

SECTION 1M - NEW CONSTRUCTION
PACKAGE A SUMMARY
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS

Bill No.	Description				Amount
1	SECTION 1.1				
	Engineering documentation & Certifications				
1.2	SECTION 1.2				
	Part 2 - Air Conditioning Installation				
1.3	SECTION 1.3				
1.3.1	Part 3 - Fire Protection Installation				
1.4	SECTION 1.4				
	Part 4 - LPG Installation				
1.5	SECTION 1.5				
	Part 11- Fire Detection Installation				
1.6	SECTION 1.6				
	Part 5 - Kitchen Equipment				
1.7	SECTION 1.7				
	Part 8 - Wet services Installation Hot water				
1.8	SECTION 1.8				
	Part 9- Wet services Installation Cold water				
1.9	SECTION 1.9				
	Part 10- Wet services Installation Drainage				
	TOTAL CARRIED FORWARD TO SUMMARY PAGE No. xx OF PART A - BUILDING WORKS				

SECTION 1M - NEW CONSTRUCTION
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
BILL 1 - COMMISSIONING AND DOCUMENTATION (MECHANICAL INSTALLATIONS)

ITEM	DESCRIPTION	UNIT			AMOUNT
1	Preparation of O & M manuals and Commissioning reports	Item			
2	Engineering, Submissions & Approvals	Item			
3	As Built Drawings In accordance to specification	Item			
5	Commissioning in the presence of Client & Handing over	Item			
8	Compliance with OHS specifications	Sum			
10	Additional test required by Engineer	Psum			
11	Training of End-user	Sum			
	Total carried to Summary Page				

SECTION 1M - NEW CONSTRUCTION**NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)****PART C- BILL 2 - HVAC SYSTEM STAFF ACCOMODATION**

* "Rate" includes material. delivery & installation labour.

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Supply, installation and setting of the following drawings				
	HEAT PUMP MID WALL SPLIT UNIT INVERTER				
	Design, manufacture, works testing, supply and deliver to site, moving into position and installation of the complete mechanical systems and equipment as shown on the drawings and datasheets.				
	Summary as follows:				
1.1	MIDWALL HEAT PUMP SPLIT UNITS				
	Supply and install inverter type DX heat pump midwall units complete with fittings and fixtures, including insulated supply and return air plenum boxes, as specified and shown on the drawing				
01	[AC01]: Nominal Cooling Capacity : 12000Btu	No.	12		
1.2	REFRIGERANT PIPING (R 410)				
	Supply and install comlete with all fixtures and appurtinancies for complete installation Refrigerant pipes complete with thermal insulation, other fittings and fixtures, brackets, pressure tested and fully charged up with refrigerant in accordance with datasheets and specifications for the above.				
01	15.9mm dia	m	24		
02	12.7mm dia	m	24		
03	9.5mm dia	m	24		
04	6.4mm dia	m	24		
1.3	CABLE RACK				
	Supply and install cable rack for refrigerant piping c/w joints and fixtures and fittings.				
01	200mm wide	m	10		
02	100mm wide	m	40		
03	50mm	m	10		
1.4	TRUNKING				
01	Decorative PVC Protection Pipe Cover complete with fittings and accesories	Sum	12		
	Total Carried Forward				

SECTION 1M - NEW CONSTRUCTION
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C- BILL 2 - HVAC SYSTEM STAFF ACCOMODATION
*** "Rate" includes material. delivery & installation labour.**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought Forward				
1.4	Supply PVC condensate pipes c/w joints and fixtures and fittings				
01	50mm dia	m	0	Rate only	
02	25mm dia	m	50		
03	20mm dia	m	0	Rate only	
1.5	CONTROL UNITS				
01	Supply and install hard wired wall mounted remote control units as specified for all DX split air conditioning units.	No.	12		
1.6	Toilet Wall Extractor Fans				
	Supply and instillation of Flush Wall MountedXpelair Fans speed controllable and Reversible White 50l/s extraction fan	No.	12		
1.7	ELECTRICAL WORK				
	Supply and install electrical work including power and control cabling from the Isolator to the Unit Isolator and associated installation to be provided by Elctrical contractor.				
01	2.5mm twin plus earth Norsk cable	m	48		
02	2.5mm 7 Core Norsk cable	m	48		
03	0.75mm 2 core screen cable	m	48		
1.8	TEST & COMMISSION				
01	Test and Commission the Entire Air conditioning system	Sum	1		
02	Ditto but in the presence of and to the entire satisfaction of the Consulting Engineer.	Sum	1		
	Total carried to Summary Page				

SECTION 1M - NEW BUILDINGS & FACILITY
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
BILL 1 - HVAC SYSTEM CONFERENCE CENTRE

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Supply, installation and setting of the following drawings				
	HEAT PUMP MID WALL SPLIT UNIT INVERTER				
	Design, manufacture, works testing, supply and deliver to site, moving into position, erection, connecting up, site testing, witness testing, proving to insurance inspectors, demonstrating to the Employer, commissioning and maintenance of the complete mechanical systems and equipment as shown on the drawings and datasheets.				
	Summary as follows:				
1.1	MIDWALL HEAT PUMP SPLIT UNITS				
	Supply and install inverter type DX heat pump midwall units complete with fittings and fixtures, including hot dip galvanised outside uit holding brackets as specified and shown on the drawing				
01	MW01]: Nominal Cooling Capacity : 9000Btu	No.	0	Rate only	
1.2	4 WAY BLOW CASSETTE HEAT recovery indoor Units				
	4 Way Blow Cassette Type Fan Coil Units (4 pipe system) installed complete with, low sound level centrifugal condensate pump (max 650mm pump head), 2 or 3 way valve kits provided with stop/balancing valves, hot and cold water pipes with terminating valves and unions. These units should be installed on galvanised steel cantilever brackets and on vibration padding. The LCD wired remote controller should be in a suitable position to be specified by the engineer. An auxillary drain pan should be included in this installation and condensate pipes are to be routed to the nearest drain, sloped and fitted with a 'p' trap.				
01	[CCU01]: Nominal Cooling Capacity : 2.6Kw	No.	0	Rate only	
02	CCU02]: Nominal Cooling Capacity : 3.6Kw	No.	0	Rate only	
03	[CCU03]: Nominal Cooling Capacity : 5.6Kw	No.	3		
04	CCU04]: Nominal Cooling Capacity : 7.2Kw	No.	2		
05	CCU05]: Nominal Cooling Capacity : 9Kw	No.	3		
3	VRV CONDENSING UNIT				
	Supply, Deliver to site Installation and commission of heat recovery VRV Outdoor Condensing unit of capacity as indicated below complete with plinth, vibration isolation pads and all necessary appurtenances for a complete installation.				
3.1	Meeting Rooms				
	50Kw	No	1		
	Total Carried Forward				

