

Bill No.	Description	Total
Bill 1.1	TERMINAL BUILDING - PRELIMINARY & GENERAL	
Bill 1.2	TERMINAL BUILDING - AIR CONDITIONING	
Bill 1.3	TERMINAL BUILDING - EXTRACTION SYSTEMS	
Bill 1.4	TERMINAL BUILDING - VENTILATION SYSTEMS	
Bill 1.5	TERMINAL BUILDING - BUILDERS WORKS	
Bill 2.1	FIRE STATION - PRELIMINARY & GENERAL	
Bill 2.2	FIRE STATION - AIR CONDITIONING	
Bill 2.3	FIRE STATION - EXTRACTION SYSTEMS	
Bill 2.4	FIRE STATION - BUILDERS WORKS	
Bill 3.1	CONTROL CENTRE - PRELIMINARY & GENERAL	
Bill 3.2	CONTROL CENTRE - AIR CONDITIONING	
Bill 3.3	CONTROL CENTRE - BUILDERS WORKS	
Bill 3.4	CONTROL CENTRE - VENTILATION SYSTEMS	
Bill 4.1	CAR RENTAL - PRELIMINARY & GENERAL	
Bill 4.2	CAR RENTAL - AIR CONDITIONING	
Bill 4.3	CAR RENTAL - EXTRACTION SYSTEMS	
Bill 4.4	CAR RENTAL - VENTILATION SYSTEMS	
Bill 4.5	CAR RENTAL - BUILDERS WORKS	
Bill 5.1	RAMP HANDLERS - PRELIMINARY & GENERAL	
Bill 5.2	RAMP HANDLERS - AIR CONDITIONING	
Bill 5.3	RAMP HANDLERS - EXTRACTION SYSTEMS	
Bill 5.4	RAMP HANDLERS - VENTILATION SYSTEMS	
Bill 5.5	RAMP HANDLERS - BUILDERS WORKS	
Bill 6,1	HVAC ESSENTIAL SUPPLY CONNECTIONS	
	SUB TOTAL	
	Contingency 0%	
	12 Month Warranty Maintenance (Guarantee included in costings)	
	Preliminaries and General 0%	
	TOTAL TENDER VALUE (EXCL VAT)	

	Add VAT 15%	
TOTAL TENDER VALUE (INCL VAT)		

Bill 1 Terminal Building						
No.	Description	Unit	Qty	Rate	Install	Total
1.1	PRELIMINARY & GENERAL					
	Note: All items shall be priced for whatever cost may be considered necessary for Preliminary and General to carry out the Mechanical Installations in full, as detailed in the drawings, Specifications and Schedules, which shall include, but shall not be limited, to the following:					
1.1.1	Allow for all contractual requirements including provision of all contractors all risk insurances, 10% Performance Guarantee, etc.	Item	1			
1.1.2	Site Establishment - on the Land Side for the contractors camp. Establishment of workshops, sheds, offices, toilets etc. required by Contractor for the execution of the works.	Item	1			
1.1.3	Preparation of a H&S File as per the Occupational Health and Safety Act No. 85 of 1993, 17th Ed with all Risks identified, Landside and Airside	Item	1			
1.1.4	Allowance for Vehicle and personnel permits - Airside work - paid on receipt of proof	Item	1	R 4 000,00		R 4 000,00
1.1.5	Equipment and Systems operation instruction and training for Employer's staff prior to handover to the Client	Item	1			
1.1.6	Three (3) copies of O&M Manuals (Hard and Electronic copies)	Item	1			
1.1.7	"As Built" drawings (3 copies)	Item	1			
1.1.8	Provision of full Maintenance and Warranty for all installations and equipment for 12 (Twelve) months from the date of Practical Completion. Service records to be compiled and submitted for each service carried out. Refer to Tender Specification.	Item	1			
1.1.9	Allowance for Electrical Connections and CoCs	Item	1			
1.1.10	Scaffolding	Item	1			
1.1.11	Cranage - 30m boom	Item	1			
1.1.12	Removal of existing and redundant Air Handling Units [x 4] and Chillers [x 2]	Item	1			
1.1.13	Contingencies	PC Sum	1	R 100 000,00		R100 000,00
Carried Forward to Bill 1.1 Collection:						

Bill 1 Terminal Building						
No.	Description	Unit	Qty	Rate	Install	Total
1.1	AIR CONDITIONING SYSTEMS					
	Supply, Delivery and Installation of Split units Air Conditioning systems complete with indoor and outdoor units. Including trunking, piping between outdoor and indoor portions of unit, mounting brackets, condensate drain pumps and all necessary accessories. BluChem Treated prior to delivery to site Manufacturers - Daikin, LG, Midea, Mitsubishi, Samsung or similar approved.					
	Lost Baggage 01					
1B.001	2.9kW Inverter type Mid-Wall Split Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	2			
1B.002	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	26			
1B.003	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	2			
	Lost Baggage 02					
1B.004	3.6kW Inverter type Mid-Wall Split Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.005	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	13			
1B.006	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Vodacom					
1B.007	5.35kW Inverter type Cassette Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.008	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15			
1B.009	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	MTN					
1B.010	3.6kW Inverter type Cassette Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.011	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	12			
1B.012	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	IMALI					
1B.013	3.6kW Inverter type Cassette Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.014	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	7			
1B.015	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	UPS Room					
1B.016	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.017	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.018	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Workshop					
1B.013	10.5kW Inverter type Cassette Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	2			
1B.014	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	32			
1B.015	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	2			
Carried Forward:						

Brought Forward:						
	Rest Room					
1B.016	5.35kW Inverter type Cassette Air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.017	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15			
1B.018	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	SAA Airline Office					
1B.019	7.10kW Inverter type Cassette Air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.020	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15			
1B.021	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Cosmic Candy					
1B.022	10.6kW Inverter type Concealed Hideaway air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.023	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15			
1B.024	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
1B.025	Supply Air Diffuser - 600 x 600/250 ϕ Spigot	No	4			
1B.025	Return Air Grille - 600 x 600/350 ϕ Spigot	No	4			
1B.026	0.6mm Low Pressure, Rectangular Galvanised Steel Ducting - including all transformation pieces, brackets & supports - as per SANS 1238	m ²	12			
Carried Forward:						

Brought Forward:					
1B.027	0.4mm Low Pressure, Spiral Galvanised Steel Ducting - including all transformation pieces, brackets & supports - as per SANS 1238	m ²	12		
1B.028	200mm - 300mm wire reinforced aluminium flexible ducting - C/W clamps, duct sealant and fixings - 1500mm long	No	5		
1B.029	200mm - 300mm diameter balancing damper	No	1		
Staff Security					
1B.030	10.5kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.031	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15		
1B.032	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
Fire Arm					
1B.033	3.6kW Inverter type Mid-Wall Split Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.034	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5		
1B.035	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
Coupon Office					
1B.036	3.6kW Inverter type Mid-Wall Split Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.037	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10		
1B.038	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
Carried Forward:					

Brought Forward:					
	SAA Ticket Sales				
1B.039	2.9kW Inverter type Mid-Wall Split Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	2		
1B.040	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	30		
1B.041	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	2		
	IT Room				
1B.030	7.1kW Inverter type Cassette Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.031	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	6		
1B.032	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
	Additional Retail				
1B.033	7.1kW Inverter type Cassette Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.034	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	6		
1B.035	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
Carried Forward:					

Brought Forward:						
	IT Room 02					
1B.039	6.7kW Inverter type Mid-Wall Split Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.040	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	6			
1B.041	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Additional Retail 02					
1B.042	7.1kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.043	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	8			
1B.044	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	ATM Office					
1B.045	3.6kW Inverter type Mid-Wall Split Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.046	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	8			
1B.047	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:				
	Internet Café			
1B.048	10.5kW Inverter type Cassette Air conditioning unit $C_{f/w}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1	
1B.049	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	9	
1B.050	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1	
	VIP Lounge			
1B.051	14.1kW Inverter type Concealed Hideaway air conditioning unit $C_{f/w}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1	
1B.052	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15	
1B.053	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1	
1B.054	Supply Air Diffuser - 600 x 600/250 ϕ Spigot	No	6	
1B.055	Return Air Grille - 1200 x 600/350 ϕ Spigot	No	1	
1B.056	0.6mm Low Pressure, Rectangular Galvanised Steel Ducting - including all transformation pieces, brackets & supports - as per SANS 1238			
	0.4mm Low Pressure, Spiral Galvanised Steel Ducting - including all transformation pieces, brackets & supports - as per SANS 1238			
	950x350	m	6	
	700x450	m	2	
	300x350	m	11	
	180x350	m	3	
	ϕ 250	m	3	
1B.058	200mm - 300mm wire reinforced aluminium flexible ducting - $C_{f/w}$ clamps, duct sealant and fixings - 1500mm long	No	6	
Carried Forward:				

Brought Forward:				
	Coffee Shop			
1B.060	10.6kW Inverter type Concealed Hideaway air conditioning unit ^{C/W} Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1	
1B.061	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15	
1B.062	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1	
1B.063	Supply Air Diffuser - 600 x 600/200 ϕ Spigot	No	4	
1B.064	Return Air Grille - 1200 x 600/350 ϕ Spigot	No	1	
1B.065	0.6mm Low Pressure, Rectangular Galvanised Steel Ducting - including all transformation pieces, brackets & supports - as per SANS 1238			
	0.4mm Low Pressure, Spiral Galvanised Steel Ducting - including all transformation pieces, brackets & supports - as per SANS 1238			
	650x300	m	1	
	300x250	m	1	
	180x250	m	3	
	ϕ 200	m	1	
	ϕ 300	m	1	
1B.067	200mm - 300mm wire reinforced aluminium flexible ducting - ^{C/W} clamps, duct sealant and fixings - 1500mm long	Each	3	
	1 Time Ticket Sales			
1B.069	2.9kW Inverter type Mid-Wall Split Air conditioning unit ^{C/W} Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1	
1B.070	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15	
1B.071	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1	
Carried Forward:				

