No	43			
7	COMMISSIONING					
	Commission of LV Network and issuing of a Certificate of Compliance according to SANS 10142-1:2017	Sum	1			
TOTAL CARRIED FORWARD TO SUMMARY OF BILL OF QUANTITIES						

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 4: DISTRIBUTION BOARDS**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
1.	ELECTRICAL DISTRIBUTION BOARDS Supply, installation and commissioning of complete distribution board with architrave and equipment in the positions as indicated on the drawings, including the connection of all conduiting and termination of all wiring to necessary equipment. Drawings of distribution boards to be submitted for approval.					
1.1	DB-MAIN (IP65, Outdoor, Floor standing)	No	1			
1.2	DB-A (flush mounted)	No	1			
1.3	DB-B (flush mounted)	No	1			
1.4	DB-C (flush mounted)	No	1			
1.5	DB-D (flush mounted)	No	1			
1.6	DB-E (flush mounted)	No	1			
1.7	DB-G (flush mounted)	No	1			
1.8	DB-U1 (flush mounted)	No	1			
1.9	DB-U2 (flush mounted)	No	1			
2.	ELECTRICAL DISTRIBUTION BOARDS Supply and install warnings, notices and labelling in accordance with SANS 10142-1	No	9			
3.	FACTORY ACCEPTANCE TESTS (FAT) Provision for three (3) Engineers, three (3) Employer Representatives and one (1) Contractor Representative to witness FAT at manufacturer as specified					
3.1	All DB's as specified in Item 1.	Sum	1			
4.	ELECTRONIC DISTRIBUTION BOARDS Supply, installation and commissioning of complete distribution board with architrave and equipment in the positions as indicated on the drawings, including the connection of all conduiting and termination of all wiring to necessary equipment. Drawings of distribution boards to be submitted for approval					
4.1	DB (600 x 600 Flush Mounted with door).	No	3			
5.	ELECTRONIC DISTRIBUTION BOARDS Supply and install warnings, notices and labelling as specified	No	3			

BERGVILLE JUSTICE DEPARTMENT
 BILL OF QUANTITIES
 LIST 4: DISTRIBUTION BOARDS

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
6.	FACTORY ACCEPTANCE TESTS (FAT) Provision for three (3) Engineers, three (3) Employer Representatives and one (1) Contractor Representative to witness FAT at manufacturer as specified					
6.1	All DB's as specified in Item 4.1	Sum	1			
TOTAL CARRIED FORWARD TO SUMMARY OF BILL OF QUANTITIES						

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 5: ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
1.	CONDUITING AND TRUNKING The supply and installation of conduiting for lighting and power circuits, including ends, joints, ferrules, locknut cutting, threading reaming, bending and setting, where required					
1.1	20 mm dia PVC (installed in ceiling)	m	375			
1.3	20 mm dia PVC (chased in wall).	m	300			
2.	POWER SKIRTING AND ACCESSORIES The supply, delivery, installation and connecting of 3 channel / compartment steel power skirting complete with all accessories to Cabstrut P803 type as specified in Clause 21.7 of Document 12.					
2.1	3 Compartment steel power skirting complete with covers	m	130			
2.2	3 Compartment steel end cap.	No	40			
2.3	3 Compartment steel flat elbow.	No	20			
2.4	3 Compartment steel flat tee.	No	0			
2.5	3 Compartment steel internal elbow.	No	18			
2.6	3 Compartment steel external elbow.	No	4			
2.7	3 Compartment steel standard tee.	No	0			
4.	CABLE TRAY AND ACCESSORIES The supply, delivery, installation and connecting of cable trays complete with all accessories for suspension from concrete slabs, against walls, against roof trusses where required and supported as per manufacturers specifications including cable clamps					
4.1	Medium duty cable tray, welded wire mesh, 200mm x 50mm (Pitch 100 x 50mm) complete with all accessories and mounting brackets	m	80			
4.2	Medium duty cable tray, welded wire mesh, 200mm x 50mm (Pitch 100 x 50mm) horizontal bend 90°	No	12			
4.3	Medium duty cable tray, welded wire mesh, 200mm x 50mm (Pitch 100 x 50mm) internal elbow	No	2			
4.4	Medium duty cable tray, welded wire mesh, 200mm x 50mm (Pitch 100 x 50mm) external elbow (dropper)	No	2			
4.5	Medium duty cable tray, welded wire mesh, 200mm x 50mm (Pitch 100 x 50mm) tee.	No	6			
4.6	Medium duty cable tray, welded wire mesh, 200mm x 50mm (Pitch 100 x 50mm) 4 way crossover.	No	2			