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BILL 1 - HVAC SYSTEM CONFERENCE CENTRE

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought Forward				
1.3	REFRIGERANT PIPING (R 410)				
	Refrigerant pipes complete with thermal insulation, other fittings and fixtures, brackets, pressure tested and fully charged up with refrigerant in accordance with datasheets and specifications for the above.				
b	1' 1/8	m	35		
c	7"/8 copper pipe suitable for R410 gas	m	15		
d	5"/8 copper pipe suitable for R410 gas	m	20		
e	3"/8 copper pipe suitable for R410 gas	m	20		
f	1"/2 copper pipe suitable for R410 gas	m	20		
01	Φ6.35mm dia	m	20		
02	Φ9.52 mm dia	m	20		
03	Φ12.7mm dia	m	20		
7.2	Refnet Joints	No	3		
7.3	BS boxes				
a	8 port	No	1		
b	2 port	No	0	Rate only	
c	1 Port	No	0	Rate only	
1.4	CABLE RACK				
	Supply and install cable rack for refrigerant piping c/w joints and fixtures and fittings.				
01	200mm wide	m	45		
02	100mm wide	m	10		
03	50mm	m	0	Rate only	
	Total Carried Forward				

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NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
BILL 1 - HVAC SYSTEM CONFERENCE CENTRE

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought Forward				
1.5	Supply PVC condensate pipes c/w joints and fixtures and fittings				
01	50mm dia	m	0	Rate only	
02	25mm dia	m	44		
03	20mm dia	m	0	Rate only	
1.6	CONTROL UNITS				
01	Supply and install hard wired remote control units as specified for all DX split air conditioning units.	No.	6		
1.7	ELECTRICAL WORK				
01	Supply and install electrical work including power and control cabling and connections as specified for the air conditioning units.	Item	8		
	BLOCK B				
2.0	PACKAGED AIR CONDITIONING UNIT				
2.1	Design, manufacture, works testing, supply and deliver to site, moving into position, erection, connecting up, site testing, witness testing, demonstrating to the Employer, commissioning and maintenance of the complete mechanical systems and equipment as shown on the drawings and datasheets.				
	Supply and install packaged heat pump unit complete with Primary and secondary filtration system, LCD wired remote controller, Magnehelic gauges across filters, louvers, 1.5D eurolon infill, avm, supports, washable pleated filters, control cabling and all fittings and fixtures to meet the following: Air on 24.3deg Celcius db/15.4deg Celcius wb; Air off 12deg C db/11deg C wb; Ambient 35degC				
01	PAU01 (2550 litres/sec, 20% fresh air, 45kW cooling capacity)	No	1		
2.2	Electrical Supply and controls				
01	Electrical Material and labour work to provide power from PAU01 to isolator point and All control cabling associated, NB:Power to isolator Points will be supplied by Electrical contractor	Sum	1		
	Total Carried Forward				

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BILL 1 - HVAC SYSTEM CONFERENCE CENTRE

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought Forward				
02	The LCD wired remote controller remote/wall mounted control unit in a suitable position to be specified by the engineer	No	1		
2.3	SUPPLY & RETURN AIR SYSTEM DUCTING				
	Supply and installation of Externally insulated ductwork installed complete with fixing arrangements and hangers complete with all necessary appurtenances As Follows:				
01	625x350	m	20		
02	450x350	m	10		
04	500x350	m	20		
05	350x350	m	10		
06	300 Dia	m	18		
07	300 Dia Flexible Ducting	m	20		
2.4	Externally insulated ductwork . Fittings				
2.4.1	Transformations				
01	625x350 to 450x350	No	1		
02	500x350 to 350x350	No	1		
2.4.2	Bends 90°				
01	625x350	No	5		
02	500x350	No	3		
2.4.3	Spigots				
01	300 Dia	No	12		
2.4.4	Velocity Control Dampers				
01	300 Dia	No	12		
2.4.5	Fire Dampers with fusible links				
01	625x350	No	1		
	500x350	No	1		
2.4.4	Volume Control Dampers				
01	450x350	No	2		
	Total Carried Forward				

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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought Forward				
2.4.6	White epoxy powder coated Supply Air variable volume diffuser with reheat, complete with flexible, plenum box, butterfly damper and mounted controllers and all appurtenances related.				
01	Ø 350	No	0	Rate only	
02	Ø 300	No	8		
03	Ø 250	No	0	Rate only	
04	Ø 200	No	0	Rate only	
2.0	VENTILLATION SYSTEMS				
2.2	EXTRACTION SYSTEM				
	Supply and Inatllation of Extraction Air Fan EAF Centrifugal fan as detailed below, installed complete with 2 off 1.5D Melanex lined attenuator, vibration isolation, square to round transformation, supports, bird screens, weather skirts, electric controls and safeties, safeties and all appurtenances related.				
01	EAF01 1425L/s @ 150Pa Static pressure	No	1		
2.3	DUCTING				
2.3.1	Un-insulated ductwork installed complete with fixing arrangements and hangers.				
01	600x350	m	8		
02	450x450	m	8		
03	350x350	m	8		
04	250x250	m	25		
05	250 dia	m	25		
06	200 dia	m	20		
2.3.2	Flexible duct				
01	200 Dia	m	45		
02	250 Dia	m	5		
2.3.3	Un- insulated ductwork . Fittings				
2.3.3.1	Transformations				
01	450dia	No	0	Rate only	
02	420dia	No	0	Rate only	
03	410dia	No	0	Rate only	
	Total Carried Forward				