Brought Forward:					
	Office				
1B.072	2.9kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.073	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	13		
1B.074	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
	Search Room				
1B.075	2.9kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.076	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15		
1B.077	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
	Security Office				
1B.078	2.9kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.079	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	13		
1B.080	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
	Medical Room				
1B.081	3.6kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.082	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	13		
1B.083	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
Carried Forward:					

Brought Forward:					
	Premier Lounge				
1B.084	10.5kW Inverter type Cassette Air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	3		
1B.085	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	36		
1B.086	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	3		
	Business Class Lounge				
1B.087	10.5kW Inverter type Cassette Air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	3		
1B.088	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	36		
1B.089	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	3		
	FIRST FLOOR				
	Weather Office				
1B.087	10.5kW Inverter type Cassette Air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	2		
1B.088	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	12		
1B.089	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	2		
Carried Forward:					

Brought Forward:						
	E.W.O.S.					
1B.090	4.8kW Inverter type Mid-Wall Split Air conditioning unit ^{C/W} Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.091	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.092	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
1B.093	4.8kW Inverter type Mid-Wall Split Air conditioning unit ^{C/W} Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.094	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.095	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Electronic Workshop					
1B.096	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^{C/W} Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.097	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.098	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	O.I.C.					
1B.096	4.8kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.097	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.098	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	New Office					
1B.099	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	2			
1B.100	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.101	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	2			
	Admin Office					
1B.102	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.103	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.104	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	Existing Rest Room					
1B.105	4.8kW Inverter type Mid-Wall Split Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.106	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.107	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Office					
1B.108	7.1kW Inverter type Cassette Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	2			
1B.109	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	12			
1B.110	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	2			
	New Manager's Office					
1B.108	10.5kW Inverter type Cassette Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.109	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.110	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	Boardroom					
1B.111	10.5kW Inverter type Cassette Air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.112	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.113	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Conference Room					
1B.114	10.5kW Inverter type Cassette Air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.115	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.116	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	IT Office					
1B.117	6.7kW Inverter type Mid-Wall Split Air conditioning unit $C_{I/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.118	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	12			
1B.119	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	Telkom Office					
1B.120	3.6kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.121	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.122	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Office 01					
1B.123	4.8kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.124	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.125	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Office 02					
1B.126	3.6kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.127	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.128	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	Office 03					
1B.129	3.6kW Inverter type Mid-Wall Split Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.130	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.131	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Office 04					
1B.132	3.6kW Inverter type Mid-Wall Split Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.133	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.134	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	New Reception Foyer					
1B.135	5.35kW Inverter type Cassette Air conditioning unit $C_{/W}$ Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.136	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15			
1B.137	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	Office 05					
1B.138	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.139	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.140	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Office 06					
1B.141	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.142	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.143	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Office 07					
1B.144	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.145	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.146	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	SAA Rest Room					
1B.147	10.5kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.148	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	8			
1B.149	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Border Manager					
1B.150	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.151	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.152	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Airways Manager					
1B.150	4.8kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.151	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.152	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	Rest Room 02					
1B.150	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.151	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.152	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Records Room					
1B.153	10.5kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.154	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	8			
1B.155	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Finance Admin					
1B.156	10.5kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.157	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	10			
1B.158	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:						
	Office 08					
1B.159	3.6kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.160	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	5			
1B.161	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Departure Control					
1B.162	10.5kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.163	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15			
1B.164	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	East End Boardroom					
1B.165	16.1kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.166	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	8			
1B.167	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:					
	Area Sales Manager				
1B.168	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.169	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15		
1B.170	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
	Sales Support				
1B.171	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.172	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	8		
1B.173	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
	SAA Office				
1B.174	10.5kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.175	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	16		
1B.176	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
Carried Forward:					

Brought Forward:						
	Manager's Suite 01					
1B.177	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.178	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	16			
1B.179	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Manager's Suite 02					
1B.177	6.7kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.178	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	17			
1B.179	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Store Room					
1B.177	3.6kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.178	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	8			
1B.179	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:					
	H.R. Waiting				
1B.180	4.8kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.181	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	15		
1B.182	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
	Secretary				
1B.183	4.8kW Inverter type Mid-Wall Split Air conditioning unit ^C / _W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.184	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	11		
1B.185	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
	Reception				
1B.186	5.35kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1		
1B.187	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	11		
1B.188	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
Carried Forward:					

Brought Forward:						
	Meeting Room					
1B.189	13.4kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.190	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	16			
1B.191	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
	Human Resources					
1B.189	10.5kW Inverter type Cassette Air conditioning unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries	No	1			
1B.190	Additional refrigeration piping between Indoor and Outdoor units - inclusive of pipe ancillaries, wire mesh trays, pipe supports and installation accessories.	m	16			
1B.191	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:					
	<p>Replace Redundant Chilled Water Air Handling Units (AHU's). Supplied and installed to manufacturer's specification and recommendation. Air Handling Units to be installed complete with hard wired Remote Controller, all necessary supports, anti-vibration isolators, brackets, ancillaries and condensate drains.</p>				
1B.192	AHU 01 - Cooling Capacity 154kW : Airflow 6914l/s	No	1		
1B.193	Supply Air Diffuser - 600 x 600/250ø Spigot	No	8		
1B.194	Return Air Grille - 1200 x 600/350ø Spigot	No	1		
1B.195	Class 4, Low Pressure, Rectangular Galvanised Steel Ducting with 25mm Internal Sonic Liner insulation - including all transformation pieces, slip on flanges, brackets & supports - as per SANS 1238	m ²	20		
1B.196	0.4mm Low Pressure, Spiral Galvanised Steel Ducting with 25mm External FRK insulation - including all transformation pieces, brackets & supports - as per SANS 1238	m ²	20		
1B.197	150mm - 350mm wire reinforced aluminium flexible ducting - C/W clamps, duct sealant and fixings - 1500mm long	No	38		
1B.198	150mm - 350mm diameter balancing damper	No	38		
1B.199	1150 x 1000 Fresh Air Inlet Louvre	No	1		
1B.200	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1		
Carried Forward:					

Brought Forward:						
1B.201	AHU 02 - Cooling Capacity 87kW : Airflow 3340l/s	No	1			
1B.202	Supply Air Diffuser - 600 x 600/250 ϕ Spigot	No	8			
1B.203	Return Air Grille - 500 x 500/350 ϕ Spigot	No	2			
1B.204	Class 4, Low Pressure, Rectangular Galvanised Steel Ducting with 25mm Internal Sonic Liner insulation - including all transformation pieces, slip on flanges, brackets & supports - as per SANS 1238	m ²	20			
1B.205	0.4mm Low Pressure, Spiral Galvanised Steel Ducting with 25mm External FRK insulation - including all transformation pieces, brackets & supports - as per SANS 1238	m ²	20			
1B.206	150mm - 350mm wire reinforced aluminium flexible ducting - C/W clamps, duct sealant and fixings - 1500mm long	No	36			
1B.207	150mm - 350mm diameter balancing damper	No	36			
1B.208	800 x 700 Fresh Air Inlet Louvre	No	1			
1B.209	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
Carried Forward:						

				Brought Forward:		
1B.210	AHU 03 - Cooling Capacity 131kW : Airflow 4477l/s	No	1			
1B.211	Supply Air Diffuser - 600 x 600/250 ϕ Spigot	No	9			
1B.212	Return Air Grille - 500 x 500/350 ϕ Spigot	No	2			
1B.213	Class 4, Low Pressure, Rectangular Galvanised Steel Ducting with 25mm Internal Sonic Liner insulation - including all transformation pieces, slip on flanges, brackets & supports - as per SANS 1238	m ²	20			
1B.214	0.4mm Low Pressure, Spiral Galvanised Steel Ducting with 25mm External FRK insulation - including all transformation pieces, brackets & supports - as per SANS 1238	m ²	20			
1B.215	150mm - 350mm wire reinforced aluminium flexible ducting - C _w clamps, duct sealant and fixings - 1500mm long	No	37			
1B.216	150mm - 350mm diameter balancing damper	No	37			
1B.217	1000 x 900 Fresh Air Inlet Louvre	No	1			
1B.218	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
1B.219	AHU 04 - Cooling Capacity 95kW : Airflow 2945l/s	No	1			
1B.220	Supply Air Diffuser - 600 x 600/250 ϕ Spigot	No	5			
1B.221	Return Air Grille - 500 x 500/350 ϕ Spigot	No	1			
1B.222	Class 4, Low Pressure, Rectangular Galvanised Steel Ducting with 25mm Internal Sonic Liner insulation - including all transformation pieces, slip on flanges, brackets & supports - as per SANS 1238	m ²	20			
1B.223	0.4mm Low Pressure, Spiral Galvanised Steel Ducting with 25mm External FRK insulation - including all transformation pieces, brackets & supports - as per SANS 1238	m ²	20			
				Carried Forward:		