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 5: ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
5.	UNDER SCREED FLOOR DUCT					
	Supply, installation and commissioning of the following floor duct complete with all accessories to fix it to the floor where required					
5.1	3F Floor Duct	m	5			
5.2	FD3 Pedestal including all accessories and blanking plates	No	4			
6.	DRAW BOXES					
	The supply and installation of flush mounted, multi-way draw boxes, including the termination of conduit with ferrules and locknuts to same					
6.1	60 mm dia PVC 20 mm, round, multi-way for electrical service.	No	40			
6.2	60 mm dia Steel 20 mm, round, multi-way for electrical service.	No	0			
6.6	60 mm dia PVC blank cover plate.	No	40			
6.7	60 mm dia Steel blank cover plate.	No	0			
6.8	100 x 50 blank cover plate.	No	5			
6.9	100 x 100 blank cover plate.	No	5			
6.10	200 x 200 blank cover plate.	No	0			
7.	CONDUCTORS					
	The supply, delivery, installation in conduit and connecting up to equipment of stranded copper conductors as specified.					
7.7	2.5 mm ² PVC insulated for electrical service	m	3000			
7.8	1.5 mm ² Bare or Green/Yellow for electrical service	m	3000			
7.13	4 mm ² PVC insulated for electrical service.	m	442			
7.14	2.5 mm ² Bare or Green/Yellow for electrical service	m	442			

BERGVILLE JUSTICE DEPARTMENT
 BILL OF QUANTITIES
 LIST 5: ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
8.	SWITCHES					
	Supply, delivery, installation and connecting of flush mounted switches complete with switch modules					
8.1	Yokes and white cover plates to Crabtree Classic Range (Steel) 20 A, single lever, one-way (100 x 50 mm Draw Box)	No	10			
8.2	20 A, single level, two-way (100 x 50 mm Draw Box)	No	3			
8.3	20 A, single lever, intermediate (100 x 50 mm Draw Box)	No	0			
8.4	20 A, two lever, one-way (100 x 50 mm Draw Box)	No	2			
8.5	20 A, two level, one-way (x1) & two-way (x1) (100 x 50 mm Draw Box)	No	0			
8.6	20 A, two level, two-way (x2) (100 x 50 mm Draw Box)	No	2			
9.	ISOLATORS					
	Supply, delivery, installation and connecting of isolator complete with isolator modules, yokes and satin white cover plates to Crabtree Classic Range (Steel)					
9.1	30 A, double pole flush mounted	No	2			
9.2	30 A, double pole surface mounted including surface mounted box	No	0			
9.3	30 A, double pole surface mounted including surface mounted box (IP65)	No	21			
9.4	60 A, triple pole surface mounted including surface mounted box (IP65)	No	0			
9.5	200 A, triple pole surface mounted including surface mounted box	No	0			
10.	SOCKET OUTLETS					
	The supply, delivery, installation and connecting of socket outlets complete with white cover plate to Crabtree Classic Range (Steel)					
10.1	1 x 16A 3 pin flush mounted switched socket outlet (100 x 100)	No	0			
10.2	1 x 16A 3 pin & 1 x Euro Socket flush mounted switched socket outlet (100 x 100)	No	4			
10.3	2 x 16A 3 pin flush mounted switched socket outlet (100 x 100)	No	8			
10.4	1 x 16A 3 pin flush mounted dedicated switched socket outlet (Red - 100 x 100)	No	0			
10.5	1 x 5A 3 pin 60mm round with cover plate	No				

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 5: ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
10.6	1 x 16A 3 pin & 1 x Euro Socket switched socket outlet (Power Skirting)	No	38			
10.7	1 x 16A 3 pin & 1 x Euro Socket dedicated switched socket outlet (Power Skirting)	No	26			
10.8	1 x 16A 3 pin & 1 x Euro Socket dedicated switched socket outlet (Red - in Power Skirting)	No	37			
12.	OCCUPANCY CEILING SENSORS The supply, delivery, installation and connecting of ceiling mounted sensors complete with all the fitting to Clipsal 752 Series range Dual technology Ultrasonic and passive infrared ceiling sensor with intelldar	No	47			
13.	PHOTO CELL Supply, delivery, installation and connecting of 16A Photo cell mounted in well glas	No	7			
14.	PROVISIONAL COST AMOUNTS Provisional cost amount allowed for Lightning design and installation by specialist:	PC	1			
15.	GENERAL Supply, installation and commissioning of the following ancillary equipment	Sum	1			
15.1	Bonding of electrical system	Sum	1			
15.2	Supply and install trafficite labels on all light switches, plugs etc with approved letterin	Sum	1			
15.3	Testing which includes insulation resistance, earth continuity test, balancing of the load of the electric installation, etc in accordance with SANS 10142	Sum	1			
15.4	Stainless steel Hand dryers	No	5			
15.5	Supply and installation of a readily accessible earthing terminal for electronic service	No	2			
TOTAL CARRIED FORWARD TO SUMMARY OF BILL OF QUANTITIES						