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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought Forward				
2.3.3.2	Bends 90°				
03	200dia	No	6		
04	250dia	No	2		
05	250x250	No	3		
2.3.3.3	Transformations				
01	450Dia	No	2		
02	420Dia	No	2		
03	330Dia	No	8		
2.3.3.4	Spigots				
02	250dia	No	0	Rate only	
03	200dia	No	30		
04	150dia	No	0	Rate only	
2.3.3.5	Stop Ends				
01	250dia	No.	2		
02	200dia	No.	3		
03	250x250	No.	1		
2.3.3.6	Velocity Control Dampers				
01	200dia	No	24		
2.3.3.7	Curved blade extraction grille complete with OBD				
01	900x350	No	0	Rate only	
2.3.3.8	White polypropylene disc valve complete with OBD and flexible ducting.				
03	Ø 250	No	25		
04	Ø 200	No	0	Rate only	
05	Ø 150	No	0	Rate only	
	Total carried forward				

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Item	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought forward				
2.3.3.9	Door Grills				
	Supply and install extract air door transfer grilles complete with all necessary fixtures as specified and shown on the drawings				
01	DG01 400x300 Aluminium natural anodised	No	5		
3.0	ELECTRICAL WORK				
01	Supply and install electrical work including power and control cabling and connections as specified for the Ventillation systems.	Item	2		
4.0	Vandal proofing of installation				
	Provision of tailor made security cages for Outdoor Units for each Split unit to protect againat theft	Item	2		
5.0	Testing & Commissioning				
01	Testing & Balancing	Sum	1		
02	Commissioning & Handing over	Sum	1		
	Total carried to Summary Page				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
BILL 2 - FIRE PROTECTION INSTALLATION

Item	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Design, manufacture, works testing, supply and deliver to site, moving into position, erection, connecting up, site testing, witness testing, proving to insurance inspectors, demonstrating to the Employer, commissioning and maintenance of the complete mechanical systems and equipment as shown on the drawings and datasheets.				
1.0	FIRE HOSE REELS				
	30m fire hose reel including pro-rata cost for 50mm connecting pipework from the fire reticulation main including 25 diameter drop pipe to hose reel and break ins, fittings, pipework, hanging/fixing materials, finished paintwork, pressure gauge, etc., as per detail on tender drawings.				
01	Staff Accomodation	No.	4		
02	Hotel	No.	4		
03	Conference Centre	No.	3		
1.1	PIPEWORK				
	Supply and install medium grade, seamless galvanized mild steel pipework c/w pipe supports and accessories as specified and shown on the drawings				
01	32mm dia	m	40		
02	25mm dia	m	15		
1.2	SITE RETICULATION AND HYDRANTS				
1.2.1	Site Hydrants				
01	100mm cast iron tamper proof hydrant valve	No	5		
02	"Chubb" 03451 pair of gunmetal instantaneous steamer connections fitted with caps and short lengths of chain, including U-tube and pressure gauge	No	5		
03	100mm Tamper proof "Double - Booster" hydrant valve	No	2		
04	Provide 1200m x 80mm galvanised piping riser	No	7		
05	Provide hydrants with 15MPA concrete anchors	No	7		
1.2.2	Package A Site Ringmain				
01	Supply and Install 110mm HDPE pipe c/w pipe supports and accessories as specified as per site drawing	m	845		
02	Supply and Install 65mm HDPE pipe as per site drawing	m	30		
03	Supply and Install 40mm HDPE Pipe as per site drawing	m	95		
04	Supply and Install 110 mm Isolation valve	No	2		
05	Excavation of Trench and back filling with imported material	m	940		
1.3	Extra Over for HDPE Fittings				
01	110mm bend	no	20		
02	110mm Tee	no	30		
03	65mm bend	no	10		
04	65mm Tee	no	20		
	Total Carried Forward				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
BILL 2 - FIRE PROTECTION INSTALLATION

Item	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought Forward				
1.4	Tees and reducing tees				
1.4.1	GALVANISED				
01	100 x 100 x 100mm	No	10		
02	100 x 80 x 100mm	No	10		
03	100 x 65 x 100mm	No	8		
04	80 x 80 x 80mm	No	2		
05	80 x 65 x 80mm	No	8		
06	65 x 65 x 65mm	No	8		
07	65 x 32 x 65mm	No	4		
08	65 x 32 x 65mm	No	4		
09	65 x 25 x 65mm	No	12		
10	32 x 32 x 32mm	No	15		
11	32 x 25 x 32mm	No	10		
12	25 x 25 x 25mm	No	12		
1.4.2	HDPE				
01	100 x 100 x 100mm	No	15		
02	100 x 80 x 100mm	No	15		
03	100 x 65 x 100mm	No	10		
2.0	PORTABLE FIRE EXTINGUISHERS				
2.1	Supply and install fire extinguishers complete as specified				
2.1.1	9 kg CO2 fire extinguishers complete with backboard mounted as required				
01	Conference Centre	No.	1		
02	Hotel	No.	0	Rate only	
03	Staff Accomodation	No.	0	Rate only	
2.1.2	4,5 kg DCP fire extinguishers complete with backboard mounted as required				
01	Conference Centre	No.	10		
02	Hotel	No.	8		
03	Staff Accomodation	No.	12		
2.1.3	5kg kg carbon dioxide extinguishers in weather proo polycarbonate cabinet complete with backboard mounted as required				
01	Conference Centre	No.	1		
02	Hotel	No.	1		
03	Staff Accomodation	No.	0	Rate only	
2.2	FIRE Hose Reel CABINETS				
	Supply and install weather proof steel cabinets for fire Hose reels & 2x Fire extinguishers	No	0	Rate only	
3.0	STATUTORY FIRE SIGNAGE				
	Supply and install photo luminescent fire and evacuation signage as described below and as per the tender drawings:				
	All signs to be framed in the natural anodized aluminium frame with mitred corner and concealed elbow joints.				
	All wall mounted fire and evacuation signs to be fixed with concealed screws and no double sided tape will be permitted for the mounting of the signs.				
	Total Carried Forward				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
BILL 2 - FIRE PROTECTION INSTALLATION