Brought Forward:						
	AHU 04 - Continued					
1B.224	150mm - 350mm wire reinforced aluminium flexible ducting - C _w /W clamps, duct sealant and fixings - 1500mm long	No	19			
1B.225	150mm - 350mm diameter balancing damper	No	19			
1B.226	800 x 700 Fresh Air Inlet Louvre	No	1			
1B.227	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
1B.228	AHU 05 - Cooling Capacity 104kW : Airflow 4160l/s	No	1			
1B.229	Supply Air Diffuser - 600 x 600/250ø Spigot	No	6			
1B.230	Return Air Grille - 500 x 500/350ø Spigot	No	2			
1B.231	Class 4, Low Pressure, Rectangular Galvanised Steel Ducting with 25mm Internal Sonic Liner insulation - including all transformation pieces, slip on flanges, brackets & supports - as per SANS 1238	m ²	20			
1B.232	0.4mm Low Pressure, Spiral Galvanised Steel Ducting with 25mm External FRK insulation - including all transformation pieces, brackets & supports - as per SANS 1238	m ²	20			
1B.233	150mm - 350mm wire reinforced aluminium flexible ducting - C _w /W clamps, duct sealant and fixings - 1500mm long	No	26			
1B.234	150mm - 350mm diameter balancing damper	No	26			
1B.235	800 x 800 Fresh Air Inlet Louvre	No	1			
1B.236	Installation & Commissioning (incl all brackets, supports etc.) for each system	No	1			
1B.237	Chilled Water Plant Supplied and installed to manufacturer's specification and recommendation.					
	AquaSnap Air-Cooled Liquid Chiller 30RBP 270R, 268kW - With Greenspeed Intelligence and R32 Refrigerant or equal and approved. Condensing Coils and Steel Frame to be Blue-Chem Treated prior to delivery to site. SS screws, nuts and bolts to be used throughout the Chiller assembly	No	2			
1B.238	Chilled water system optimiser - Intelligent controller	No	2			
1B.239	Allowance for Flexible pipe connectors / vibration eliminators, Isolation valves at chiller flow & return - Butterfly or ball valves, Non-return (check) valves, Y-strainers, Automatic air vents (high points near chiller) Drain valves at low points - Paid on proven cost by prior approval	Item	1	#####		R 200 000,00
1B.240	Allowance for Pressure gauges (flow & return), Thermometers / temperature gauges- digital or combined P/T ports, Pressure switches / flow switches - Paid on proven cost by prior approval	Item	1	R 60 000,00		R 60 000,00

1B.241	Allowance for All pipe insulation disturbed during works; Insulation at chiller nozzles Replace with: Closed-cell insulation/rockwool,UV-protected jacketing for outdoor piping, S cladding. Replace vapour barriers fully (no patching) - Paid on proven cost by prior approval	Item	1	R 80 000,00	R	80 000,00
1B.242	Allowance for System flushing & chemical cleaning. New water treatment chemicals - Paid on proven cost by prior approval	Item	1	R 50 000,00	R	50 000,00
1B.243	Allowance for Air Condensor duct cowls over existing ductwork - Paid on proven cost by prior approval	Item	1	R 50 000,00	R	50 000,00
1B.244	Installation, Testing & Commissioning (incl all brackets, supports etc.) for each chiller system and AHUs	No	7			
Carried Forward to Bill 1.2 Collection:						

Bill 1 Terminal Building						
No.	Description	Unit	Qty	Rate	Install	Total
1C	EXTRACTION SYSTEMS					
	Supply, deliver to site and install the following equipment and services.					
	Ground Floor					
	Female 02					
1C.001	Fan - Inline Tube fan : 449l/s @ 200Pa ESP : C/W AVM's and supports	No	1			
1C.002	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	No	2			
1C.003	Diffusers - 200 \emptyset Epoxy Coated Disc Valve	No	4			
1C.004	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238					
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239					
	500x500	m	1			
	350x250	m	2			
	100x250	m	1			
	\emptyset 200	m	3			
1C.006	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, C/W , clamps, duct sealant and fixings	No	4			
1C.008	Weather Louvre - 500 x 500 : Epoxy Powder Coated	No	1			
1C.009	Installation and commissioning : including all brackets, supports, etc.	No	1			
Carried Forward:						

Brought Forward:					
1C.010	Male 02 Fan - Inline Tube fan : 466l/s @ 200Pa ESP : ^C / _W AVM's and supports	No	1		
1C.011	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : ^C / _W Flexible Collars	No	2		
1C.012	Diffusers - 200ø Epoxy Coated Disc Valve	No	5		
1C.013	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	500x500	m	1		
	300x300	m	2		
	200x250	m	2		
	100x250	m	2		
	ø200	m	4		
1C.015	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, ^C / _W , clamps, duct sealant and fixings	No	5		
1C.017	Weather Louvre - 500 x 500 : Epoxy Powder Coated	No	1		
1C.018	Installation and commissioning : including all brackets, supports, etc.	No	1		
1C.019	Female 01 Fan - Inline Tube fan : 473l/s @ 200Pa ESP : ^C / _W AVM's and supports	No	1		
1C.020	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : ^C / _W Flexible Collars	No	2		
1C.021	Diffusers - 200ø Epoxy Coated Disc Valve	No	6		
Carried Forward:					

Brought Forward:						
1C.022	<p>Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238</p> <p>Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239</p> <p>500x500</p> <p>300x300</p> <p>160x250</p> <p>90x200</p> <p>∅200</p>	m	1			
1C.024	<p>Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, C_{f/w}, clamps, duct sealant and fixings</p>	No	6			
1C.026	Weather Louvre - 500 x 500 : Epoxy Powder Coated	No	1			
1C.027	Installation and commissioning : including all brackets, supports, etc.	No	1			
1C.028	<p>Toilet 02</p> <p>Fan - Wall mounted fan C_{f/w} EPC weather louvre : 50l/s @ 50Pa ESP : AVM mounting</p>	No	1			
1C.029	Installation and commissioning : including all brackets, supports, etc.	No	1			
1C.030	<p>Kitchen 02</p> <p>Fan - Wall mounted fan C_{f/w} EPC weather louvre : 50l/s @ 50Pa ESP : AVM mounting</p>	No	1			
1C.031	Installation and commissioning : including all brackets, supports, etc.	No	1			
1C.032	<p>ATM's</p> <p>Fan - Inline Tube fan : 30l/s @ 200Pa ESP : C_{f/w} AVM's and supports</p>	No	1			
1C.033	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C _{f/w} Flexible Collars	No	2			
Carried Forward:						

Brought Forward:					
1C.034	ATM's (continued) Diffusers - 200ø Epoxy Coated Disc Valve	No	1		
1C.035	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	300x200	m	1		
	100x250	m	3		
	ø200	m	1		
1C.037	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, $C_{f/w}$, clamps, duct sealant and fixings	No	1		
1C.039	Weather Louvre - 300 x 200 : Epoxy Powder Coated	No	1		
1C.040	Installation and commissioning : including all brackets, supports, etc.	No	1		
1C.041	Male 03 Fan - Inline Tube fan : 220l/s @ 200Pa ESP : $C_{f/w}$ AVM's and supports	No	1		
1C.042	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : $C_{f/w}$ Flexible Collars	No	2		
1C.043	Diffusers - 200ø Epoxy Coated Disc Valve	No	4		
1C.044	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	500x500	m	1		
	210x250	m	1		
	150x250	m	2		
	90x250	m	2		
	ø200	m	1		
1C.046	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, $C_{f/w}$, clamps, duct sealant and fixings	No	4		
Carried Forward:					

				Brought Forward:		
1C.048	Weather Louvre - 500 x 500 : Epoxy Powder Coated	No	1			
1C.049	Installation and commissioning : including all brackets, supports, etc.	No	1			
Male 04						
1C.050	Fan -Axial Flow Fan : 555l/s @ 200Pa ESP : C/W AVM's and supports	No	1			
1C.051	Sound Attenuator - POD Type to suit Inline Tube fan : Length 1500mm : C/W Flexible Collars	No	2			
1C.052	Diffusers - 200 \emptyset Epoxy Coated Disc Valve	No	10			
1C.053	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238					
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239					
	600x500	m	1			
	300x250	m	6			
	210x250	m	5			
	150x250	m	2			
	\emptyset 200	m	5			
1C.055	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, C/W , clamps, duct sealant and fixings	No	10			
1C.057	Weather Louvre - 600 x 500 : Epoxy Powder Coated	No	1			
1C.058	Installation and commissioning : including all brackets, supports, etc.	No	1			
				Carried Forward:		

		Brought Forward:			
1C.059	Male 05 Fan - Axial Flow Fan : 540l/s @ 200Pa ESP : C/W AVM's and supports	No	1		
1C.060	Sound Attenuator - POD Type to suit Inline Tube fan : Length 1500mm : C/W Flexible Collars	No	2		
1C.061	Diffusers - 200 \emptyset Epoxy Coated Disc Valve	No	8		
1C.062	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	600x500	m	1		
	360x300	m	4		
	220x250	m	3		
	90x250	m	2		
	\emptyset 200	m	11		
1C.064	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, C/W , clamps, duct sealant and fixings	No	8		
1C.066	Weather Louvre - 600 x 500 : Epoxy Powder Coated	No	1		
1C.067	Installation and commissioning : including all brackets, supports, etc.	No	1		
1C.068	Male 06 Fan - Inline Tube fan : 315l/s @ 200Pa ESP : C/W AVM's and supports	No	1		
1C.069	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	No	2		
1C.070	Diffusers - 200 \emptyset Epoxy Coated Disc Valve	No	6		
1C.071	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
		Carried Forward:			

