

FF3

A Model: AMS Axial Flow Fan, AP0402AA5/0.6 or Similar
 Approved
 Duty: 1250 l/s @ 230 Pa

No 1

B Extras: 2.0 Dia Podded Sound Attenuators & Pleated
 Filter Bank

No 2

C Controller: Interlinked to start/stop via canopy mounted
 controller & motor protection mounted in separate

SUM

D Ducting & Supports: As per Drawing

SUM

CAN01

E AMMS Cyclovent or Similar Approved Boxed Type 304
 S/S Canopy
 Extras: S/S spigot covers , 2 x moisture proof fluorescent
 light fittings
 Size: 2500x1200x600(H) - close off piece to protrude
 100mm into ceiling

No 1

Carried to Collection

Section No. 5
 Bill No. 3
 Fans

R

Jm 1
M 351

R.

Section No. 5

Bill No. 3

Fans

SUMMARY

Total Brought Forward from Page No.

**Page
No**

271

272

273

Amount

Carried Forward to Summary of Section No. 5

Section No. 5
Bill No. 3
Fans

R

Amh

M

352

P.

Item No		Quantity	Rate	Amount
	<u>SECTION 5</u>			
	<u>MECHANICAL WORKS - HVAC</u>			
	<u>BILL 4</u>			
	<u>AIR TERMINALS</u>			
	NOTE : For all TRADE NAMES and the use of alternative items, refer to Section 3: Specific Preliminaries item C3			
	<i>(CPAP Work Group No. 170 unless otherwise stated)</i>			
	This Bill of Quantities have been drawn up in accordance with the provisions of the Model Bill of Quantities for Mechanical Work, published by the Association of South African Quantity Surveyors (July 1990).			
	<u>D3</u>			
A	"Rickard" or similar approved 600 x 600mm (250mm diameter Spigot) CCD - Square Ceiling Diffuser Extras: Installation T-Ring			
	Finish: Epoxy Powder Coated - Matt White	No	2	
	<u>D4</u>			
B	"Rickard" or similar approved 600 x 600mm (250mm diameter Spigot) CCD - Square Ceiling Diffuser Extras: Installation T-Ring			
	Finish: Epoxy Powder Coated - Matt White	No	6	
	Carried to Collection			
	Section No. 5 Bill No. 4 Air Terminals			R 353

SV01

A	"TROX" Z-LVS or similar approved 200mm diameter (159mm diameter Spigot) Steel Supply Disc Valve Extras: G1-Installation subframe Finish: Baked Enamel White	No	25
---	---	----	----

TAG01

B	"TROX" or similar approved 250 x 250mm Fixed Curved Blade Transfer Air Grille REVISION 1 Finish: Epoxy Powder Coated - Pure White (RAL9010)	No	15
---	---	----	----

DG 01

C	"Europair" or similar approved 400 x 400mm Non-Vision "V" Blade Door Grille (DG) Extras: Punched & Counter Sunk Finish: Epoxy Powder Coated GREY (RAL TBC)	No	32
---	--	----	----

DV01

D	"TROX" or similar approved 200mm diameter (150mm diameter Spigot) Steel Extract Disc Valve Finish: Baked Enamel White	No	6
---	--	----	---

FAG04

E	"TROX" or similar approved 600 x 600mm Fixed Curved Blade Supply Air Grille Extras: Plenum & Spigot Finish: Epoxy Powder Coated - White	No	4
---	---	----	---

Carried to Collection

Section No. 5
Bill No. 4
Air Terminals

R

Smh)

M **354**

R.

Section No. 5

Bill No. 4

Air Terminals

SUMMARY

Total Brought Forward from Page No.

**Page
No**

275

276

Amount

Carried Forward to Summary of Section No. 5

Section No. 5
Bill No. 4
Air Terminals

R

July
355

R.