Item	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Total Brought Forward				
	All suspended fire and evacuation signs to be hung from a steel cables or metal chains.				
	All signage to be a minimum 190mm size. And Photoluminescent				
	All fire and evacuation signs to be SANS 1186-1, 1186-3 and 1186-5 approved, and also to bear the SANS stamp of approval.				
01	E1/E2	no.	8		
02	E2	no.	8		
03	E3	no.	8		
04	F15	no.	0		
05	F4/5/6	no.	12		
06	F13	no.	39		
07	EE3	no.	7		
08	Assembly point signage complete with 2.1m mounting pole	no.	3		
4.0	Fire Blanket				
01	Supply and installation of 1.8mx1.8m Fiberglass Fire Emergency Blanket in the main kitchens	Item	0	Rate only	
02	Supply and installation of 1.0mx1.0m Fiberglass Fire Emergency Blanket in the main kitchens	Item	1		
5.0	Testing & Commissioning				
01	Testing & Balancing	Sum	1		
02	Commissioning & Handing over	Sum	1		
	Total carried to Summary Page				

SECTION 1M - NEW CONSTRUCTION
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
BILL 2 - FIRE DETECTION INSTALLATION (Conference Center & Hotel)

Item	Description	Unit	Qty	Rate	Amount
1	CONTROL AND COMMUNICATION				
	Supply and installation of addressable, Category L1 fire detection and alarm system in accordance with SANS 10139 requirements				
	Fire Detection system to be of Ziton Manufacture or equivalent.				
1.1	Fire Alarm Control Panels				
	Supply and installation of fire alarm control panel complete, including all necessary mounting brackets glands etc.				
01	4 Loops Addressable fire alarm control panel complete with zone indication matrix, Network Card and 72hr Battery Backup all inclusive	No	1		
02	Addressable fire Panel Repeater/ mimic supplied complete with zone indication matrix, Network Card and 72hr Battery Backup all inclusive	No	3		
1.2	Cabling and Terminations				
	2-Core - 1.5mm2 - Fire retardent cable installed in conduit (conduit measured elsewhere), including terminations.				
01	Fire Resistant PH120 Fire cable. Twisted 2C x 1.5 Sq.mm + E, Stranded	m	285		
01	Cat 6 Networking cable c/w fire retardant insulation	m	85		
1.3	Power Supplies				
01	Allow for electrical supplies to the fire alarm control panel.	sum	1		
1.2	LINE DEVICES				
	All line devices to be analogue addressable and provided with address labels				
	Total Carried Forward				

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BILL 2 - FIRE DETECTION INSTALLATION (Conference Center & Hotel)

Item	Description	Unit	Qty	Rate	Amount
	Total Brought Forward	Sum			
1.2.1	Optical point-type smoke detectors				
01	Supply and installation of addressable, optical smoke detectors, complete with base surface mounted to concrete slab or ceiling	No	51		
1.2.2	Fixed Temperature Heat Detectors				
01	Supply and installation of addresssable heat detector, complete with base surface mounted to concrete slab/ceiling	No	4		
1.2.3	Multisensor (Optical Smoke and Heat)				
01	Supply and installation of addressable, optical smoke/heat detector, complete with base surface mounted to ceiling	No	0	Rate only	
1.2.4	Optical Beam Detectors				
01	Supply and installation of optical beam detectors complete with detector, power supply, battery, backboard nad I/O Unit	No	0	Rate only	
1.2.5	Resettable Break Glass Unit				
	Supply and installation of addressable manual call points complete with resettable elements - surface mounted				
01	Manual Call Point (Red) - supplied complete with clear plastic hinged cover	No	8		
02	Weatherproof manual call point red supplied complete with clear plastic hinged cover	No	3		
03	Emergency Door Release (Green) - complete with clear plastic hinged cover	No	3		
	Total Carried Forward				

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BILL 2 - FIRE DETECTION INSTALLATION (Conference Center & Hotel)

Item	Description	Unit	Qty	Rate	Amount
	Total Brought Forward	Sum			
1.2.6	Audible and visual alarms				
01	Supply and installation of surface mounted horn sounder and strobe visual indicator (white) complete with base	No	3		
02	Supply and installation of addressable weatherproof Sounder Beacon (Red)	No	3		
1.2.7	Interface and Control				
	Supply and installation of interface units and relays supplied complete with surface mounted single relay box (SMB-DIN1) c/w DIN35 rails for fixing				
01	Input/Output Relay Unit	No	3		
02	Isolator Base Supplied complete with Cover to suit	No	3		
2.0	CONDUIT, WIREWAYS & ACCESSORIES				
	Conduit as specified under clause 3.3 of the standard specification including bending, jointing, short lengths, draw boxes, expansion joints, adaptors, round coverplates with chrome screws/bends and conduit ends which are to be allowed for in the conduit per meter rate.				
2.1	PVC Conduit				
01	Ø25mm PVC conduit built or chased into brick walls	m	245		
02	Ø25mm galvanised conduit on surface against underside of the concrete slab or against brick walls complete with galvanised saddles spaced at 500mm centres	m	150		
2.2	Galvanised / Bosal Conduit				
01	Ø25mm Galvanized / Bosal Conduit on surface against underside of the concrete slab or against brick walls	m	65		
	Total Carried Forward				