Brought Forward:					
	Male 06 (continued)				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	500x500	m	1		
	290x250	m	9		
	170x250	m	3		
	100x250	m	4		
	∅200	m	3		
1C.073	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, ^C / _W , clamps, duct sealant and fixings	No	6		
1C.075	Weather Louvre - 600 x 500 : Epoxy Powder Coated	No	1		
1C.076	Installation and commissioning : including all brackets, supports, etc.	No	1		
	FIRST FLOOR				
	Ladies				
1C.077	Fan - Inline Tube fan : 270l/s @ 200Pa ESP : ^C / _W AVM's and supports	No	1		
1C.078	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : ^C / _W Flexible Collars	No	2		
1C.079	Diffusers - 200∅ Epoxy Coated Disc Valve	No	4		
1C.080	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	500x500	m	1		
	200x250	m	4		
	∅200	m	4		
1C.082	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, ^C / _W , clamps, duct sealant and fixings	No	4		
Carried Forward:					

				Brought Forward:		
1C.084	Weather Louvre - 500 x 500 : Epoxy Powder Coated	No	1			
1C.085	Installation and commissioning : including all brackets, supports, etc.	No	1			
Store Room						
1C.086	Fan - Inline Tube fan : 20l/s @ 200Pa ESP : C/W AVM's and supports	No	1			
1C.087	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	No	2			
1C.088	Diffusers - 200Ø Epoxy Coated Disc Valve	No	1			
1C.089	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238					
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239					
	Ø200	m	3			
1C.091	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, C/W , clamps, duct sealant and fixings	No	1			
1C.093	Weather Louvre - 300 x 200 : Epoxy Powder Coated	No	1			
1C.094	Installation and commissioning : including all brackets, supports, etc.	No	1			
Gents' Cloak Room						
1C.095	Fan - Axial Flow Fan : 715l/s @ 200Pa ESP : C/W AVM's and supports	No	1			
1C.096	Sound Attenuator - POD Type to suit Inline Tube fan : Length 1500mm : C/W Flexible Collars	No	2			
				Carried Forward:		

Brought Forward:					
1C.097	Gents' Cloak Room (continued) Diffusers - 200ø Epoxy Coated Disc Valve	No	10		
1C.098	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	Ø500	m	7		
	Ø300	m	5		
	Ø200	m	8		
1C.100	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, $C_{f/w}$, clamps, duct sealant and fixings	No	10		
1C.102	Weather Louvre - 600 x 500 : Epoxy Powder Coated	No	1		
1C.103	Installation and commissioning : including all brackets, supports, etc.	No	1		
1C.104	Male Toilet Fan - Inline Tube fan : 280l/s @ 200Pa ESP : $C_{f/w}$ AVM's and supports	No	1		
1C.105	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : $C_{f/w}$ Flexible Collars	No	2		
1C.106	Diffusers - 200ø Epoxy Coated Disc Valve	No	4		
1C.107	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	500x500	m	1		
	Ø355	m	5		
	Ø200	m	1		
1C.109	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm - 350mm diameter and 1500mm long, $C_{f/w}$, clamps, duct sealant and fixings	No	4		
Carried Forward:					

Brought Forward:						
1C.111	Male Toilet (continued) Weather Louvre - 500 x 500 : Epoxy Powder Coated	No	1			
1C.112	Installation and commissioning : including all brackets, supports, etc.	No	1			
SERVICE AND REINSTALL the following items						
1C.113	UPS Room - 500ø Axial Flow Fan	No	1			
1C.114	Transformer Room - 500ø Axial Flow Fan	No	1			
Carried Forward to Bill 1.3 Collection:						

Bill 1		Terminal Building				
No.	Description	Unit	Qty	Rate	Install	Total
1D	VENTILATION SYSTEMS					
	Supply, deliver and install the following equipment and services.					
	Ground Floor					
	Retail Shops (3 adjacent)					
1D.001	Fan SF01.1 - Inline Tube fan : 86l/s @ 200Pa ESP : C/W AVM's and supports	Each	1			
1D.002	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2			
1D.003	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238					
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239					
	150x150	m	7			
	100x150	m	3			
	∅100	m	1			
1D.004	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100mm diameter and 1500mm long, C/W , clamps, duct sealant and fixings fixed to cassette units.	Each	3			
1D.005	Balancing Dampers - 100∅	Each	3			
1D.006	Weather Louvre - 300 x 200 : Epoxy Powder Coated	Each	1			
1D.007	Air Filter - 300 x 200 mm	Each	1			
1D.008	Installation and commission : including all brackets, supports, etc.	Each	1			
Carried Forward:						

Brought Forward:					
ATNS Workshop and Rest Room					
1D.009	Fan SF02 - Inline Tube fan : 214l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.010	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
1D.011	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 100mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	150x250	m	1		
	150x200	m	7		
	100x250	m	8		
	Ø100	m	3		
	Ø200	m	1		
	Ø355	m	3		
1D.012	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100mm diameter and 1500mm long, C/W , clamps, duct sealant and fixings fixed to cassette units.	Each	3		
1D.013	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200mm diameter and 1500mm long, C/W , clamps, duct sealant and fixings fixed to cassette units.	Each	1		
1D.014	Diffusers - 200Ø Epoxy Coated Disc Valve	Each	1		
1D.015	Balancing Dampers - 100Ø	Each	3		
1D.016	Weather Louvre - 400 x 300 : Epoxy Powder Coated	Each	1		
1D.017	Air Filter - 400 x 300 mm	Each	1		
1D.018	Installation and commission : including all brackets, supports, etc.	Each	1		
Cosmic Candy and SAA Airline Office					
1D.019	Fan SF03 - Inline Tube fan : 200l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.020	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
Carried Forward:					

Brought Forward:					
Cosmic Candy and SAA Airline Office (continued)					
1D.021	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	Ø100	m	4		
	Ø250	m	7		
1D.022	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100Ø diameter and 1500mm long, ^C / _W , clamps, duct sealant and fixings - fixed to A/C units.	Each	1		
1D.023	Flexible Ducting - Wire reinforced aluminium flexible ducting : 250Ø diameter and 1500mm long, ^C / _W , clamps, duct sealant and fixings - fixed to A/C units.	Each	1		
1D.024	Balancing Dampers - 100Ø	Each	1		
1D.025	Balancing Dampers - 250Ø	Each	1		
1D.026	Weather Louvre - 400 x 300 : Epoxy Powder Coated	Each	1		
1D.027	Air Filter - 400 x 300 mm	Each	1		
1D.028	Installation and commission : including all brackets, supports, etc.	Each	1		
MTN and IT Room					
1D.029	Fan SF06 - Inline Tube fan : 90l/s @ 200Pa ESP : ^C / _W AVM's and supports	Each	1		
1D.030	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : ^C / _W Flexible Collars	Each	2		
1D.031	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	100x200	m	1.5		
	100x150	m	8		
	Ø100	m	1		
1D.032	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100 Ø, ^C / _W , clamps, duct sealant and fixings fixed to A/C units.	Each	2		
1D.033	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200 Ø, ^C / _W , clamps, duct sealant and fixings fixed to A/C units.	Each	1		
Carried Forward:					

Brought Forward:					
MTN and IT Room (continued)					
1D.034	Diffusers - 200ø Epoxy Coated Disc Valve	Each	1		
1D.035	Balancing Dampers - 200ø	Each	3		
1D.036	Weather Louvre - 300 x 200 : Epoxy Powder Coated	Each	1		
1D.037	Air Filter - 300 x 200 mm	Each	1		
1D.038	Installation and commission : including all brackets, supports, etc.	Each	1		
Vodacom, Internet Cafe and Sports Shop					
1D.039	Fan SF07 - Inline Tube fan : 130l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.040	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
1D.041	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 100mm - 355mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	Ø100	m			
	Ø150	m			
	Ø200	m			
	Ø355	m			
1D.042	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100 ø, C/W , clamps, duct sealant and fixings fixed to A/C units.	Each	2		
1D.043	Flexible Ducting - Wire reinforced aluminium flexible ducting : 150 ø, C/W , clamps, duct sealant and fixings fixed to Disc Valve/Diffuser.	Each	1		
1D.044	Diffusers - 200ø Epoxy Coated Disc Valve	Each	1		
Carried Forward:					

Brought Forward:					
1D.045	Vodacom, Internet Cafe and Sports Shop (continued) Balancing Dampers - 200ø	Each	3		
1D.046	Weather Louvre - 400 x 300 : Epoxy Powder Coated	Each	1		
1D.047	Air Filter - 400 x 300 mm	Each	1		
1D.048	Installation and commission : including all brackets, supports, etc.	Each	1		
VIP Lounge					
1D.049	Fan SF08 - Inline Tube fan : 150l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.050	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
1D.051	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	150x200	m	10		
1D.052	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200 ø, C/W , clamps, duct sealant and fixings fixed to A/C units.	Each	1		
1D.053	Balancing Dampers - 150ø	Each	1		
1D.054	Weather Louvre - 400 x 300 : Epoxy Powder Coated	Each	1		
1D.055	Air Filter - 400 x 300 mm	Each	1		
1D.056	Installation and commission : including all brackets, supports, etc.	Each	1		
Carried Forward:					

Brought Forward:					
	Premier Lounge				
1D.057	Fan SF09 - Inline Tube fan : 190l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.058	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
1D.059	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 100mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	100x200	m	6		
	150x200	m	2		
	200x200	m	2		
	Ø100	m	3		
	Ø350	m	6		
1D.060	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100 Ø, C/W , clamps, duct sealant and fixings fixed to A/C units.	Each	3		
1D.061	Balancing Dampers - 100Ø	Each	3		
1D.062	Weather Cowl (including Wire Mesh Screen) - 355Ø : Epoxy Powder Coated	Each	1		
1D.063	Air Filter - 355Ø	Each	1		
1D.064	Installation and commission : including all brackets, supports, etc.	Each	1		
Carried Forward:					