BERGVILLE JUSTICE DEPARTMENT
 BILL OF QUANTITIES
 LIST 6: LUMINAIRES

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
1.	LUMINAIRES Supplying, installation and commissioning of the following luminaires complete with lam					
1.1	TYPE A: 16W LED SURFACE MOUNT, IP54 ROUND BULKHEAD WITH BLACK DIE-CAST BASE AND HIGH IMPACT ACRYLIC DIFFUSER WITH TAMPER PROOF TORX SCREWS WIRE ECG COMPLETE WITH 3 PIN STUCCHI CONNECTOR AND 4m, 3 CORE CABTYRE 1400 Lumen	No	41			
1.2	TYPE B: 40W CFL SURFACE MOUNT, IP65 DECORATIVE OUTDOOR EYELID BULKHEAD WITH BLK DIE-CAST BASE AND HIGH IMPACT ACRYLIC DIFFUSER WITH TAMPE PROOF TORX SCREWS. WIRE ECG COMPLETE WITH 3 PIN STUCCHI CONNECTOR AND 4m, 3 CORE CABTYRE - 3500 Lumen	No	14			
1.3	VANDAL PROOF SURFACE MOUNT LUMINAIRE BATTEN TYPE, SUITABLE FOF MAXIMUM SECURITY APPLICATIONS, WITH 2 x 20W LED LAMPS, WITH CORROSIO RESISTANT HIGH PRESSURE DIE CAST ALUMINIUM BODY, ONE PIECE INJECTION MOULDED CLEAR POLYCARBONATE DIFFUSER, PROTECTION CLASS IP65, WITH SABS MARK OR SANS MARK OF COMPLIANCE - 5500 Lumen	No	18			
1.5	TYPE C: 2 X 23W LED 1500MM SURFACE MOUNTED IP65 VAPOR PROOF WITH POLY-CARBONATE UV STABILIZED BASE AND DIFFUSER WITH 305 STAINLESS STEEL CLIPS. WIRE ECG COMPLETE WITH 4M 3 CORE CABTYRE.	No	67			
1.6	TYPE C: 64W LED FLUSH MOUNT HONEYCOMB PANEL, WIRE ECG COMPLETE WITH 3 PIN STUCCHI ADAPTOR & 4M 3 CORE CABTYRE - 6000 LUMEN, DRIVER LIFETIME 30000HRS, CCT 4000K, CRI 80	No	66			
1.7	TYPE FD: 1 X 40W LED FLOODLIGHT, IP65, CCT 4000K, DIE-CAST ALUMINIUM HOUSING, 4M 3 CORE CABTYRE, 90LM/WATT, DRIVER LIFETIME 30000HRS	No	68			
2.	EMERGENCY LUMINAIRES Supplying, installation and commissioning of the following luminaires complete with lamps specified					
2.1	Type EX: Surface mount LED Exit light. Complete with NiMH battery with no memory effect suitable for operation of at least 2 hours and a lifespan of 7 years equal Cosine Developments LE Single-sided Emergency Exit Sign	No	7			
TOTAL CARRIED FORWARD TO SUMMARY OF BILL OF QUANTITIES						

BERGVILLE JUSTICE DEPARTMENT
 BILL OF QUANTITIES
 LIST 7: ELECTRONIC SERVICES

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
1.	CONDUITING AND TRUNKING The supply and installation of conduiting for lighting and power circuits, including ends, joints, ferrules, locknut cutting, threading remaining, bending and setting, where required					
1.1	25 mm dia PVC for access control/security services (installed in ceiling)	m	0		R	-
1.2	25 mm dia PVC for access control/security services (chased in wall)	m	42			
1.3	25 mm dia STEEL for fire services (installed in ceiling)	m	150			
1.4	25 mm dia STEEL for fire services (chased in wall)	m	20			
2.	WIRING DUCT The supply, delivery, installation and connecting of wiring channel complete with all accessories for suspension from concrete slabs, against walls, against roof trusses where required and supported as per manufacturers specifications					
2.1	P9810 Wiring channel with covers and all fixing accessories	m	80			
2.2	P9810 Wiring channel end cap.	No	8			
2.3	P9810 Wiring channel radiused internal elbow.	No	2			
2.4	P9810 Wiring channel radiused external elbow.	No	2			
2.5	P9810 Wiring channel radiused horizontal elbow	No	12			
2.6	P9810 Wiring channel radiused 3 way tee.	No	6			
2.7	P9810 Wiring channel radiused 4 way crossover.	No	2			
2.8	P9810 Wiring channel radiused internal elbow	No	5			
2.9	P9810 Wiring channel radiused external elbow	No	5			
2.10	P9810 Wiring channel radiused horizontal elbow	No	5			
2.11	P9810 Wiring channel radiused 3 way tee	No	4			
2.12	P9810 Wiring channel radiused 4 way crossover	No	2			