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PART C MECHANICAL INSTALLATIONS
BILL 2 - FIRE DETECTION INSTALLATION (Conference Center & Hotel)

Item	Description	Unit	Qty	Rate	Amount
	Total Brought Forward	Sum			
2.3	Draw Wire - Supply and Install by Electrical Contractor				
01	Galvanised draw wire installed in conduits.	m	285		
2.4	Wire Baskets				
01	HDG Wire Mesh Cable Tray 100mm medium duty	m	70		
3.0	Testing & Commissioning				
01	Testing & Balancing	Sum	1		
02	Commissioning & Handing over	Sum	1		
	Total carried to Summary Page				

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NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
BILL 4 - LP GAS INSTALLATION

Item	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	* "Rate" includes material. delivery & installation labour.				
	Nutrition Centre/Kitchen				
	The supply, delivery, installation and commissioning of equipment as per the requirements of SANS 10087-1 for LPG gas installation				
A	CONFERENCE CENTER KITCHEN				
1,0	Copper piping complete with fittings, brackets and welded joints.				
1.1	15mm dia nominal bore	m	10		
1.2	22mm dia nominal bore	m	0	Rate only	
1.3	25mm dia nominal bore	m	0	Rate only	
2,0	LPG Gas Quality Isolating Valve				
2.1	15mm dia nominal bore	No.	3		
2.2	25mm dia nominal bore	No.	0	Rate only	
2.3	Low Pressure regulator	No	1		
3,0	LPG Gas Quality Flexible Hose Connector				
2.1	15mm dia nominal bore	No.	1		
2.1	25mm dia nominal bore	No.	0	Rate only	
4,0	Sleeve				
4,1	50mm PVC Sleeve to be cast in floor	m	5		
5,0	Supply and Install 2x2 48kg LPG right and left Cylinders, Manifold and Ancillary Equipment as per Tender Drawing:				
5,1	2x2 Cylinder Manifold	Item	1		
5,2	Supply 48kg Cylinders	Item	0	Rate only	
6,0	Fittings				
6,1	Reducers				
01	25 -15 mm dia nominal bore	No.	0	Rate only	
02	15 -10 mm dia nominal bore	No.	0	Rate only	
6,2	Bends				
01	25 mm dia nominal bore	No.	0	Rate only	
02	15 mm dia nominal bore	No.	5		
6,3	Tees				
01	25mm dia nominal bore	No.	0	Rate only	
7,0	Valve Box				
	Isolating valve box including valves, instrumentation, identification labelling, etc				
	Valve Cabinets with one Diameter 25mm Isolating valve.	No.	1		
	TOTAL CARRIED FORWARD				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
BILL 4 - LP GAS INSTALLATION

Item	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	* "Rate" includes material. delivery & installation labour.				
	TOTAL BROUGHT FORWARD				
8,0	PRESSURE REGULATOR				
8,1	FIRST STAGE PRESSURE REGULATOR				
	Supply, deliver, off-load, store on site and install First Stage Pressure regulator for a maximum gas demand of 750 000kJ/hr	No.	1		
9,0	1000x550mm Steel Diamond Steel mesh hot dip galvanised locable cage/enclosure with roof, pad lock, no-unauthorised personnel, no-smoking sign, no celphone sign	Item	1		
	TOTAL CARRIED TO SUMMARY PAGE				

SECTION 1M - NEW CONSTRUCTION
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO. 5B: KITCHEN EQUIPMENT (MECHANICAL INSTALLATIONS)

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE*	AMOUNT
	Supply, install and commission the following Kitchen Equipment as per the Technical specification				
	* "Rate" includes material. delivery & installation labour.				
	Conference centre Kitchen				
1.0	Cooking Equipment				
01	4 Burner gas stove 118,000 kj/hr, Floor Standing with Electric Oven.	No	1		
3.0	Hydro boil water heaters are				
01	15L	item	1		
5.0	Chest freezers				
	Electric. Supply, installed and commissioned.240V, 2.2kW, Size 874 x 1751 x 680	No	1		
6.0	Industrial microwave				
	Electric, Commerial grade. Supply, installed and commissioned.55 liters, 240V, 2kW	No	2		
7.0	Tables				
	Supply and installation of All 430 stainless steel top with under shelf. Stainless steel legs with adjustable foot pieces. Heavy duty galvanised backing sheet with bitumastic sound deadening. 150mm high splash back to rear. Supply, installed and commissioned				
01	900 x 650 x 910mm (H)	No	1		
02	1200 x 650 x 910mm (H)	No	2		
03	1840 x 650 x 910mm (H)	No	1		
04	2250 x 650 x 910mm (H)	No	1		
8.0	Sinks				
	All 430 type stainless steel. Cold pressed bowl AISI 304CR NI grade stainless steel with 40mm waste outlet hole. 150mm high splash back to rear. Stainless steel legs with adjustable foot pieces. Heavy duty backing sheet with bitumastic sound deadening. Supply, installed and commissioned				
03	Double Bowl Preparation Sink. Bowl Dimensions: 505 x 505 x 250mm (D). Total dimensions: 1850 x 650 x 910mm (H)	No	1		
1.0	EXTRACTION CANOPY				
	Supply, install and commission the following Equipment as per the Technical specification				
	Stainless steel Extraction Canopy with support brackets, Filters, Fire Dampers, Drip trays etc.As follows: Refer to detail drawings/ working drawings				
1.1	EXTRACTION CANOPY				
	1200x950 Canopy of 09mm 430 stainless steel with a no 4 satin finish. Canopy to have 2 x 495l/s inertia filters. Fan capacity as follows: 950l/s@ 150Pa	No	1		
	TOTAL AMOUNT CARRIED FORWARD TO SUMMARY PAGE				

SECTION 1M - NEW CONSTRUCTION**NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)****SECTION 1.8 - BILL NO. 8: HOT WATER GENERATION & DISTRIBUTION (MECHANICAL INSTALLATIONS)**