Item No	SECTION 5	Quantity	Rate	Amount
	<u>MECHANICAL WORKS - HVAC</u>			
	<u>BILL 5</u>			
	<u>LOUVRES</u>			
	NOTE : For all TRADE NAMES and the use of alternative items, refer to Section 3: Specific Preliminaries item C3			
	<i>(CPAP Work Group No. 170 unless otherwise stated)</i>			
	This Bill of Quantities have been drawn up in accordance with the provisions of the Model Bill of Quantities for Mechanical Work, published by the Association of South African Quantity Surveyors (July 1990).			
	<u>WL01</u>			
A	"TROX" or similar approved 400 x 200mm Fixed Blade Weather Louvre Extras: c/w Burglar Bars, Galvanised Wire Mesh, Wall Sleeve Finish: Powder Coated - RAL TBC	No	1	
	<u>WL02</u>			
B	"TROX" or similar approved, 850 x 450mm Fixed Blade Weather Louvre Extras: c/w Burglar Bars, Galvanised Wire Mesh, Wall Sleeve Finish: Powder Coated - RAL TBC	No	1	
	<u>WL03</u>			
C	"TROX" or similar approved 1050 x 450mm Fixed Blade Weather Louvre Extras: c/w Burglar Bars, Galvanised Wire Mesh, Wall Sleeve Finish: Powder Coated - RAL TBC	No	4	
	Carried to Collection			
	Section No. 5 Bill No. 5 Louvres			
				R
				356

WL04

A "TROX" or similar approved 600 x 1500mm AWK
Weather Louvre
Extras: c/w Burglar Bars, Wall Sleeve
Finish: Epoxy Powder Coated - RAL TBC

No

4

Carried to Collection

Section No. 5
Bill No. 5
Louvres

R

Handwritten:
357
R.

Section No. 5

Bill No. 5

Louvres

SUMMARY

Total Brought Forward from Page No.

**Page
No**

278

279

Amount

Carried Forward to Summary of Section No. 5

Section No. 5

Bill No. 5

Louvres

R

Handwritten signature

Handwritten number 358

R.

Item No		Quantity	Rate	Amount
	<u>SECTION 5</u>			
	<u>MECHANICAL WORKS - HVAC</u>			
	<u>BILL 6</u>			
	<u>DAMPERS</u>			
	NOTE : For all TRADE NAMES and the use of alternative items, refer to Section 3: Specific Preliminaries item C3			
	<i>(CPAP Work Group No. 170 unless otherwise stated)</i>			
	This Bill of Quantities have been drawn up in accordance with the provisions of the Model Bill of Quantities for Mechanical Work, published by the Association of South African Quantity Surveyors (July 1990).			
	<u>FD1</u>			
A	"TROX" or similar approved 400 x 400mm 400L Fire Damper Extras: 72°C - Fusible Link (SABS Certified 2Hr Fire Rated)	No	1	
	<u>BD01</u>			
B	"Europair" or similar approved 350mm dia Butterfly Balancing Damper Extras: None	No	1	
	<u>BD02</u>			
C	"Europair" or similar approved 400mm dia Butterfly Balancing Damper Extras: None	No	1	
	Carried Forward to Summary of Section No. 5			
	Section No. 5 Bill No. 6 Dampers			
				R
				359

Handwritten signature and number 359 with 'R.' below it.

SECTION SUMMARY - SECTION 5 - MECHANICAL WORKS - HVAC

Bill No		Page No		Amount
1	Item rates as for Billed Items	259		
2	AC Units	270		
3	Fans	274		
4	Air Terminals	277		
5	Louvres	280		
6	Dampers	281		

Carried to Final Summary

Section No. 5

R

M
July
360
R.

Item
 No

Quantity

Rate

Amount

SECTION 6

MECHANICAL WORKS - FIRE

BILL 1

ITEM RATES AS FOR BILLED ITEMS

NOTE : For all TRADE NAMES and the use of alternative items, refer to Section 3: Specific Preliminaries item C3

(CPAP Work Group No. 170 unless otherwise stated)

This Bill of Quantities have been drawn up in accordance with the provisions of the Model Bill of Quantities for Mechanical Work, published by the Association of South African Quantity Surveyors (July 1990).

Non Scheduled Bill, Provisional Sum & Tenant Requirement Item Rates

LABOUR COST

Rates for non scheduled items are to be applied to the hours worked and are to include for the cost of labour, all levies, bonuses and leave pay.

Erection Team

A	Office Hours	Hrs	1.00
B	After Hours (<i>Weekdays & Saturdays</i>)	Hrs	1.00
C	After Hours (<i>Sundays & Public Holidays</i>)	Hrs	1.00

Fabrication Team

D	Office Hours	Hrs	1.00
E	After Hours (<i>Weekdays & Saturdays</i>)	Hrs	1.00

Carried to Collection

Section No. 6
 Bill No. 1
 Item rates as for Billed Items

R

AT 361
 J. J. J.

