

WATER TANK AND TOWER

Tank

Tanks are to be manufactured from standard steel panels 1220 x 1220 x 4,5mm thickness using the "Abeco externally bolted pressed steel sectional tank system" or other equal approved. All stays, rubber gaskets, sealants, bolts and nuts to assemble a watertight tank are to be supplied. Cover plates to form a roof over the tank are to be supplied with one lockable access manhole 500 x 500mm with built-in screened vent per compartment. Tank to have one internal catladder per compartment and one external ladder with safety cage with three rest platforms equally positioned over the full height. Tank shall be supplied with one level indicator per compartment as well as pipe connection points in positions specified by the Project Engineer.

Carried to Trade Summary

BUILDING WORKS

Bill No. 15

PLUMBING AND DRAINAGE

DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd

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**Major Refurbishment and Additions to the existing
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	<p>Support Structure</p> <p>The support structure shall be designed by a registered professional Engineer and shall be in accordance with SABS 0160 and 0162. The nominal self-weight loads, live and wind loads must be calculated in terms of SABS 0160. The applicable terrain category for wind shall be taken as Category 2 (undeveloped outskirts of towns and suburbs). The maximum height to the top of the support structure shall be taken as 20m. A surge load due to water surging as tower sways under wind load must be allowed for.</p> <p>A full load of reactions (service loads) imposed on the foundations separated into dead, live, wind and surge for shear, positive axial, negative axial as applicable must be provided by the supplier in order that the Project Engineer may design and provide the concrete bases.</p> <p>A full perimeter walkway with balustrading shall be provided to access the elevated tank.</p> <p>Workshop drawings of the tank and support structure (including base plate details) to be approved by the Project Engineer shall be prepared prior to the commencement of the fabrication and all prices shall be deemed to include the cost of workshop drawings and the cost of the registered professional Engineer.</p> <p>Materials</p> <p>All steelwork to be hot dipped galvanised in accordance with SABS 763.</p> <p>-----</p> <p>2/15/1 263KL water tank on and including 20m high structure erected complete on concrete bases (elsewhere measured). No 1</p> <p><u>Galvanised medium steel pipes with screwed and socketed joints</u></p> <p>2/15/2 DN 150mm Pipe. m 118</p>			
Carried to Trade Summary				R
<p>BUILDING WORKS Bill No. 15 PLUMBING AND DRAINAGE <i>DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd</i></p>				

**Major Refurbishment and Additions to the existing
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	<u>Extra over galvanised medium steel pipes with screwed and socketed joints for steel fittings</u>				
2/15/3	DN 150 x 90Deg bend.	No	8		
	<u>Class 16 PVC-U pressure pipes with solvent welded joints</u>				
2/15/4	160mm Pipes laid in and including trenches not exceeding 1m deep	m	4		
	<u>Extra over Class 16 PVC-U pressure pipes for fittings with solvent welded joints</u>				
2/15/5	150mm Tee.	No	1		
2/15/6	160mm 90Deg Bend.	No	1		
2/15/7	160mm 90Deg Flanged adaptor.	No	4		
	<u>Sundries:</u>				
2/15/8	160mm RSV gate valve.	No	1		
2/15/9	Unreinforced concrete in thrust blocks at bends, tees, etc. including necessary extra excavation, formwork, etc.	No	20		
2/15/10	Valve chamber 393 x 293mm internally of precast concrete box with lid including brick chamber below not exceeding 1m deep.	No	1		
	<u>Testing And Commissioning</u>				
2/15/11	Provide equipment, fill tank and perform water tightness test.		Item		
	<u>RAINWATER GOODS, ETC</u>				
	<u>Galvanised mild steel gutter and rainwater pipes:</u>				
2/15/12	150 x 125 x 0,9mm Thick pre-coated "Ogee" profile zinalume seamless roof gutters.	m	833		
	Carried to Trade Summary				
	BUILDING WORKS Bill No. 15 PLUMBING AND DRAINAGE DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd				R