Item	Description	Unit	QTY	Rate	Amount
	Bill No 2: Hot Water Plant				
	The supply, delivery, installation and commisioning of equipment as shall be detailed in this schedule.Tenderers are referred to The Technical specification for the Domestic Hot and Cold Water Installation.				
1	COPPER PIPE				
	Class 0 copper water piping in accordance with SANS 460 installed complete with short lengths, cutting, plain couplings, capillary solder and jointing strictly in accordance with the Manufacturer's instructions, support bracksts etc.				
1.1	Chased in Wall Pipe lengths: (Including chasing,welding, connectors, etc.)				
01	dia 15	m	265		
02	dia 22	m	165		
03	dia 28	m	225		
1.2	In Ceiling Void/ shaft Pipe lengths: (Including hangers, brackets, welding, mountings, flanges, gaskets, connectors, bolts, nuts, washers, anchors, joining connectors, etc.)				
01	dia 15	m	50		
02	dia 22	m	20		
03	dia 28	m	225		
04	dia 35	m	20		
05	dia 42	m	0	Rate only	
1.3	Bends: (Including hangers, brackets, welding, mountings, flanges, gaskets, etc.)				
01	dia 15	No	185		
02	dia 22	No	80		
03	dia 28	No	50		
1.4	Tees: Extra over copper piping for capillary fittings in accordance with SANS - 2 complete with hangers, brackets, soldering , etc.				
01	dia 15-15-15	No	105		
02	dia 22-22-22	No	70		
03	dia 28-28-28	No	25		
	TOTAL CARRIED FORWARD				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
SECTION 1.8 - BILL NO. 8: HOT WATER GENERATION & DISTRIBUTION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	TOTAL BROUGHT FORWARD				
1.5	Reducers				
	Extra over copper piping for capillary fittings in accordance with SANS - 2 complete with hangers, brackets, soldering , etc.				
01	dia 22 - 15	No	65		
02	dia 28 - 22	No	65		
2	Isolating valves: Ball type Isolating Valve complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions and complying to SANS 1056 - 3				
2.1	dia 15	No	105		
2.2	dia 22	No	70		
2.3	dia 28	No	15		
3	Non return valves: Lift type Non Return Valve complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions.				
3.1	dia 22	No	0	Rate only	
4	Pressure Relief Valves: Specified Valve complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions.				
4.1	dia 22	No	0	Rate only	
5	Air Relief Valves: Specified Valve complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions.				
5.1	dia 22	No	30		
6	Vacuum Breaker: Specified Valve complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions.				
6.1	dia 22	No	30		
7	Strainers: Specified Strainer complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions.				
7.1	dia 22	No	0	Rate only	
7.2	dia 28	No	0	Rate only	
7.3	dia 32	No	0	Rate only	
8	Pipe Mounted Measuring Port				
	Specified pipe mounted temperature measuring port complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions.	No	0	Rate only	
	TOTAL CARRIED FORWARD				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
SECTION 1.8 - BILL NO. 8: HOT WATER GENERATION & DISTRIBUTION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	TOTAL BROUGHT FORWARD				
9.0	Pipe Insulation				
	25 mm thick snap-on preformed glass fibre insulation a density of 80 kg/m3 covered with cloth wrapp.				
9.1	dia 15	m	50		
9.2	dia 22	m	20		
9.3	dia 28	m	225		
9.4	dia 35	m	5		
9.5	dia 42	m	5		
10.0	Pipe Insulation (Exposed piping) 25 mm thick snap-on preformed glass fibre insulation with a density of 80 kg/m3 and covered with 0.5mm thick galvanised sheet metal cladding.				
10.1	dia 25	m	0	Rate only	
10.2	dia 22	m	0	Rate only	
10.3	dia 28	m	0	Rate only	
12	Pipe hangers: Complete with angle irons, hangers, rods,chains/rods, brackets, anchors/fasteners, welding, mountings, flanges, gaskets, bolts, nuts, washers, etc.				
12.1	Pipe hangers:(Ceiling or Truss Mounted)				
12,1,1	dia 108 to 15 Two Pipe Support.	No	50		
12,1,2	dia 108 to 15 Single Pipe Support.	No	50		
19	Solar Geyser With Electric Back up rated 3Kw				
19.1	150L	No.	28		
19.2	Adjustable inclined roof Mounting Bracket set at 36 degree to the horizontal and facing North	No.	28		
20	Electric Geyser rated 3Kw				
20.1	100 Liter	No.	3		
20.2	Galv Drip tray Geyser 150/200L	No.	3		
21.0	Testing & Commissioning				
01	Pressure Testing & Balancing	Sum	1		
02	Commissioning & Handing over	Sum	1		
	TOTAL CARRIED TO FINAL SUMMARY PAGE				

SECTION 1M - NEW CONSTRUCTION**NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)****MECHANICAL INSTALLATIONS****SECTION 1.1 - BILL NO 1,9: COLD WATER RETICULATION (MECHANICAL INSTALLATIONS)**

Item	Description	Unit	Qty	Rate	Amount
	The supply, delivery, installation and commissioning of water piping as shall be detailed in this schedule. Tenderers are referred to The Technical specification for wet services DID-E-M2 Rev2				
1.0	COPPER PIPE				
	Class 0 copper water piping in accordance with SANS 460 installed complete with short lengths, cutting, plain couplings, capillary solder and jointing strictly in accordance with the specification for Wet service, support brackets and all necessary appurtenances for a complete installation				
1.1	Chased in Wall Pipe lengths: (Including chasing, welding, connectors, etc.)				
01	dia 15	m	415		
02	dia 22	m	165		
03	dia 28	m	225		
1.2	In Ceiling Void/ shaft Pipe lengths: (Including hangers, brackets, welding, mountings, flanges, gaskets, connectors, bolts, nuts, washers, anchors, joining connectors, etc.)				
01	dia 15	m	385		
02	dia 22	m	210		
03	dia 28	m	155		
04	dia 35	m	90		
05	dia 42	m	115		
06	dia 54	m	50		
1.3	Bends:				
01	dia 15	No.	510		
03	dia 22	No.	140		
04	dia 28	No.	165		
05	dia 35	No.	90		
06	dia 42	No.	45		
07	dia 54	No.	90		
1.4	Tees:				
01	dia 15	No.	510		
	TOTAL CARRIED FORWARD				