R.

A	After Hours (<i>Sundays & Public Holidays</i>)	Hrs	1.00
<u>Commissioning Team</u>			
B	Office Hours	Hrs	1.00
C	After Hours (<i>Weekdays & Saturdays</i>)	Hrs	1.00
D	After Hours (<i>Sundays & Public Holidays</i>)	Hrs	1.00
<u>Engineer</u>			
REVISION 1			
E	Office Hours	Hrs	1.00
F	After Hours (<i>Weekdays & Saturdays</i>)	Hrs	1.00
G	After Hours (<i>Sundays & Public Holidays</i>)	Hrs	1.00
<u>Draughts Person</u>			
H	Office Hours	Hrs	1.00
J	After Hours (<i>Weekdays & Saturdays</i>)	Hrs	1.00
K	After Hours (<i>Sundays & Public Holidays</i>)	Hrs	1.00
<u>EQUIPMENT AND MATERIAL COST</u>			
L	The cost of all equipment shall remain fixed	Item	Fixed
<u>TRANSPORT AND DELIVERY</u>			
M	Distance of Return Trip to site	Km	1
N	Vehicle up to 1 ton	Km	1
P	Vehicle up to 2 ton	Km	1

Carried to Collection

Section No. 6
Bill No. 1
Item rates as for Billed Items

R

M 362
R. July

A	Vehicle up to 5 ton	Km	1
B	Vehicle up to 10 ton	Km	1
C	Vehicle up to 20 ton	Km	1
<u>MARK-UP OM COST</u>			
D	(Overhead & Profit)	Item	

Carried to Collection

Section No. 6
Bill No. 1
Item rates as for Billed Items

R

NI 363
R. Jm2/

Section No. 6

Bill No. 1

Item rates as for Billed Items

SUMMARY

Total Brought Forward from Page No.

**Page
No**

283

284

285

Amount

Carried Forward to Summary of Section No. 6

Section No. 6

Bill No. 1

Item rates as for Billed Items

R

364

OK

July

R.

WATER SUPPLY TANKS

A SQUARE SECTIONAL STEEL FIRE & DOMESTIC TANK (VIDEX or similar ASIB approved) 6(L) x 3(W) x 4(H)

Total Effective Capacity of 78m³ (FIRE) Effective Capacity of 39m³ (DOMESTIC)

Inclusive of all the following:

- Tank Infill Connections (4 off) (1x80mm, 3x50mm)
 - Tank Infill Valve Assembly & Piping: (2off) (1x80mm, 1x50mm)
 - Tank Drain & Overflow Connections: (2off 80mm)
 - Tank Drain & Overflow Piping: (2off 100mm)
 - Pump Test Return Pipe Connection: (1off 100mm)
 - Pump Cooling Pipe Connection: (N/A)
 - Water Level Indicators (2off)
 - Access Ladders & Hatches (1off)
- Square sectional panels only

No 1

PUMP HOUSE PIPE WORK

B HYDRANT & DOMESTIC PUMP & TANKS - ASIB APPROVED

- Vortex Inhibitor: (2 off) (1x100mm & 1x150mm)
- Pump Suction Pipework (Include as per drawing)
- Flanged Butterfly Isolating Valves - geared operations
- Flanged Flexible Connection
- Delivery Piping (Include as per drawing)
- Delivery Isolating valve - geared butterfly c/w stainless steel disc
- Delivery Non-return valve - stainless steel disc (N/A)
- Pump Test Return Piping (Include piping into pumproom)
- Pump Test Direct Reading Flow Meter
- Pump Cooling Piping (N/A)
- Pipework support brackets (Include as per drawing)
- 3-tier Autostart arrangement
- Diesel Tanks with vent piping (N/A)
- Control Panels with wiring
- GSM dialler module link to panels
- Extraction fan with wiring
- Valve & Pipe labels (Normally open/closed, directional arrows, etc.)