BERGVILLE JUSTICE DEPARTMENT
 BILL OF QUANTITIES
 LIST 7: ELECTRONIC SERVICES

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
3	DRAW BOXES The supply and installation of flush mounted, multi-way draw boxes, including the termination of conduit with ferrules and locknuts to same.					
4.1	60 mm dia PVC 25 mm, round, multi-way for telecom services.	No	0			
4.2	100 x 50 x 50 mm galvanised steel for telecom services	No	20			
4.3	100 x 100 x 50 mm galvanised steel for telecom services	No	0			
4.4	60 mm dia PVC 25 mm, round, multi-way for data services	No	30			
4.5	100 x 50 x 50 mm galvanised steel for data service	No	0			
4.6	100 x 100 x 50 mm galvanised steel for data service	No	0			
4.10	60 mm dia Steel 25 mm, round, multi-way for CCTV services	No	30			
4.11	100 x 50 x 50 mm galvanised steel for CCTV service	No	0			
4.12	100 x 100 x 50 mm galvanised steel for CCTV service	No	0			
4.13	60 mm dia PVC 25 mm, round, multi-way for access control/security services	No	32			
4.14	100 x 50 x 50 mm galvanised steel for access control/security service	No	16			
4.15	100 x 100 x 50 mm galvanised steel for access control/security service	No	0			
4.16	60 mm dia Steel 25 mm, round, multi-way for fire services	No	0			
4.17	100 x 50 x 50 mm galvanised steel for fire service	No	20			
4.18	100 x 100 x 50 mm galvanised steel for fire service	No	20			
4.19	200 x 200 x 50 mm galvanised steel for electronic service:	No	1			
4.20	60 mm dia blank cover plate	No	92			
4.21	100 x 50 blank cover plate	No	56			
4.22	100 x 100 blank cover plate	No	20			

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 7: ELECTRONIC SERVICES**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
4.23	200 x 200 blank cover plate	No	1			
4.24	60 mm dia steel blank cover plate	No	0			
4.25	100 x 50 blank steel cover plate	No	20			
4.26	100 x 100 blank steel cover plate	No	20			
5.	ELECTRONIC SERVICES CABLES The installation of electronic services cables.					
5.1	CAT 5 UTP unscreened solid conductor PVC cable (telecom services)	m	950			
5.2	CAT 6 UTP unscreened solid conductor PVC cable (data services)	m	1250			
5.3	AV Cable Cable (Audio/Visual services)	m	100			
5.4	Speaker cabling (Audio/Visual services)	m	100			
5.5	CAT 6 UTP unscreened solid conductor PVC cable (audio/visual services)	m	100			
5.6	Microphone Patch leads	m	60			
5.7	CAT 6 UTP Unscreened Solid Conductor PVC Cable (CCTV Services)	m	700			
5.8	3pair 0.5mm Overall Foil Screen PVC Cable (Access Control/Security)	m	490			
5.9	0.5mm Ripcord (Access Control/Security Services)	m	150			
5.10	Alarm Cable (Access Control/Security Services)	m	0			
5.11	Fire Cable (Fire Alarm Services)	m	0			
5.12	Supply and instal galvanised draw wire in conduit for all electronic service	m	212			
6.	SOCKET OUTLETS The supply, delivery, installation and connecting of outlets complete with satin chrome cover plate to Crabtree Diamond Range (Steel).					
6.1	Telephone outlet point with cover (Power Skirting)	No	35			