SECTION 1M - NEW CONSTRUCTION

NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)

MECHANICAL INSTALLATIONS**SECTION 1.1 - BILL NO 1,9: COLD WATER RETICULATION (MECHANICAL INSTALLATIONS)**

Item	Description	Unit	Qty	Rate	Amount
	TOTAL BROUGHT FORWARD				
02	dia 22	No.	140		
03	dia 28	No.	345		
04	dia 35	No.	205		
05	dia 42	No.	20		
06	dia 54	No.	20		
1.5	Reducers				
01	dia 22x15	No.	340		
02	dia 28x15	No.	260		
03	dia 35x15	No.	240		
04	dia 42x22	No.	240		
05	dia 54x22	No.	240		
2.0	Isolating valves: Ball type Isolating Valve complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions and complying to SANS 1056 - 3				
01	dia 15	No.	155		
02	dia 22	No.	65		
03	dia 28	No.	20		
04	dia 35	No.	5		
05	dia 42	No.	5		
06	dia 54	No.	5		
	TOTAL CARRIED FORWARD				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO 1,9: COLD WATER RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	TOTAL BROUGHT FORWARD				
3.0	Non return valves: Lift type Non Return Valve complete with couplings to piping, etc., all strictly in accordance with Manufacturer's instructions.				
01	dia 42	No.	1		
02	dia 54	No.	1		
03	dia 110	No.	2		
4.0	Pressure Reducing Valve				
01	dia 22	No	5	Rate only	
02	dia 28	No	0	Rate only	
03	dia 40	No	5		
04	dia 100	No	0	Rate only	
5.0	Flexible Connection: Flexible braided connection 15mm dia [300mm long]	No	90		
6.0	Pipe hangers: Complete with angle irons, hangers, rods,chains/rods, brackets, anchors/fasteners, welding, mountings, flanges, gaskets, bolts, nuts, washers, etc.				
6.1	Pipe hangers:(Ceiling or Truss Mounted)				
01	dia 54 to 15mm Three Pipe Support.	No.	105		
7.0	Cable tray for pipe including installation, complete with 41mm galvanised uni-strut type channel and 10mm galvanised threaded rods.				
01	300x100	m	225		
02	150x100	m	120		
8.0	Site Reticulation/ House connections				
8.1	Excavation & Backfilling				
01	Excavation of Trench and back filling with imported material	m	100		
	TOTAL CARRIED FORWARD				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
CULTURA HIGH SCHOOL
SECTION 1.1 - BILL NO 1,9: COLD WATER RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	TOTAL BROUGHT FORWARD				
8.2	HDPE Piping				
	Under ground piping connections to ring Main Connection to site water reticulation(Including jointing, joining connectors, etc. Piping to be extruded complete with colour coding as per Gauteng DID Specifications)				
01	dia 22	m	0	Rate only	
02	dia 28	m	0	Rate only	
03	dia 35	m	0	Rate only	
04	dia 42	m	80		
8.3	Bends: (Including jointing, joining connectors, etc. as per Gauteng DID Specifications)				
01	dia 22	No.	0	Rate only	
02	dia 28	No.	0	Rate only	
03	dia 35	No.	0	Rate only	
04	dia 42	No.	130		
8.4	Tees: (Including jointing, joining connectors, etc. as per Gauteng DID Specifications)				
01	dia 15	No.	0	Rate only	
02	dia 22	No.	0	Rate only	
03	dia 28	No.	0	Rate only	
04	dia 35	No.	0	Rate only	
05	dia 42	No.	45	Rate only	
06	Sterilisation of pipelines	Sum	1		
21.0	Testing & Commissioning				
01	Pressure Testing & Balancing	Sum	1		
02	Commissioning & Handing over	Sum	1		
	TOTAL CARRIED TO FINAL SUMMARY PAGE				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO 1,9: DRAINAGE RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	Qty	Rate	Amount
	PLUMBING AND DRAINAGE (PROVISIONAL)				
A	NOTE: Tenderers are advised to study the Model Preambles for "Specification of materials and method to be used - General Specification for building contracts standard conditions." (GP ASC Rev 0) Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the principal agent				
B	NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No 146 and 148 for CPAP purposes				
C	uPVC pressure pipes and fittings: Pipes for water supply shall be of the class described. Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings. Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints				
D	Copper pipes: Pipes shall be carbon free and of hard drawn Class O as manufactured by "Maksal". Pipes shall not be bent. Fittings to copper pipes shall be "Cobra Watertech" type capillary solder fittings. Capillary solder fittings shall comply with ISO 2016. Copper pipes are to be installed in accordance with the latest revision of the code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copperflux composition				
E	Galvanised steel pipes and fittings: Galvanised steel pipes are to be "Tosa" medium class to SABS 62 and fittings are to be manufactured by "Tupy"				
	Total Carried forward				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO 1,9: DRAINAGE RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	Brought Down				
F	Reducing fittings: Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60 mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60 mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained				
G	Disinfection of water pipework: All pipework is to be disinfected in accordance with SABS 1				
H	General: Descriptions of pipes laid in and including trenches, inspection chambers, french drains, septic tanks, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Modified AASHTO density and disposal of surplus material. Descriptions of copper service pipes and flexible connecting pipes shall include connections to taps, cisterns, etc and to steel pipes. Descriptions of wc pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors separately measured). Unless otherwise stated all items in this bill shall be deemed to fall into Work Group No. 148 for CPAP purposes				