SUM

Carried to Collection

R

Section No. 6
Bill No. 2
WS-01

OK 366

R. Jimu/

PAINTING

A PUMP HOUSE PIPE WORK

To be painted with one coat primer, and 2 finish coats
gloss enamel - WORK
Enamel oil based or approved equivalent
Signal Red - Suction, cooling & delivery piping
Blue - Enamel oil based (Infill, Council Bypass, domestic
water)
Labels - incl. directional arrows, Bypass, Suction, Supply,
etc.

SUM

ENGINEERING ALLOWANCE

B To be used at the discretion of the engineer and to be
deducted in whole or part as required

SUM

PUMP ROOM COUNCIL BYPASS FITTINGS

C BUTTERFLY VALVE - PN16 Gear Box Operated -
"Woodlands" or similar approved
80mm diameter C.I. BODY FBE Coated c/w stainless
steel Disc

No 2

D BUTTERFLY VALVE - PN16 Gear Box Operated -
"Woodlands" or similar approved
50mm diameter C.I. BODY FBE Coated c/w stainless
steel Disc

No 4

E CHECK VALVE - Double door PN16 - "Woodlands" or
similar approved
50mm diameter C.I. BODY FBE Coated c/w stainless
steel Disc

No 2

F CHECK VALVE - Double door PN16 - "Woodlands" or
similar approved
80mm diameter C.I. BODY FBE Coated c/w stainless
steel Disc

No 1

G 100mm diameter Medium grade Galv. steel piping to
SANS 62-1 or SANS 62-2

m 18

H 80mm diameter Medium grade Galv. steel piping to
SANS 62-1 or SANS 62-2

m 15

Carried to Collection

R

Section No. 6
Bill No. 2
WS-01

367

e. Jmm /

A	50mm diameter Medium grade Galv. steel piping to SANS 62-1 or SANS 62-2	m	40
<u>UNDERGROUND STEEL PIPE CONNECTION - AS PER TYPICAL DETAIL C</u>			
B	32mm diameter "GMS" Connection piece c/w double "denzo" wrapping or similar approved	m	3
C	50mm diameter "GMS" Connection piece c/w double "denzo" wrapping or similar approved	m	4
D	80mm diameter "GMS" Connection piece c/w double "denzo" wrapping or similar approved	m	2
E	100mm diameter "GMS" Connection piece c/w double denzo wrapping	m	2
<u>UNDERGROUND STEEL PIPE CONNECTION - AS PER DETAIL D</u>			
F	100mm diameter "GMS" Connection piece c/w double "denzo" wrapping or similar approved	m	2

Carried to Collection

Section No. 6
 Bill No. 2
 WS-01

R

M 368
 R. Jmm

Section No. 6

Bill No. 2

WS-01

SUMMARY

Total Brought Forward from Page No.

**Page
No**

287

288

289

290

Amount

Carried Forward to Summary of Section No. 6

Section No. 6
Bill No. 2
WS-01

R

M 369

P. JmW/

A	HOSE REEL PRESSURE GAUGE KIT - 100mm Gauge c/w stop cock	No	2
B	WALL MOUNTED STEEL HOSE REEL CABINET - for 30 meter fire hose reel c/w mounting bracket	No	2
C	FIRE EXTINGUISHER - 4,5kg Dry Chemical Powder c/w varnished backing board as per detail	No	20
D	FIRE EXTINGUISHER - 9,0kg Dry Chemical Powder c/w varnished backing board as per detail	No	3
E	STEEL CABINET- 4,5kg Fire Extinguisher c/w wall bracket and fixing material	No	4
F	STEEL CABINET- 9,0kg Fire Extinguisher c/w wall bracket and fixing material	No	2
G	FIRE EXTINGUISHER - 5,0kg CO ₂ c/w varnished backing board as per detail	No	3
H	FIRE EXTINGUISHER - 2,0kg CO ₂ c/w varnished backing board as per detail	No	2
<u>PVC Cover</u>			
J	4,5kg DCP Fire Extinguisher - UV Resistant	No	4
K	5,0kg CO ₂ - UV Resistant	No	3
L	9,0kg DCP Fire Extinguisher - UV Resistant	No	1
M	Hose Reel Cover - UV Resistant	No	2
<u>Fire Blanket</u>			
N	1,2m x 1,2m c/w varnished backing board as per detail	No	3
P	Fire Department Twin Fire Hydrant & booster connection (Standpipes only, as per Detail A)	No	1