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 7: ELECTRONIC SERVICES**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
6.2	Data outlet port with cover (Power Skirting)	No	35			
7.	ANCILLARY EQUIPMENT					
7.1	42U Server rack - floor standing with perforated front and back door, 6 fans and 2 x vertical cable managers, 600mm x 1000mm deep.	No	1			
7.2	48-Port Gigabit Network Switch - Rack mountable, including power supply	No	2			
7.3	Rack Mount Server - Dual processor support, 2 x 8 Core, 3GHz CPUs included, 32GB DRAM DDR4 memory, RAID storage controller configured for RAID 5 with 100TB of storage.	No	1			
7.1	Enclosure for Access Control	No	2			
7.2	Access Control Controller	No	2			
7.2	Power Supply (Access Control/Security)	No	2			
7.3	Card Reader (Access Control/Security)	No	30			
7.3	Keypad (Access Control/Security)	No	30			
7.4	64 Channel NVR mounted in server rack, at least 40TB internal storage. Supports PoE	No	1			
7.5	22" 1920 x 1080p monitor for CCTV and Access Control monitoring	No	3			
7.6	CCTV Camera - Bullet type, rated for outdoor use (IP 65), PoE, 6mm Lens - 50° field of view.	No	15			
7.7	CCTV Camera - Bullet type, rated for outdoor use (IP 65), PoE, 4mm Lens - 90° field of view.	No	17			
7.8	CCTV Camera, Turret Mounted, Distinct Lens & Illuminator, PoE, 2.8mm Lens - 103° field of view	No	32			
7.9	Alarm back panel (Access Control/Security)	No	1			
7.10	Column mounted speakers	No	8			
7.11	X-Ray Baggage Scanner, Tunnel Dimensions of 615mm (W) x 410mm (H). Maximum load of 160kg even distributed on conveyor. Generator voltage of 140kV, display resolution of at least 1280 x 1024, sound level < 70dBA. To be 98/37/EWG & 89/36/EWG Compliant. To include basic operator training for 3 x persons	No	1			

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
LIST 8: PV SYSTEM**

Item	Description	Unit	Qty	Unit Price		Total
				Unit Labour Rate	Unit Material Rate	
1.	SOLAR SYSTEM					
	Supply, delivery, installation and commissioning of the following Solar Panels with angle supports for					
1.1	Supply, delivery, installation and commissioning of 400W Solar Panel, ± 2m x 1m, efficiency of a least 17% with angle supports for correct mounting angle	No	40			
1.2	Hybrid PV Grid-Tie Inverter 20KW, 3 Phase, Dual MPP trackers, Maximum PV DC input voltage of 1000VDC. Rated output power of 20kW. Must be able to function as a back-up power system, grid-tie system with programmable supply priority. Must be able to detect and prevent power from being fed into the upstream network when operating in grid-tie mode. NRS 097-2-1 compliant and approved	No	1			
1.3	Rack-mounted Lithium-Ion Battery Pack in 20U floor standing cabinet. Cabinet to have ventilated front and rear panels. Battery BMS to be able to interface with Hybrid PV Grid-Tie inverter. Battery capacity of approximately 12kWh, 48V.	No	1			
1.4	DC Combiner box, with necessary ancillary equipment, including fuses, terminal blocks and isolator:	No	1			
1.5	XLPO 6mm ² Cu single core cable for interconnection of solar panels (Red)	m	60			
1.6	XLPO 6mm ² Cu single core cable for interconnection of solar panels (Black)	m	60			
1.7	Ancillary equipment (MC4 connectors, mounting hardware, lugs etc.	Sum	1			
TOTAL CARRIED FORWARD TO SUMMARY OF BILL OF QUANTITIES						

**BERGVILLE JUSTICE DEPARTMENT
BILL OF QUANTITIES
SUMMARY**

LIST	DESCRIPTION	AMOUNT
LIST 1:	PRELIMINARY AND GENERAL	
LIST 2:	LV NETWORK	
LIST 3:	AREA LIGHTING	
LIST 4:	DISTRIBUTION BOARDS	
LIST 5:	ELECTRICAL SERVICES	
LIST 6:	LUMINAIRES	
LIST 7:	ELECTRONIC SERVICES	
LIST 8:	PV SYSTEM	
SUBTOTAL A		
Plus: Contingency (10 %)		
SUBTOTAL B		
Plus: 15 % VAT		
TOTAL CONTRACT PRICE		

MECHANICAL INSTALLATION

PART C:

Item	Description	Unit	Qty	Rate	Total
	<p>MECHANICAL WORKS</p> <p>BILL NO. 1</p> <p>MECHANICAL</p> <p>NOTE:</p> <p>i) Quantities in this schedule are to be re-measurable on Rates are fixed in accordance with the tendered rates. (ii) This Bill of Quantities is to be read in conjunction with the specification in respect of the following listed items</p> <p>AIR CONDITIONING</p> <p>(WORK GROUP 170)</p> <p>Split Type Air Conditioning Units</p> <p>Supply and install inverter- cycle heating, complete with all necessary piping, insulation, trunking wiring, electrical work, flush mounted hard wired controls, drains, mounting brackets, rubber waffle pads, etc. necessary to leave the installation in good working order, as follows:</p>				
1	12 000 BTU Midwall Unit	No	10	-	-
2	18 000 BTU Midwall Unit	No	2	-	-
3	24 000 BTU Midwall Unit	No	1	-	-
4	18 000 BTU Four Way Cassette Unit	No	1	-	-
	Major service of existing midwall split air conditioning unit, including re-gassing, minor repairs and replacement of the infrared controller where necessary, to handover the units in fully operational condition.				
5	Exiting midwall split: 9 000 BTU to 18 000 BTU	No	10	-	-
6	Drain Piping 22mm PVC drain piping, including supports at 1m intervals and all fixings and fittings (P-traps, bends, tees, etc.);	m	50	-	-
	VENTILATION				
	Supply Fans Supply air fan, installed with electrical connections to the the electrical point provided by others. To operate with the room light switch. Maximum sound pressure in offices: NR 35 (approximately 40 dB(A) As specified. Fan requirements: 30 lit/sec @ 150 Pa, as per TD Silent TD-160/100 or other approved				
7	150 lit/sec @ 200 Pa, as per TD Silent TD-500/160 or other approved	No	3	-	-
8	240 lit/sec @ 250 Pa, as per TD Silent TD-800/200 or other approved	No	2	-	-
9		No	1	-	-
	Filter Box A filter box is to be installed in line with the ducting to accommodate removable standard 300x300mm removable filter. The filter box is to				
10		No	3	-	-

	be installed in such a way that the filter is accessible from the					
TOTAL CARRIED FORWARD TO SUMMARY					R	-
<u>VENTILATION DUCTING</u>						
(WORK GROUP 171)						
<u>Circular Sheetmetal Ducting</u>						
<u>Circular galvanised sheetmetal ducting suspended under the soffit/trusses by a band with single/double rod(s) (suited to size of ducting) above the ceiling, including all fittings, fixings, tee's, bends, reducers, joints, hangers, fixing to slab, fittings, etc.</u>						
11	100mm diameter	m	100			
12	160mm diameter	m	50			
13	200mm diameter	m	4			
14	250mm diameter	m	10			
<u>Flexible Ducting</u>						
<u>Flexible ducting, Non-allergenic spiral wound a Not exceeding 1m in length, including all fittings, fixings, etc.</u>						
15	100mm diameter flexible ducting	m	15			
16	160mm diameter flexible ducting	m	5			
17	200mm diameter flexible ducting	m	5			
<u>Disc Valves</u>						
<u>Disc Valves, galvanised steel, powder coated white, as specified:</u>						
18	100mm	No	15			
	160mm	No	5			
	200mm	No	5			
<u>Weather Louvres</u>						
<u>Natural anodised aluminium Weather Louvres, complete with sub-frames and fixed to the wall.</u>						
19	200x200mm	No	3			
20	400x400mm	No	3			
<u>Door Grilles</u>						
21	300x300mm double sided natural anodised aluminium door grille, drilled for countersunk fixing	No	8			
<u>Ceiling Fans</u>						
22	Service existing ceiling fan, including all necessary upgrades	No	9			
23	New ceiling fan with 1420mm blades and four speed controller flush mounted adjacent to room light switch.	No	9			
TOTAL CARRIED FORWARD TO SUMMARY						
<u>FIRE EQUIPMENT</u>						
(WORK GROUP 170)						
<u>New Equipment</u>						
24	New 4.5kg Dry Chemical Powder Hand Held Fire Extinguishers as per SANS 1522 and SANS 1739. Mounted on a full length hardwood backing plate. Installed as per SANS 10105.	No	8			
25	New 9kg Dry Chemical Powder Hand Held Fire Extinguishers as per	No	2			