Brought Forward:					
Medical, Security and Search Rooms					
1D.065	Fan SF10 - Inline Tube fan : 115l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.066	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
1D.067	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 150mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	140x150	m	6		
	Ø150	m	1		
1D.068	Diffusers - 600 x 600 Epoxy Coated 4 Way diffusers C/W 300 high plenum and 150Ø spigot	Each	3		
1D.069	Flexible Ducting - Wire reinforced aluminium flexible ducting : 150 Ø, C/W , clamps, duct sealant and fixings fixed to Diffusers.	Each	3		
1D.070	Weather Louvre - 300 x 200 : Epoxy Powder Coated	Each	1		
1D.071	Air Filter - 300 x 200 mm	Each	1		
1D.072	Installation and commission : including all brackets, supports, etc.	Each	1		
Coffee Shop, 1 Time Ticket Sales and 3RD Ticket Sales					
1D.073	Fan SF11 - Inline Tube fan : 155l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.074	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
Carried Forward:					

				Brought Forward:		
Coffee Shop, 1 Time Ticket Sales and 3RD Ticket Sales (continued)						
1D.075	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238					
	Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239					
	150x200	m	21			
	Ø200	m	5			
1D.076	Diffusers - 200Ø Epoxy Coated Disc Valve	Each	2			
1D.077	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200 Ø, C/W, clamps, duct sealant and fixings fixed to A/C units.	Each	1			
1D.078	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200 Ø, C/W, clamps, duct sealant and fixings fixed to Disc Valves.	Each	2			
1D.079	Balancing Dampers - 200Ø	Each	3			
1D.080	Weather Louvre - 300 x 200 : Epoxy Powder Coated	Each	1			
1D.081	Air Filter - 300 x 200 mm	Each	1			
1D.082	Installation and commission : including all brackets, supports, etc.	Each	1			
Staff Security and Firearms Locker						
1D.083	Fan SF01.2 - Inline Tube fan : 85l/s @ 200Pa ESP : C/W AVM's and supports	Each	1			
1D.084	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2			
1D.085	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238					
	Ducting - Low Pressure Spiral galvanised steel ducting : 100mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239					
				Carried Forward:		

Brought Forward:					
	Staff Security and Firearms Locker (continued)				
	Ø150	m	6		
	Ø100	m	1		
1D.086	Diffusers - 150Ø Epoxy Coated Disc Valve	Each	3		
1D.087	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100 Ø, ^C / _W , clamps, duct sealant and fixings fixed to A/C units.	Each	1		
1D.088	Flexible Ducting - Wire reinforced aluminium flexible ducting : 150 Ø, ^C / _W , clamps, duct sealant and fixings fixed to Disc Valves.	Each	3		
1D.089	Balancing Dampers - 100Ø	Each	4		
1D.090	Weather Louvre - 300 x 200 : Epoxy Powder Coated	Each	1		
1D.091	Air Filter - 300 x 200 mm	Each	1		
1D.092	Installation and commission : including all brackets, supports, etc.	Each	1		
	SAA Ticket Sales and Coupon Office				
1D.093	Fan SF05 - Inline Tube fan : 80l/s @ 200Pa ESP : ^C / _W AVM's and supports	Each	1		
1D.094	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : ^C / _W Flexible Collars	Each	2		
1D.095	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	100x250	m	14		
	Ø200	m	4		
1D.096	Diffusers - 200Ø Epoxy Coated Disc Valve	Each	3		
1D.097	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200 Ø, ^C / _W , clamps, duct sealant and fixings fixed to Disc Valves.	Each	3		
Carried Forward:					

Brought Forward:					
	SAA Ticket Sales and Coupon Office (continued)				
1D.098	Weather Louvre - 300 x 200 : Epoxy Powder Coated	Each	1		
1D.099	Air Filter - 300 x 200 mm	Each	1		
1D.100	Installation and commission : including all brackets, supports, etc.	Each	1		
	FIRST FLOOR				
	Airport Manager, Boardroom and Conference Room				
1D.101	Fan SF12 - Inline Tube fan : 345l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.102	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
1D.103	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 100mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	425x250	m	4		
	350x350	m	3		
	150x250	m	7		
	Ø100	m	1		
1D.104	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100 ϕ , C/W , clamps, duct sealant and fixings fixed to A/C units.	Each	3		
1D.105	Balancing Dampers - 100 ϕ	Each	3		
1D.106	Weather Louvre - 500 x 500 : Epoxy Powder Coated	Each	1		
1D.107	Air Filter - 500 x 500 mm	Each	1		
1D.108	Installation and commission : including all brackets, supports, etc.	Each	1		
Carried Forward:					

		Brought Forward:			
	Reception, Admin and Telkom				
1D.109	Fan SF13 - Inline Tube fan : 95l/s @ 200Pa ESP : C/W AVM's and supports	Each	1		
1D.110	Sound Attenuator - POD Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	Each	2		
1D.111	Ducting - Class 1 Rectangular Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238				
	Ducting - Low Pressure Spiral galvanised steel ducting : 100mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239				
	Ø200	m	14		
	Ø100	m	1		
1D.112	Diffusers - 200Ø Epoxy Coated Disc Valve	Each	2		
1D.113	Flexible Ducting - Wire reinforced aluminium flexible ducting : 100 Ø, C/W , clamps, duct sealant and fixings fixed to A/C units.	Each	1		
1D.114	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200 Ø, C/W , clamps, duct sealant and fixings fixed to Disc Valves.	Each	2		
1D.115	Balancing Dampers - 100Ø	Each	1		
1D.116	Weather Louvre - 300 x 200 : Epoxy Powder Coated	Each	1		
1D.117	Air Filter - 300 x 200 mm	Each	1		
1D.118	Installation and commission : including all brackets, supports, etc.	Each	1		
	SERVICE & REINSTALL the following items:				
	Viewing Deck				
1D.119	In Line Tube Fan - 315mm diameter	Each	1		
	Electronic Workshop				
1D.120	In Line Tube Fan - 315mm diameter	Each	1		
Carried Forward to Bill 1.4 Collection:					

Bill 1 Terminal Building						
No.	Description	Unit	Qty	Rate	Install	Total
1E	BUILDER'S WORK					
1E.001	Concrete Plinths for Air Handling Unit-1 3900mm x 2830mm x 150mm	No	1			
1E.002	Concrete Plinths for Air Handling Unit-2 3900mm x 2220mm x 150mm	No	1			
1E.003	Concrete Plinths for Air Handling Unit-3 2595mm x 2005mm x 150mm	No	1			
1E.004	Concrete Plinths for Air Handling Unit-4 3748mm x 1912mm x 150mm	No	1			
1E.005	Concrete Plinths for Air Handling Unit-5 3748mm x 2218mm x 150mm	No	1			
1E.006	Concrete Plinths for Chillers 2710mm x 2555mm x 150mm	No	2			
1E.007	Concrete Plinths for Pumps 990mm x 355mm	No	2			
1E.008	Openings in brickwork for Louvers	No	20			
1E.009	Cold Drill 50mm - 100mm	No	35			
1E.010	Undercutting of Doors	No	44			
1E.012	Removal and reinstallation of ceilings	Item	1			

Carried Forward to Bill 1.5 Collection:	
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Bill 2 Fire Station						
No.	Description	Unit	Qty	Rate	Install	Total
2.1	PRELIMINARY & GENERAL					
	Note: All items shall be priced for whatever cost may be considered necessary for Preliminary and General to carry out the Mechanical Installations in full, as detailed in the drawings, Specifications and Schedules, which shall include, but shall not be limited, to the following:					
2.1.1	Site Establishment - over and above the Main Contractor's allowance.	Item	0			
2.1.2	Equipment and Systems operation instruction and training for Employer's staff prior to handover to the Client	Item	1			
2.1.3	Three (3) copies of O&M Manuals (Hard and Electronic copies)	Item	1			
2.1.4	"As Built" drawings (3 copies)	Item	1			
2.1.5	Provision of full Maintenance and Warranty for all installations and equipment for 12 (Twelve) months from the date of Practical Completion. Service records to be compiled and submitted for each service carried out. Refer to Tender Specification.	Item	1			
2.1.6	Allowance for Electrical Connections and CoCs - Paid on proven cost by prior approval	Item	1	R 70 000,00		R 70 000,00
2.1.7	Scaffolding	Item	1			
2.1.8	Cranage	Item	1			
2.1.9	Removal of existing and redundant HVAC systems.	Item	1			
2.1.10	Contingencies	PC Sum	1			
Carried Forward to Bill 2.1 Collection:						

Bill 2 Fire Station						
No.	Description	Unit	Qty	Rate	Install	Total
2.2	AIR CONDITIONING SYSTEMS Supply, Delivery and Installation of VRF Air Conditioning systems complete with indoor and outdoor units. Including trunking, piping between outdoor and indoor portions of unit, mounting brackets, condensate drain pumps and all necessary accessories. BluChem Treated prior to delivery to site Manufacturers - Daikin, LG, Midea, Mitsubishi, Samsung or similar approved.					
2.2.1	Indoor Units VRF Mid-Wall Air Conditioning Unit ^{C/W} Wireless Remote Controller and all necessary supports, brackets and ancillaries 3.6kW Heating/Cooling 4.5kW Heating/Cooling 5.6kW Heating/Cooling 7.1kW Heating/Cooling VRF Cassette Air Conditioning Unit ^{C/W} Wireless Remote Controller and all necessary supports, brackets and ancillaries. 8.0kW Heating/Cooling 11.2kW Heating/Cooling					
		Each	4			
		Each	3			
		Each	1			
		Each	3			
		Each	2			
		Each	2			
2.2.2	Accessories Wired Remote Controller 75T - Refnet branch joints piping kit 64T - Refnet branch joints piping kit 29T - Refnet branch joints piping kit 20T - Refnet branch joints piping kit					
		No	15			
		No	1			
		No	3			
		No	4			
		No	6			
2.2.3	Outdoor Units VRF Unit ^{C/W} All necessary electrical connections, electronic control interfaces and wiring, supports, brackets and ancillaries. BluChem Treated prior to delivery to site Outdoor unit - 32U [20U+12U], 96kW					
		No	1			
2.2.4	Install & Commission (inclusive of all brackets, supports and etc.) for each system	Each	1			
Carried Forward:						