FIRE WATER RETICULATION PIPING & FITTINGS

Carried to Collection

Section No. 6
Bill No. 3
FE-01 Fire Equipment

R

371
R. Jsh/

Fire Water Supply Mains

A	150mm diameter Medium grade black steel piping to SANS 62-1 or SANS 62-2	m	5
B	100mm diameter Medium grade black steel piping to SANS 62-1 or SANS 62-2	m	10
C	50mm diameter Medium grade black steel piping to SANS 62-1 or SANS 62-2	m	20

Fire water Supply

D	40mm diameter Medium grade black steel piping to SANS 62-1 or SANS 62-2	m	1
E	32mm diameter Medium grade black steel piping to SANS 62-1 or SANS 62-2	m	25
F	25mm diameter Medium grade black steel piping to SANS 62-1 or SANS 62-2	m	60

Butterfly Valve

G	BUTTERFLY VALVE - PN16 Gear Box Operated - Woodlands or similar Ø100mm C.I. BODY FBE Coated c/w stainless steel Disc	No	2
---	---	----	---

Check Valve

H	CHECK VALVE - Double door PN16 - Woodlands or similar Ø100mm C.I. BODY FBE Coated c/w stainless steel Disc	No	1
---	---	----	---

Pressure Gauge

J	100mm PRESSURE GAUGE - 0-1600kPA - 1/2" Bottom	No	1
---	--	----	---

PIPE PAINTING

External Pipe Work

K	To be painted with one coat primer, and 2 finish coats - SIGNAL RED (refer to detail specification)		
---	---	--	--

SUM

Carried to Collection

R

Section No. 6
Bill No. 3
FE-01 Fire Equipment

372

RT
R. Jmk

Internal Pipe Work

A To be painted with one coat primer, and 2 finish coats -
SIGNAL RED (refer to detail specification)

SUM

Carried to Collection

Section No. 6
Bill No. 3
FE-01 Fire Equipment

R

373
M
R. JmW/

Section No. 6

Bill No. 3

FE-01 Fire Equipment

SUMMARY

Total Brought Forward from Page No.

**Page
No**

292

293

294

295

Amount

Carried Forward to Summary of Section No. 6

Section No. 6

Bill No. 3

FE-01 Fire Equipment

R

374

M

R. Jun 6/

Item No		Quantity	Rate	Amount
<u>SECTION 6</u>				
<u>MECHANICAL WORKS - FIRE</u>				
<u>BILL 4</u>				
<u>FIRE SIGNAGE</u>				
NOTE : For all TRADE NAMES and the use of alternative items, refer to Section 3: Specific Preliminaries item C3				
<u>(CPAP Work Group No. 170 unless otherwise stated)</u>				
This Bill of Quantities have been drawn up in accordance with the provisions of the Model Bill of Quantities for Mechanical Work, published by the Association of South African Quantity Surveyors (July 1990).				
<u>DIRECTIONAL ESCAPE SIGNS</u>				
A	E1: (Right) Single sided 190mm, Framed, Photo Luminescent, Wall Mounted, Horizontal Sign	No	2	
B	E2: (Left) Single sided 190mm, Framed, Photo Luminescent, Wall Mounted, Horizontal Sign	No	2	
C	E1/E2: Double sided 190mm, Framed, Photo Luminescent, Suspended, Horizontal Sign	No	3	
D	E3: (Down) Single sided 190mm, Framed, Photo Luminescent, Suspended, Horizontal Sign	No	4	
E	E3: (Down) Single sided 190mm, Framed, Photo Luminescent, Wall Mounted, Horizontal Sign	No	12	
F	E3: Single sided 190mm, LED Illuminated Sign c/w battery backup, Wall Mounted, Horizontal Sign	No		
	Frame - TBC	No	5	
Carried to Collection				R
Section No. 6 Bill No. 4 FS-03 Fire Signage				375 <i>NA</i> <i>Janu/</i> <i>R.</i>