26	SANS 1522 and SANS 1739. Mounted on a full length hardwood backing plate. Installed as per SANS 10105. Installation of new standard wall mounted Fire hose reels with Ø19mm hose, size 480 x 300mm, 30m long @ 2.0MPa, valve and union. Installed according to SANS 543, installed as per SANS 1128 and SANS 10105.				
	<u>Servicing of Existing Equipment</u>				
27	Servicing of existing portable 4,5kg DCP fire extinguishers, to SANS 10105.	No	10		
28	New full length hardwood backing plates for the existing extinguishers.	No	10		
	<u>Signage</u>				
29	200x200mm photoluminescent signage a clear perspex sheet, with anodised aluminium supports, for fire equipment and escape routes, as per SANS 1186, screwed to wall/suspended from ceiling/mounted perpendicular to the wall.	No	150		
30	200x200mm plastic signage for fire equipment, as per SANS 1186, screwed to wall/suspended from ceiling/mounted perpendicular to wall.	No	100		
	<u>Demonstration</u>				
31	Demonstration to occupants, including four fire extinguishers of varying charges, which are to be refilled following the demonstration.	No	1		
	<u>FIRE WATER BOOSTER PUMP</u>				
	(WORK GROUP 170)				
32	Fire water pump, 30 lit/sec @ 400 kPa, including 100 lit as per Grundfos EN 80-200/188 or other approved.	No	1		
33	Installation of the above pump including all connections to the storage tank and supply reticulation to the building.	No	1		
	<u>FIRE WATER RETICULATION</u>				
	(WORK GROUP 170)				
	<u>Underground Piping</u>				
	<u>Class 12 HDPE piping laid in a 500mm deep trench on a bed of sifte sand, covered with 200mm of sifted sand compacted and then backfilled and compacted.</u>				
34	100mm diameter	m	250		
35	50mm diameter	m	250		
TOTAL CARRIED FORWARD TO SUMMARY					
	<u>Plasson Compression fittings for above piping</u>				
35	100mm - coupling	No	1		
36	50mm - coupling	No	2		
37	100mm - 90 degree tee	No	3		
38	50mm - 90 degree tee	No	4		
39	100mm - 90 elbow	No	5		
40	50mm - 90 elbow	No	6		
41	100mm - 90 elbow with threaded male offtake	No	7		
42	50mm - 90 elbow with threaded male offtake	No	8		
43	100mm to 50mm reducer	No	9		

44	100mm threaded adaptor	No	10		
45	50mm threaded adaptor	No	11		
	<u>Above Ground Piping</u>				
	<u>Copper Class 2 piping to be supplied and installed.</u>				
46	76mm piping	m	20		
47	50mm piping	m	10		
48	28mm piping	m	30		
	<u>Extra over class 2 copper pipes for compression fittings</u>				
49	76mm tee	No	2		
50	50mm tee	No	2		
51	28mm tee	No	2		
52	76mm 90 degree elbow	No	2		
53	50mm 90 degree elbow	No	2		
54	28mm 90 degree elbow	No	6		
	<u>Fire Hydrant</u>				
55	Fire hydrant complete with Ø150mm pedestal. Header pipe to be installed min 500mm below ground and stabilised with concrete at bottom of header. Header to be mounted 1200mm above ground level.	No	2		
	<u>Twin Booster Point</u>				
56	Twin sprinkler booster and standpipe with two booster Ø76mm booster connections. Standpipe concreted 500mm below ground fixed 1200mm above ground	No	1		
	<u>RECYCLED WATER BOOSTER PUMP</u>				
	(WORK GROUP 170)				
57	Water pump, 6.7 lit/sec @ 400 kPa, including 100 lit hydrosphere, as per Grundfos CBM5-46 AVBE.	No	2		
58	Installation of the above pump including all connections to the storage tank and supply reticulation to the building.	No	2		
59	Pump enclosure for the above pump, manufactured from polypropylene or other approved. Sized to suit pump supplied.	No	2		
TOTAL CARRIED FORWARD TO SUMMARY					
	<u>FIRE SUPPRESSION</u>				
	(WORK GROUP 170)				
60	A mechanically actuated, heat triggered FM-200 Automatic Gas fire suppression system to service the Records Room. Including 2 stage sounder beacons and illumination warning signs. As described in the specification document and indicated on the drawings	No	1		
61	Installation of the above fire suppression systems	No	1		
	<u>GENERAL</u>				
	(WORK GROUP 170)				
62	Testing, commissioning and handover of all equipment.	No	1		
63	Issuing of an air conditioning Certificate of Conformity for the installation.	No	1		
64	O&M manuals, in separate lever arch files, for air conditioning and ventilation systems including all technical brochures, commissioning	No	3		

	data, as-built drawings and staff training certificates, as specified.				
65	Staff training (maintenance and users) Signed certificates, as specified, to be provided.	No	1		
<u>Servicing and Guarantee</u>					
66	12 months guarantee on all equipment, as specified.	No	1		
67	6 month inspection/clean/test/minor service of all equipment, as specified.	No	1		
68	12 month inspection/clean/test/major service of all equipment, as specified.	No	1		
TOTAL CARRIED FORWARD TO SUMMARY					