Brought Forward:					
2.2.5	<p>Refrigeration Piping Suitably sized, 2 Pipe high pressure (410A quality) soft and hard drawn refrigeration piping. Insulated with pre-formed, high density, closed cell insulation as Armaflex or Equal and Approved. All insulation joints to be firmly finished with high quality contact adhesive and banded with impervious "Lasso" tape or equal approved. C/W all necessary Branch Pipe fittings, adaptors, isolators and accessories. Neatly run in approved cable trays and inclusive of all necessary supports, brackets and ancillaries.</p>				
	31,8 mm	m	10		
	25,4 mm	m	31		
	19,1 mm	m	62		
	15,9 mm	m	28		
	12,7 mm	m	93		
	9,52 mm	m	27		
	6,35 mm	m	9		
2.2.6	Supply and install Class O Armaflex closed cell, elastomeric, nitrile rubber, dust free, fibre free and CFC free with an ODP of zero insulation (please note the different refrigerant pipe sizes above)	m	260		
2.2.7	Condensate drain pipe, with support hangers and P-traps - Supply and install 25mm Ø uPVC pipe for each indoor and outdoor units complete with clamps, hangers, elbows, vents etc. Insulated.	m	130		
Carried Forward to Bill 2.2 Collection:					

Bill 2		Fire Station				
No.	Description	Unit	Qty	Rate	Install	Total
2.3	EXTRACTION SYSTEMS Supply, deliver to site and install the following equipment and services.					
2.3.1	Fan EF01 Wall mounted fan C/W EPC weather louvre : 120l/s @ 50Pa ESP : AVM mounting	No	3			
2.3.2	Fan EF02 Wall mounted fan C/W EPC weather louvre : 100l/s @ 50Pa ESP : AVM mounting	No	3			
2.3.3	Fan EF03 Wall mounted fan C/W EPC weather louvre : 140l/s @ 50Pa ESP : AVM mounting	No	4			
2.3.4	Installation and commisioning : including all brackets, supports, etc.	No	10			
Carried Forward to Bill 2.3 Collection:						

Bill 2		Fire Station				
No.	Description	Unit	Qty	Rate	Install	Total
2.4	BUILDER'S WORK					
2.4.1	Concrete Plinth - 1026mm x 2115mm x 150mm	No	1			
2.4.2	1800mm high and 7200mm perimetre Clear View Fencing with a lockable gate	No	1			
2.4.3	Openings in brickwork for fans and Louvers	No	12			
2.4.4	Cold Drill 50mm - 100mm	No	2			
2.4.5	Undercutting of Doors	No	12			
2.4.6	Removal and reinstallation of ceilings	Item	1			
Carried Forward to Bill 2.4 Collection:						

Bill 3 Control Centre						
No.	Description	Unit	Qty	Rate	Install	Total
3.1	PRELIMINARY & GENERAL Note: All items shall be priced for whatever cost may be considered necessary for Preliminary and General to carry out the Mechanical Installations in full, as detailed in the drawings, Specifications and Schedules, which shall include, but shall not be limited, to the following:					
3.1.2	Site Establishment - over and above the Main Contractor's allowance.	Item	0			
3.1.3	Equipment and Systems operation instruction and training for Employer's staff prior to handover to the Client	Item	1			
3.1.4	Three (3) copies of O&M Manuals (Hard and Electronic copies)	Item	1			
3.1.5	"As Built" drawings (3 copies)	Item	1			
3.1.6	Provision of full Maintenance and Warranty for all installations and equipment for 12 (Twelve) months from the date of Practical Completion. Service records to be compiled and submitted for each service carried out. Refer to Tender Specification.	Item	1			
3.1.7	Allowance for Electrical Connections and CoCs - Paid on proven cost by prior approval	Item	1	R 50 000,00		R 50 000,00
3.1.8	Scaffolding	Item	1			
3.1.9	Cranage	Item	1			
3.1.10	Removal of existing and redundant HVAC systems.	Item	1			
3.1.11	Contingencies	PC Sum	1			
Carried Forward to Bill 3.1 Collection:						

Bill 3 Control Centre						
No.	Description	Unit	Qty	Rate	Install	Total
3.2	AIR CONDITIONING SYSTEMS Supply, Delivery and Installation of VRF Air Conditioning systems complete with indoor and outdoor units. Including trunking, piping between outdoor and indoor portions of unit, mounting brackets, condensate drain pumps and all necessary accessories. BluChem Treated prior to delivery to site Manufacturers - Daikin, LG, Midea, Mitsubishi, Samsung or similar approved.					
3.2.1	Indoor Units					
	VRF Mid-Wall Air Conditioning Unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries					
	2.8kW Heating/Cooling	No	1			
	4.5kW Heating/Cooling	No	3			
	Split Mid-Wall Air Conditioning Unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries. BluChem treated prior to delivery to site					
	7.1kW Heating/Cooling	No	2			
	VRF Cassette Air Conditioning Unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries					
	14.0kW Heating/Cooling	No	2			
3.2.2	Accessories					
	Wired Remote Controller	No	6			
	64T - Refnet branch joints piping kit	No	2			
	29T - Refnet branch joints piping kit	No	1			
	20T - Refnet branch joints piping kit	No	1			
3.2.3	Outdoor Units					
	Inverter type Heat Pump Air Conditioning Condenser Unit and VRF C/W All necessary electrical connections, electronic control interfaces and wiring, supports, brackets and ancillaries					
	Outdoor unit - 14U , 40kW	No	1			
	7.1kW Heat Pump Condensing Units inclusive of BMS interface and connections	No	2			
3.2.4	Install & Commission (inclusive of all brackets, supports etc.) for each system	No	1			
Carried Forward:						

Brought Forward:				
3.2.5	<p>Refrigeration Piping Suitably sized, 2 and 3 Pipe high pressure (410A quality) soft and hard drawn refrigeration piping. Insulated with pre-formed, high density, closed cell insulation as Armaflex or Equal and Approved. All insulation joints to be firmly finished with high quality contact adhesive and banded with impervious "Lasso" tape or equal approved. C/W all necessary Branch Pipe fittings, adaptors, isolators and accessories. Neatly run in approved cable trays and inclusive of all necessary supports, brackets and ancillaries.</p>			
	28,6 mm	m	16	
	22,2 mm	m	18	
	19,1 mm	m	6	
	15,9 mm	m	7	
	12,7 mm	m	24	
	9,52 mm	m	30	
	6,35 mm	m	8	
3.2.6	Supply and install Class O Armaflex closed cell, elastomeric, nitrile rubber, dust free, fibre free and CFC free with an ODP of zero insulation (please note the different refrigerant pipe sizes above)	m	110	
3.2.7	Condensate drain pipe, with support hangers and P-traps -Supply and install 25mm Ø uPVC pipe for each indoor and outdoor units complete with clamps, hangers, elbows, vents etc. Insulated.	m	55	
Carried Forward to Bill 3.2 Collection:				

Bill 3 Control Centre						
No.	Description	Unit	Qty	Rate	Install	Total
3.3	BUILDER'S WORK					
3.3.1	Concrete Plinth - 1160mm x 965mm x 150mm	No	1			
3.3.2	1800mm High and 4400mm Perimetre Clear View Security Fencing With Spikes	No	1			
3.3.3	Clear View Post Mount Swing Lockable Gate 1800mm High and 1000mm Wide	No	1			
3.3.4	Cold Drill 50mm - 100mm	No	1			
3.3.5	Removal and reinstallation of ceilings	Item	1			
Carried Forward to Bill 3.3 Collection:						

Bill 3 Control Centre						
No.	Description	Unit	Qty	Rate	Install	Total
3.4	VENTILATION SYSTEMS Supply, deliver and install the following equipment and services.					
3.4.1	Fan SF01 - Inline Tube fan : 781l/s @ 200Pa ESP : C/W AVM's and supports	No	1			
3.4.2	Sound Attenuator - Open Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	No	2			
3.4.3	Air Filter - 300 x 200 mm	No	1			
3.4.4	Ducting - Class 1 Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238 Ducting - Low Spiral galvanised steel ducting : 150mm - 200mm diameter, including all transformations, brackets and supports and complying with SANS1239 Duct Work: Unless otherwise specified all sheet metal ductwork shall be supplied and installed complete with all the necessary galvanised iron rods, insulation, hangers and angle supports etc. 200 x 170 mm 200 x 160 mm 150 dia. Ø150 mm - Takeoff Standard	m	4			
		m	30			
		m	12			
		No	9			
3.4.5	Flexible Ducting - Wire reinforced aluminium flexible ducting : 150Ø diameter and 1000mm long, C/W, clamps, duct sealant and fixings	No	9			
3.4.6	Weather Louvre - 300 x 200 : Epoxy Powder Coated	No	1			
3.4.7	Supply air diffuser - 600 x 600 : 150 dia neck.	No	9			
3.4.8	Install and commission : including all brackets, supports, etc.	No	1			
Carried Forward to Bill 3.4 Collection:						