**Major Refurbishment and Additions to the existing
Galeshewe Day Hospital
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2/15/13	Extra over gutter for angle.	No	158		
2/15/14	Extra over gutter for stopped end.	No	79		
2/15/15	Extra over gutter for 160mm diameter outlet.	No	79		
2/15/16	160mm Diameter rainwater pipes.	m	395		
2/15/17	Extra over rainwater pipe for bend.	No	158		
2/15/18	Extra over rainwater pipe for shoe.	No	79		
<u>SANITARY FITTINGS</u>					
<u>"Franke Model" or similar and approved pressed stainless steel.:</u>					
2/15/19	Franke stainless steel wash hand basin (1-bay), size to be custom-made to Architect's design and specification, fixed on 19mm hot dipped galvanised mild steel brackets fixed to wall. (Code: FB06) (Ref: HWB2)	No	10		
2/15/20	Franke stainless steel wash hand basin (2-bay), size to be custom-made to Architect's design and specification, fixed on 19mm hot dipped galvanised mild steel brackets fixed to wall. (Code: FB12) (Ref: HWB3)	No	17		
2/15/21	Franke stainless steel sink and drainer 1850 x 650mm wide with two bowls and 100mm high splashback along back and one end screwed with galvanized steel brackets (Code: 2120026). (Code: 2620482)	No	6		
2/15/22	Franke stainless steel wash hand basin, size 1800 x 550 x 150mm deep, fixed on 19mm hot dipped galvanised mild steel brackets fixed to wall. (Code: FB18) (Ref: HWB1)	No	10		
2/15/23	Franke stainless steel oval wash hand basin, size 420 x 340 x 185mm deep, fixed on 19mm hot dipped galvanised mild steel brackets fixed to wall. (Code: FB18) (Ref: Para HWB3)	No	32		
2/15/24	Franke stainless steel heavy duty wash hand basin, fixed on 19mm hot dipped galvanised mild steel brackets fixed to wall. (Code: FSWSB) (Ref: HWB3)	No	12		
Carried to Trade Summary					
BUILDING WORKS					
Bill No. 15					
PLUMBING AND DRAINAGE					
DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd					
				R	

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2/15/25	Franke model CPMX592 wall hung flush mount wc pan with soft-closing wirquin flap seat (SKU: 2540094) with mounting bracket bolted to wall with four anchor bolts, Alpha concealed cistern (Code: GEB-109.179.00.1) and connection set and actuator plate alpha 20 (Code: GEB-115.040.21.5) (flushvalve elsewhere measured). (Ref: WC1)	No	28		
2/15/26	Franke model CPMX594 wall hung flush mount wc pan with soft-closing wirquin flap seat (SKU: 2540094) with mounting bracket bolted to wall with four anchor bolts, Alpha concealed cistern (Code: GEB-109.179.00.1) and connection set and actuator plate alpha 20 (Code: GEB-115.040.21.5) (flushvalve elsewhere measured). (Ref: WC2)	No	23		
2/15/27	Franke Model DSG drip sink with grid, size 535 x 454mm including 20 x 40mm wall brackets bolted to wall.	No	3		
2/15/28	Franke code EL bedpan sluice sink size 1130 x 685mm complete with factory fitted Cobra FM 1.00 flush valve, 35mm water supply, 15mm bedpan spray nozzle, 15mm bottle spray nozzle, both activated by two 15mm quarter turn elbow action valves and fixed to wall and floor with 40mm square stainless steel gallows brackets and front legs with adjustable flanged foot pieces.	No	3		
2/15/29	Franke Model SSM surgeon scrub-up unit size 665 x 540 x 258mm deep complete with galvanised wall fixing plate and 90mm basket strainer waste including two 15mm Cobra Model 510-21 elbow action medical mixers and fixed to wall.	No	1		
2/15/30	Franke Model CMPX538 back entry urinal 313 x 341mm long x 732mm high overall, chrome plated Nova cosmopolitan actuator plate flush valve (Code: GRO-G38804000), fix urinal in position with 1.2mm stainless steel brackets and rawl bolts including all necessary strutting, point around against walls and connect up to waste and water pipes.	No	25		
2/15/31	1800 x 460mm wide Double bowl sink and drainer, fitted to counter top. (counter top elsewhere measured). (Code: 2120026).	No	5		
Carried to Trade Summary					
BUILDING WORKS					
Bill No. 15					
PLUMBING AND DRAINAGE					
DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd					
					R