	Total	
MECHANICAL WORKS BILL NO. 1 MECHANICAL SUMMARY PAGE		
PAGE 1	R	-
PAGE 2	R	-
PAGE 3	R	-
PAGE 4	R	-
PAGE 5	R	-
TOTAL	R	-

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Item	Description	Unit	Qty	Rate	Total
	<p><u>MECHANICAL WORKS</u></p> <p><u>BILL NO. 2</u></p> <p><u>FIRE DETECTION INSTALLATION</u></p> <p>NOTE : THE FOLLOWING WORK IS TO BE CARRIED OUT BY AN APPROVED SPECIALIST SUPPLIER.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Tenderers are referred to the project specifications and supplementary preambles for full descriptions of materials, etc., to be used. All work shall be done strictly in accordance with specifications and Manufacturer's instructions and leave in perfect working order after completion.</p> <p><u>(WORK GROUP 160)</u></p> <p><u>FIRE DETECTION INSTALLATION</u></p> <p><u>Wireways provided by the Electrical Contractor in the form of conduits in ceiling voids.</u></p> <p><u>Rates below are installed rates including all sundries and consumables, travel, subsistence and management, and main contractor mark up</u></p>				
1	Main Control Panel, analogue addressable, 4 loop expandable to 8 loop, suitable for tele-dialler/transmitter. Allow for 16 no volt relays for access control and ventilation interfaces.	No	1	R	-
2	LCD Repeater unit	No	1	R	-
3	Backup batteries and charger suitable for the supplied Control Panel, and a minimum of the Manual Call Points, Optical Sensors, Heat Detectors, Fire Sounders and Sirens to be installed as part of this project, in accordance with SANS 10139.	No	1	R	-
4	RS485 ARCNET Network Card	No	2	R	-
5	Supply and install Optical Smoke Detectors, excluding bases, but including terminations, etc. with alarm status LED indication and capable of remote LED indication.	No	60	R	-
6	Supply and install Heat Detectors, excluding bases, but including terminations, with alarm status LED indication and capable of remote LED indication.	No	4	R	-
7	Supply and install bases for the above Detectors, and capable of supporting remote LED indication.	No	56	R	-
8	Supply and install Isolator bases, suitable for the mounting of the Optical Sensors or Heat Detectors detailed above. Including all necessary connections, etc.	No	8	R	-
9	Supply and install addressable remote indicators, suitable for both remote Optical Smoke and Heat Detectors. Including all necessary PH30 cabling connections, etc. Within 5 to 10m from the relevant head.	No	15	R	-
10	Supply and install flush mount Manual Call Points, including all necessary back boxes, terminations, break glass (English), etc. Complete with anti-vandal flip up cover, and resettable element.	No	8	R	-
11	Supply and install low current, high output, Loop Beacon Sounder, including all necessary bases, terminations, etc. 103 dB(A) at 1m.	No	7	R	-

TOTAL CARRIED FORWARD TO SUMMARY					
12	Supply and install dome lid for round box, complete with up to 1.5m length of "sprague" trimmed to the length required.	No	94		R -
13	Supply and install 0.75 mm ² PH30 2-core Cable in a Class A configuration.	m	950		R -
14	Supply and install analogue addressable interface unit/line relay, including enclosure and outgoing compression gland for interfacing with HVAC Controllers, DBs supplying ventilation, Access Control (i.e. local door controllers), etc. Termination of related controller to be by specialist contractor	No	1		R - R -
15	25mm PVC Conduit and Fittings	m	700		R -
16	150 by 150mm draw box behind fire control panel and repeater	No	2		R -
17	IP65 rated 310x310x165mm deep UT7 fixed lid draw box	No	2		R -
18	IP65 4x4 draw boxes	No	2		R -
19	Aspirating system for 4 detectors including I/O interfaces, and 120m aspirating tubes and ducting.	No	1		R -
AS-BUILT DRAWINGS					
20	Allow for providing a set of marked up drawings and documentation for the installation to the Engineer.	No	1		R -
TESTING AND COMMISSIONING AND TRAINING					
21	Test and commission the complete installation and provide 3 sets of documentation (Block Plan, technical specifications, sales brochures, wiring diagrams, etc.), and training of operator staff, etc. leaving installation in perfect working order.	No	1		R -
MAINTENANCE AND GUARANTEE					
22	Maintenance and Guarantee of the installation, including 4x quarterly maintenance visits, two of which are to be major services.	No	1		R -
TOTAL CARRIED FORWARD TO SUMMARY					