Bill 4 Car Rental						
No.	Description	Unit	Qty	Rate	Install	Total
4.1	PRELIMINARY & GENERAL					
	Note: All items shall be priced for whatever cost may be considered necessary for Preliminary and General to carry out the Mechanical Installations in full, as detailed in the drawings, Specifications and Schedules, which shall include, but shall not be limited, to the following:					
4.1.1	Site Establishment - over and above the Main Contractor's allowance.	Item	0			
4.1.2	Equipment and Systems operation instruction and training for Employer's staff prior to handover to the Client	Item	1			
4.1.3	Three (3) copies of O&M Manuals (Hard and Electronic copies)	Item	1			
4.1.4	"As Built" drawings (3 copies)	Item	1			
4.1.5	Provision of full Maintenance and Warranty for all installations and equipment for 12 (Twelve) months from the date of Practical Completion. Service records to be compiled and submitted for each service carried out. Refer to Tender Specification.	Item	1			
4.1.6	Allowance for Electrical Connections and CoCs - Paid on proven cost by prior approval	Item	1	R60 000,00		R 60 000,00
4.1.7	Scaffolding	Item	1			
4.1.8	Cranage	Item	1			
4.1.9	Removal of existing and redundant HVAC systems.	Item	1			
4.1.10	Contingencies	PC Sum	1			
Carried Forward to Bill 4.1 Collection:						

Bill 4 Car Rental						
No.	Description	Unit	Qty	Rate	Install	Total
4.2	<p>AIR CONDITIONING SYSTEMS Supply, Delivery and Installation of VRF Air Conditioning systems complete with indoor and outdoor units. Including trunking, piping between outdoor and indoor portions of unit, mounting brackets, condensate drain pumps and all necessary accessories. inclusive of BMS interface and connections. BluChem Treated prior to delivery to site Manufacturers - Daikin, LG, Midea, Mitsubishi, Samsung or similar approved.</p>					
4.2.1	<p>Indoor Units</p> <p>Ceiling Concealed, Hideaway Air Conditioning Unit ^{C/W} Wired Remote Controller and all necessary supports, brackets and ancillaries</p> <p>29.3kW Heating/Cooling</p>	No	4			
4.2.2	<p>Accessories</p> <p>Wired Remote Controller</p> <p>64T - Refnet branch joints piping kit</p>	No	4			
4.2.3	<p>Outdoor Units</p>					
4.2.4	<p>VRF ^{C/W} All necessary electrical connections, electronic control interfaces and wiring, supports, brackets and ancillaries</p> <p>Outdoor unit - 20U, 56kW</p>	No	2			
Carried Forward:						

Brought Forward:					
4.2.5	<p>Refrigeration Piping Suitably sized, 2 and 3 Pipe high pressure (410A quality) soft and hard drawn refrigeration piping. Insulated with pre-formed, high density, closed cell insulation as Armaflex or Equal and Approved. All insulation joints to be firmly finished with high quality contact adhesive and banded with impervious "Lasso" tape or equal approved. C/W all necessary Branch Pipe fittings, adaptors, isolators and accessories. Neatly run in approved cable trays and inclusive of all necessary supports, brackets and ancillaries.</p>				
	38,1 mm	m	29		
	31,8 mm	m	3		
	28,6 mm	m	22		
	25,4 mm	m	6		
	19,1 mm	m	31		
	15,9 mm	m	22		
	12,7 mm	m	6		
Carried Forward:					

Brought Forward:					
	Supply and install Class O Armaflex closed cell, elastomeric, nitrile rubber, dust free, fibre free and CFC free with an ODP of zero insulation (please note the different refrigerant pipe sizes above)	m	119		
	Condensate drain pipe, with support hangers and P-traps -Supply and install 25mm Ø uPVC pipe for each indoor and outdoor units complete with clamps, hangers, elbows, vents etc. Insulated.	m	60		
4.2.6	Supply Air Diffuser - 600 x 600/250Ø Spigot	No	26		
4.2.7	Supply Air Grille - 450 x 300/350Ø Spigot	No	12		
4.2.6	Install & Commission (inclusive of all brackets, supports etc.) for each system	No	1		
Carried Forward to Bill 4.2 Collection:					

Bill 4 Car Rental						
No.	Description	Unit	Qty	Rate	Install	Total
4.3	EXTRACTION SYSTEMS Supply, deliver to site and install the following equipment and services. Ground Floor					
4.3.1	Fan EF01 Inline Tube fan : 245 l/s @ 200Pa ESP : ^C / _w AVM's and supports	No	1			
4.3.2	Sound Attenuator - Open Type to suit Inline Tube fan : Length 500mm : ^C / _w Flexible Collars	No	2			
4.3.3	Diffusers - 200ø Epoxy Coated Disc Valve	No	4			
4.3.4	Return Air Grille - 1200 x 600/350ø Spigot	No	0			
4.3.5	Ducting - Class 1 Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238 Ducting - Low Pressure Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239					
Carried Forward:						

		Brought Forward:			
	<p>DUCT WORK: Unless otherwise specified all sheet metal ductwork shall be supplied and installed complete with all the necessary galvanised iron rods, insulation, hangers and angle supports etc.</p>				
	1230 x 360 mm	m	0		
	500 x 400 mm	m	0		
	250 x 200 mm	m	4		
	200 x 200 mm	m	0		
	150 x 200 mm	m	4		
	100 x 200 mm	m	0		
	350 mm Diameter	m	0		
	Ø200 - Takeoff Standard	No	0		
	100 x 200 mm End cap	No	1		
	150 x 200 mm - 100 x 200 mm Rectangular Transition Angle: 45 Degree (1W)	No	0		
	200 x 200 mm - 150 x 200 mm Rectangular Transition Angle: 45 Degree (1W)	No	0		
	250 x 200 mm - 200 x 200 mm Rectangular Transition Angle: 45 Degree (1W)	No	0		
	250 x 200 mm - Ø350 mm Rectangular to Round Transition Angle: 45 Degree	No	0		
	500 x 400 mm - Ø350 mm Rectangular to Round Transition Angle: 45 Degree	No	0		
4.3.6	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200ø diameter and 1500mm long, C _w , clamps, duct sealant and fixings	No	4		
4.3.7	Weather Louvre - 500 x 400 : Epoxy Powder Coated	No	1		
4.3.8	Install and commission : including all brackets, supports, etc.	No	1		
Carried Forward to Bill 4.3 Collection:					

Bill 4 Car Rental						
No.	Description	Unit	Qty	Rate	Install	Total
4.4	VENTILATION SYSTEMS Supply, deliver and install the following equipment and services.					
4.4.1	Fan SF01 - Inline Tube fan : 384l/s @ 200Pa ESP : C/W AVM's and supports	No	2			
4.4.2	Sound Attenuator - Open Type to suit Inline Tube fan : Length 500mm : C/W Flexible Collars	No	4			
4.4.3	Air Filter - 500 x 400 mm	No	2			
4.4.4	Ducting - Class 1 Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238 Ducting - Low Spiral galvanised steel ducting : 200mm - 350mm diameter, including all transformations, brackets and supports and complying with SANS1239 Duct Work: Unless otherwise specified all sheet metal ductwork shall be supplied and installed complete with all the necessary galvanised iron rods, insulation, hangers and angle supports etc.					
	650 x 300 mm	m	4			
	550 x 300 mm	m	9			
	500 x 400 mm	m	1			
	450 x 300 mm	m	9			
	350 x 300 mm	m	7			
	300 x 300 mm	m	2			
	300 x 250 mm	m	12			
	200 x 300 mm	m	14			
	150 x 300 mm	m	6			
	350 mm Diameter	m	1			
	250 mm Diameter	m	23			
Carried Forward:						

		Brought Forward:				
	435 x 285 mm - Takeoff Standard	No	12			
	Ø250 mm - Takeoff Standard	No	26			
	200 x 300 mm Rectangular End Cap	No	6			
	150 x 300 mm Rectangular End Cap	No	3			
	1230 x 360 mm - 650 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	4			
	650 x 300 mm - 550 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	4			
	550 x 300 mm - 450 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	4			
	450 x 300 mm - 350 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	450 x 300 mm - 300 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	450 x 300 mm - 200 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	2			
	350 x 300 mm - 250 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	350 x 300 mm - 200 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	2			
	300 x 300 mm - 200 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	250 x 300 mm - 200 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	150 x 300 mm - 200 x 300 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	250 x 300 mm Rectangular Elbow (1W)	No	1			
	300 x 250 mm - Ø350 mm Rectangular to Round Transition Angle: 45 Degree	No	1			
	500 x 400 mm - Ø350 mm Rectangular to Round Transition Angle: 45 Degree	No	1			
4.4.5	Flexible Ducting - Wire reinforced aluminium flexible ducting : 200ø diameter and 1500mm long, C/W , clamps, duct sealant and fixings fixed to ceiling concealed hideaway units.	No	4			
		Carried Forward:				

Brought Forward:						
4.4.6	Flexible Ducting - Wire reinforced aluminium flexible ducting : 250ø diameter and 1500mm long, C/W , clamps, duct sealant and fixings fixed to ceiling concealed hideaway units.	No	26			
4.4.7	Balancing Dampers - 200ø	No	4			
4.4.8	Weather Louvre - 500 x 400 : Epoxy Powder Coated	No	2			
4.4.9	Supply air grille - 435 x 285 : Epoxy Powder Coated	No	12			
4.4.10	Install and commission : including all brackets, supports, etc.	No	1			
Carried Forward to Bill 4.4 Collection:						