	Total Carried forward				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO 1,9: DRAINAGE RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	Brought Down				
1.0	uPVC pipes				
01	40mm Pipes	m	0	Rate only	
02	50mm Pipes	m	750		
03	110mm Pipes laid in and including trenches not exceeding 1m deep under surface beds	m	350		
2.0	Extra over uPVC pipes for uPVC fittings				
01	50 x 40mm Reducer	No	0	Rate only	
02	50-50mm Coupling	No	250		
03	40mm Bend	No	0	Rate only	
04	50 mm Tee	No	80		
05	50mm Bend	No	180		
06	40mm Access bend	No	0	Rate only	
07	50mm Access bend	No	150		
07	50mm Access bend with ventilation horn	No	20		
08	110mm Access bend with ventilation horn	No	10		
09	50mm Access junction	No	25		
10	110mm Access junction	No	65		
11	110mm Straight pan connector	No	70		
12	50mm "G.I. One way" vent valve	No	30		
13	110mm "G.I. One way" vent valve	No	10		
14	50 mm Strap-on-boss connector	No	5		
	Total Carried forward				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO 1,9: DRAINAGE RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	Brought Down				
	WASTE UNIONS ETC				
3.0	Waster Unions				
01	32mm chrome plated basin waste union with backnut,plug and chain.	No	50		
02	38mm Urinal waste union with backnut	No	15		
4.0	TRAPS				
01	50mm Deep seal "P" or "S" trap	No	55		
02	32-50mm Butyl rubber deep seal P or S trap	No	5		
03	50-50mm Butyl rubber deep seal P or S trap	No	8		
04	50 x 300mm Butyl rubber combination for double bowl and with two deep seal P traps	No	7		
05	32-40mm Chromium plated bottle trap	No	10		
06	40-40mm Chromium plated bottle trap	No	0	Rate only	
07	110mm dia P-trap right or left outlet	No	15		
08	110mm dia P-trap left or right or rear outlet	No	20		
5.0	Bottle Traps or other approved				
01	32mm '345/40' Chrome plated bottle trap with outlet for 40mm PVC	No	0	Rate only	
6.0	Brass				
01	40mm Shower trap including stainless steel grating	No	7		
	Total Carried forward				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO 1,9: DRAINAGE RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	Brought Down				
7.0	Floor drain				
01	A complete 40mm side outlet wet floor drain with 75mm water trap & white ABS plastic grate.	No	40		
8.0	Site reticulation / House connections				
8.1	DRAINAGE				
	Drainage below ground. Supply, erection & commissioning of complete drainage system acc to SANS 10252-2. SVP Piping				
8.1.1	HDPE PIPING SYSTEM: (Under ground buried) HDPE pipe to SANS 4427 Part 2 Pipes of 75mm and larger: Material grade PE 100 and pressure rating PN 12.5. Supply pipe in 12 m (minimum) lengths. Pipes less than 75mm: Material grade PE 100 and pressure rating PN 16. Supply pipe in 100m coils (minimum) lengths. Installed complete with cutting, strictly in accordance with the Manufacturer's instructions and SANS 4427. Connections underground shall be busion or butt welded only. To ensure water tightness use butt-welded joints (SABS 0268 â€”Part 1) or electro-fusion welding (SABS 0268 â€”Part 2) where butt welding is not possible. No compression fittings are allowed except if in watertight manholes. All piping must be pressure tested in the presence of the Department and the Department must carry out all inspections before backfilling takes place. Prepare trenches and do backfilling and compacting in accordance with SANS 1200. Trenching to be done acc to DEPARTMENT OF PUBLIC WORKS APPROPRIATE DEVELOPMENT OF INFRASTRUCTURE ON DOLOMITE: GUIDELINES FOR CONSULTANTS. Piping from main reticulation to the building is unjointed.				
01	110 mm N, piping to SANS 791	m	280		
	Total Carried forward				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO 1,9: DRAINAGE RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	Brought Down				
8.1.2	SVP Fittings				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
01	110mm N _a T-piece 45Å° (Y style) to 110mm	No	35		
02	HDPE Electrofusion Coupler 50mm		50		
03	160mm X 110mm Branch 45°	No	25		
04	HDPE Y-Branch fitting 135deg 110x110	No	25		
05	HDPE Electrofusion Coupler 110mm	No	80		
06	HDPE Branch fitting swept 88.5deg 110x110	No	25		
8.1.3	Bends 45 deg (butt weld): HDPE fittings to SANS 4427 Part 3 Material grade PE 100 and pressure rating PN 12.5 Installed complete with cutting, strictly in accordance with the Manufacturer's instructions and SANS 4427.				
01	outside dia 110	No	20		
8.1.4	Bends 90 deg (butt weld): HDPE fittings to SANS 4427 Part 3 Material grade PE 100 and pressure rating PN 12.5 Installed complete with cutting, strictly in accordance with the Manufacturer's instructions and SANS 4427.				
01	outside dia 110	No	30		
02	outside dia 50	No	50		
9.0	Trenching and backfilling				
	Excavation of Trench and back filling with imported material. Trench and backfill to SANS 1200 as per drawing				
01	outside dia 110 exceeding 1m but not exceeding 2m deep	m	144		
	Total Carried forward				

SECTION 1M - ALTERATIONS, RENOVATIONS & NEW BUILDINGS
NYLSVLEI(STAFF ACCOMODATIONS, CONFERENCE FACILITY & HOTEL)
PART C MECHANICAL INSTALLATIONS
SECTION 1.1 - BILL NO 1,9: DRAINAGE RETICULATION (MECHANICAL INSTALLATIONS)

Item	Description	Unit	QTY	Rate	Amount
	Brought Down				
10.0	Testing & Commissioning				
01	Pressure Testing & Balancing	Sum	1		
02	Commissioning & Handing over	Sum	1		
	Total Carried to summary				