A	E1: Single sided 190mm, LED Illuminated Sign c/w battery backup, Wall Mounted, Horizontal Sign Frame - TBC	No	2
B	E6: Single sided 190mm, LED Illuminated Sign c/w battery backup, Wall Mounted, Horizontal Sign Frame - TBC	No	4
<u>FIRE EQUIPMENT SIGNS</u>			
C	F4: Single sided 190mm, Framed, Photo Luminescent, Wall Mounted, Horizontal Sign	No	9
D	F4: Single sided 190mm, Framed, ChromaDek, Wall Mounted, Horizontal Sign	No	3
E	F5: Single sided 190mm, Framed, Photo Luminescent, Suspended, Horizontal Sign	No	2
F	F6: Single sided 190mm, Framed, Photo Luminescent, Suspended, Horizontal Sign	No	2
G	F5/F6: Double sided 190mm, Framed, Photo Luminescent, Suspended, Horizontal Sign	No	3
H	F13: Single sided 190mm, Framed, Photo Luminescent, Wall Mounted, Horizontal Sign	No	10
J	F13: Single sided 190mm, Framed, ChromaDek, Wall Mounted, Horizontal Sign	No	3
K	F14: Single sided 190mm, Framed, Photo Luminescent, Wall Mounted, Horizontal Sign	No	1

Carried to Collection

Section No. 6
Bill No. 4
FS-03 Fire Signage

R

376
M
R. Vani

External

A	F15: Single sided 290mm, No-frame, ChromaDeck, Wall Mounted, Horizontal Sign "V-Type"	No	1
B	F15: Single sided 290mm, No-frame, ChromaDeck, Pole Mounted, Panoramic Sign	No	1
C	F45: Single sided 290mm, No-frame, ChromaDek, Wall Mounted, Horizontal Sign	No	4

Internal

D	F45: Single sided 290mm, Framed, Photo Luminescent, Wall Mounted, Horizontal Sign	No	1
---	---	----	---

EXTERNAL SITE SIGNAGE

Including Installation cost

E	F49(FB8)/FB1 (Fire Pump Connection) - ChromaDek, Pole Mounted	No	1
F	GA26 (Emergency Assembly Point) - ChromaDek, Pole Mounted	No	3
G	GA26/GA2 - ChromaDek, Wall Mounted, Vertical Sign	No	3

INSTALLATION COST

H	190mm Sign	No	70
J	290mm Sign	No	10

Carried to Collection

Section No. 6
Bill No. 4
FS-03 Fire Signage

R

370
M
vnuh
R.

Section No. 6

Bill No. 4

FS-03 Fire Signage

SUMMARY

Total Brought Forward from Page No.

**Page
No**

297

298

299

Amount

Carried Forward to Summary of Section No. 6

Section No. 6

Bill No. 4

FS-03 Fire Signage

R

378

M R. vmbh/

SECTION SUMMARY - SECTION 6 - MECHANICAL WORKS - FIRE PROTECTI

Bill No		Page No	Amount
1	Item rates as for Billed Items	286	
2	WS-01	291	
3	FE-01 Fire Equipment	296	
4	FS-03 Fire Signage	300	

Carried to Final Summary

Section No. 6

R

M 379
 R. Jmuy

Item No	SECTION 7	Quantity	Rate	Amount
	<u>MECHANICAL WORKS - FIRE</u>			
	<u>BILL 1</u>			
	<u>ITEM RATES AS FOR BILLED ITEMS</u>			
	NOTE : For all TRADE NAMES and the use of alternative items, refer to Section 3: Specific Preliminaries item C3			
	<i>(CPAP Work Group No. 170 unless otherwise stated)</i>			
	This Bill of Quantities have been drawn up in accordance with the provisions of the Model Bill of Quantities for Mechanical Work, published by the Association of South African Quantity Surveyors (July 1990).			
	Non Scheduled Bill, Provisional Sum & Tenant Requirement Item Rates			
	<u>LABOUR COST</u>			
	Rates for non scheduled items are to be applied to the hours worked and are to include for the cost of labour, all levies, bonuses and leave pay.			
	<u>Erection Team</u>			
A	Office Hours	Hrs	1.00	
B	After Hours (<i>Weekdays & Saturdays</i>)	Hrs	1.00	
C	After Hours (<i>Sundays & Public Holidays</i>)	Hrs	1.00	
	<u>Fabrication Team</u>			
D	Office Hours	Hrs	1.00	
E	After Hours (<i>Weekdays & Saturdays</i>)	Hrs	1.00	
	Carried to Collection			
	Section No. 7 Bill No. 1 Item rates as for Billed Items			R
				380 M R. Jmkw/