Bill 4 Car Rental						
No.	Description	Unit	Qty	Rate	Install	Total
4.5	BUILDER'S WORK					
4.5.1	Concrete Plinths 1540mm x 2150mm x 150mm	No	1			
4.5.2	Openings in brickwork for Louvers	No	3			
4.5.3	1800mm High and 6300mm Perimetre Clear View Security Fencing With Spikes	No	1			
4.5.4	Clear View Post Mount Swing Lockable Gate 1800mm High and 1000mm Wide	No	1			
4.5.5	Cold Drill 50mm - 100mm	No	12			
4.5.6	Undercutting of Doors	No	6			
4.5.7	Removal and reinstallation of ceilings	Item	1			
Carried Forward to Bill 4.5 Collection:						

Bill 5 Ramp Handlers						
No.	Description	Unit	Qty	Rate	Install	Total
5.1	PRELIMINARY & GENERAL					
	Note: All items shall be priced for whatever cost may be considered necessary for Preliminary and General to carry out the Mechanical Installations in full, as detailed in the drawings, Specifications and Schedules, which shall include, but shall not be limited, to the following:					
5.1.1	Site Establishment - over and above the Main Contractor's allowance.	Item	0			
5.1.2	Equipment and Systems operation instruction and training for Employer's staff prior to handover to the Client	Item	1			
5.1.3	Three (3) copies of O&M Manuals (Hard and Electronic copies)	Item	1			
5.1.4	"As Built" drawings (3 copies)	Item	1			
5.1.5	Provision of full Maintenance and Warranty for all installations and equipment for 12 (Twelve) months from the date of Practical Completion. Service records to be compiled and submitted for each service carried out. Refer to Tender Specification.	Item	1			
5.1.6	Allowance for Electrical Connections and CoCs - Paid on proven cost by prior approval	Item	1	R 60 000,00		R 60 000,00
5.1.7	Scaffolding	Item	1			
5.1.8	Cranage	Item	1			
5.1.9	Removal of existing and redundant HVAC systems.	Item	1			
5.1.10	Contingencies	PC Sum	1			
Carried Forward to Bill 5.1 Collection:						

Bill 5 Ramp Handlers						
No.	Description	Unit	Qty	Rate	Install	Total
5.2	<p>AIR CONDITIONING SYSTEMS Supply, Delivery and Installation of VRF Air Conditioning systems complete with indoor and outdoor units. Including trunking, piping between outdoor and indoor portions of unit, mounting brackets, condensate drain pumps and all necessary accessories. inclusive of BMS interface and connections. BluChem Treated prior to delivery to site Manufacturers - Daikin, LG, Midea, Mitsubishi, Samsung or similar approved.</p>					
5.2.1	<p>Mid-Wall Air Conditioning Unit - Indoor Unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries</p>					
	2.2kW Heating/Cooling	No	3			
	2.8kW Heating/Cooling	No	4			
	3.6kW Heating/Cooling	No	2			
	4.5kW Heating/Cooling	No	1			
	7.1kW Heating/Cooling	No	1			
5.2.2	<p>VRF Cassette Air Conditioning Unit - Indoor Unit C/W Wireless Remote Controller and all necessary supports, brackets and ancillaries</p>					
	4.5kW Heating/Cooling	No	1			
	7.1kW Heating/Cooling	No	1			
	8.0kW Heating/Cooling	No	1			
	11.2kW Heating/Cooling	No	1			
5.2.3	<p>Accessories</p>					
	Wired Remote Controller	No	15			
	75T - Refnet branch joints piping kit	No	1			
	64T - Refnet branch joints piping kit	No	3			
	29T - Refnet branch joints piping kit	No	4			
	20T - Refnet branch joints piping kit	No	6			
Carried Forward:						

Brought Forward:					
5.2.4	Outdoor Units VRV-Daikin 32U, 3~400V C/W All necessary electrical connections, electronic control interfaces and wiring, supports, brackets and ancillaries Outdoor unit - 32U [20U+12U], 90kW	No	1		
5.2.5	Refrigeration Piping Suitably sized, 2 and 3 Pipe high pressure (410A quality) soft and hard drawn refrigeration piping. Insulated with pre-formed, high density, closed cell insulation as Armaflex or Equal and Approved. All insulation joints to be firmly finished with high quality contact adhesive and banded with impervious "Lasso" tape or equal approved. C/W all necessary Branch Pipe fittings, adaptors, isolators and accessories. Neatly run in approved cable trays and inclusive of all necessary supports, brackets and ancillaries.				
	28,6mm	m	24		
	22,2mm	m	4		
	19,1mm	m	1		
	15,9mm	m	35		
	12,7mm	m	40		
	9,52mm	m	27		
	6,35mm	m	29		
5.2.6	Supply and install Class O Armaflex closed cell, elastomeric, nitrile rubber, dust free, fibre free and CFC free with an ODP of zero insulation (<i>please note the different refrigerant pipe sizes above</i>)	m	160		
5.2.7	Condensate drain pipe, with support hangers and P-traps -Supply and install 25mm Ø uPVC pipe for each indoor and outdoor units complete with clamps, hangers, elbows, vents etc. Insulated.	m	80		
5.2.8	Install & Commission (inclusive of all brackets, supports etc.) for each system	No	1		
Carried Forward to Bill 5.2 Collection:					

Bill 5 Ramp Handlers						
No.	Description	Unit	Qty	Rate	Install	Total
5.3	EXTRACTION SYSTEMS Supply, deliver to site and install the following equipment and services.					
5.3.1	Fan EF01 Wall mounted fan ^c / _w EPC weather louvre : 15l/s @ 50Pa ESP : AVM mounting	No	1			
5.3.2	Fan EF02 Ceiling mounted fan : 110l/s @ 50Pa ESP : AVM mounting	No	6			
5.3.3	Weather Louvre - 500 x 400 : Epoxy Powder Coated	No	2			
5.3.4	Install and commission : including all brackets, supports, etc.	No	7			
Carried Forward to Bill 5.3 Collection:						

Bill 5 Ramp Handlers						
No.	Description	Unit	Qty	Rate	Install	Total
5.4	VENTILATION SYSTEMS					
	Supply, deliver and install the following equipment and services.					
5.4.1	Fan SF01 - Inline Tube fan : 160,8l/s @ 200Pa ESP : C/W AVM's and supports	No	1			
5.4.2	Fan SF02 - Inline Tube fan : 171l/s @ 200Pa ESP : C/W AVM's and supports	No	1			
5.4.3	Sound Attenuator - Open Type to suit Inline Tube fan SF01 : Length 500mm : C/W Flexible Collars	No	2			
5.4.4	Sound Attenuator - Open Type to suit Inline Tube fan SF02 : Length 500mm : C/W Flexible Collars	No	2			
5.4.5	Air Filter - 300 x 200	No	2			
5.4.6	Ducting - Class 1 Low Pressure galvanised steel ducting, including all transformations, brackets and supports and complying with SANS1238.All ducts shall be acoustic insulated complete with clips					
	DUCT WORK: Unless otherwise specified all sheet metal ductwork shall be supplied and installed complete with all the necessary galvanised iron rods, insulation, hangers and angle supports etc.					
	150 x 200 mm	m	14			
	100 x 200 mm	m	20			
	100 x 200 mm Rectangular End Cap	No	2			
	Ø150 - Takeoff Standard	No	18			
	150 x 200 mm - Ø250 mm Rectangular to Round Transition Angle: 45 Degree	No	4			
	300 x 200 mm - 100 x 200 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	300 x 200 mm - 150 x 200 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	150 x 200 mm - 100 x 200 mm Rectangular Transition Angle: 45 Degree (1W)	No	1			
	150 x 200 mm Rectangular Elbow (1W)		1			
Carried Forward:						

Brought Forward:					
5.4.7	Flexible Ducting - Wire reinforced aluminium flexible ducting 1500 mm : 200 ϕ , C/W , clamps, duct sealant and fixings fixed to A/C units.	No	3		
5.4.8	Diffusers - 200 ϕ Epoxy Coated Disc Valve	No	18		
5.4.9	Weather Louvre - 300 x 200 : Epoxy Powder Coated	No	2		
5.4.10	Install and commission : including all brackets, supports, etc.	No	2		
Carried Forward to Bill 5.4 Collection:					

Bill 5 Ramp Handlers						
No.	Description	Unit	Qty	Rate	Install	Total
5.5	BUILDER'S WORK					
5.5.1	Concrete Plinths - 1025mm x 1540mm x 150mm	No	1			
5.5.2	1800mm High and 4600mm Perimetre Clear View Security Fencing With Spikes	No	1			
5.5.3	Clear View Post Mount Swing Lockable Gate 1800mm High and 1000mm Wide	No	1			
5.5.4	Openings in brickwork for Louvers and Wall mounted Fans	No	5			
5.5.5	Core Drill 50mm - 100mm	No	1			
5.5.6	Undercutting of Doors	No	3			
5.5.7	Removal and reinstallation of ceilings	Item	1			
Carried Forward to Bill 5.5 Collection:						

Bill 6 HVAC Essential Supply Connections						
No.	Description	Unit	Qty	Rate	Install	Total
6,1	Electrical Connections Terminate and make good Normal Supply connections to HVAC equipment. Connect HVAC equipment to Essential Supply circuits on the DB board CBs for the following Areas					
6,1,1	Electrical Sub-Station	No	2			
6,1,2	Wire Control Centres	No	6			
6,1,3	UPS Rooms	No	2			
6,1,4	Electrical CoCs	No	3			
6,1,5	Testing on the HVAC Units on power failure	No	1			
Carried Forward to Bill 6,1 Collection:						