**Major Refurbishment and Additions to the existing
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2/15/32	Bedpan and wash-up sink with outlets, and draining board, all set up and fixed complete to brick wall. (Code: 350052).	No	1		
	<u>"Kwikot" or similar and approved pressed stainless steel:</u>				
2/15/33	860 x 460mm wide Single bowl sink and drainer, fitted to counter top. (counter top elsewhere measured). (Code: SDI-860-SE).	No	24		
2/15/34	860 x 460mm wide Single bowl sink and drainer, fitted to counter top. (counter top elsewhere measured). (Code: SDI-800-SE).	No	10		
	<u>"Terysafe" or similar and approved pressed stainless steel:</u>				
2/15/35	52 x 29mm x 26mm PVC wall mounted eyewash station ABS safe with paddle including ball valve, outlets. (Code: TSB100Y)	No	10		
	<u>"Geberit" or similar and approved pressed stainless steel:</u>				
2/15/36	Stainless steel wall mounted urinal divider mounted to wall. (Code: GEB-110000000).	No	25		
	<u>"Geberit" or similar and approved ceramic wash hand basins:</u>				
2/15/37	450 x 350mm "Selnova" white vitreous wash hand basin, one tap hole plugs including integrated overflow and chain stay hole, bolted to wall with bracket and sealed with silicone sealant where basin meets wall.	No	17		
	<u>"Vaal" or similar approved:</u>				
2/15/38	"SOLO" Bali vitreous china wall hang coupled suite comprising 90 degree outlet open rim wash down pan (Code: MAC-211225) and Alpha concealed cistern (Code: GEB-109.179.00.1) complete with self-closing seat lid, fitments and purpose-made Alpha matt chromium plated side flush actuator and purpose made thermoset seat and cover plate.	No	18		
	Carried to Trade Summary				
	BUILDING WORKS Bill No. 15 PLUMBING AND DRAINAGE DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd				R

**Major Refurbishment and Additions to the existing
Galeshewe Day Hospital
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2/15/39	"SNIPE" vitreous china inset vanity basin fixed to the wall with brackets (Code: CSNBAJNN-2CO0423).	No	17		
	<u>WASTE UNIONS, ETC.</u>				
	<u>"Cobra Watertech" or similar approved:</u>				
2/15/40	50mm Chrome brass bath / sink waste union with plug.	No	50		
	<u>TRAPS, ETC.</u>				
	<u>"Gio Plumbing" or similar approved steel bottle trap:</u>				
2/15/41	32mm Chrome plated bottle trap with 75mm deep re-seal, adjustable telescopic pipe and 32mm outlet. (Code: GIO-A181-32)	No	162		
	<u>"Cobra" or other approved traps:</u>				
2/15/42	40mm Bath/shower trap complete with overflow outlet and pipe	No	10		
	<u>TAPS, VALVES, ETC.</u>				
	<u>"Terysafe" or similar and approved pressed stainless steel:</u>				
2/15/43	15mm Stainless steel overhead emergency shower arm with pull rod. (Code: TSA100-Y)	No	10		
	<u>"Geberit" or similar and approved stainless steel taps:</u>				
2/15/44	220mm long stainless steel Brenta tap including aerator, concealed function box, mounted to wall. (Code: 116.291.SN.1) (Ref: TAP1)	No	197		
	<u>"Hansgrohe" or equal and approved taps, etc.:</u>				
2/15/45	15mm Crometta unica chrome plated shower set with shower mixer tap and adjustable shower rose (Tap elsewhere measured) and hand shower. (Code: HG-26533400)	No	10		
	Carried to Trade Summary				
	BUILDING WORKS				
	Bill No. 15				
	PLUMBING AND DRAINAGE				
	<i>DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd</i>				
				R	

**Major Refurbishment and Additions to the existing
Galeshewe Day Hospital
in Kimberly**

2/15/46	15mm Décor chrome plated shower mixer. (Code: HG-31961223)	No	10		
	<u>"Cobra" or equal and approved taps, etc.:</u>				
2/15/47	15mm Chrome plated elbow action medical mixer. (Code: 515-21/HP)	No	25		
2/15/48	Elbow action pillar tap with raised nose and blue indice complete with a quarter turn ceramic disc and half BSP male connection inlet (Code: 503-21B/HP).	No	10		
2/15/49	"Cobra" or similar approved 15mm Stopcock as Cobra 131	No	135		
	<u>"Cobra" or similar approved floor drains:</u>				
2/15/50	115 x 115mm Seine square stainless steel floor outlet cast into concrete floor and jointed to PVC pipe.	No	10		
	<u>Floor Drains:</u>				
2/15/51	"Rofo" or equal and approved RO 280 V NW 100 round stainless steel floor drain cast into concrete floor and jointed to PVC pipe.	No	6		
	<u>FULBORE OUTLETS</u>				
	<u>Cast Iron:</u>				
2/15/52	100mm Fulbore 45 degree type outlet jointed to 80mm PVC pipe including adaptor and embedded in concrete slab.	No	8		
	<u>SANITARY PLUMBING (PROVISIONAL)</u>				
	<u>uPVC pipes:</u>				
2/15/53	40mm Pipes fixed to or chased into brickwork.	m	254		
2/15/54	50mm Pipes fixed to or chased into brickwork.	m	225		
2/15/55	110mm Pipes fixed to or chased into brickwork.	m	160		
	Carried to Trade Summary				
	BUILDING WORKS Bill No. 15 PLUMBING AND DRAINAGE DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd				R

**Major Refurbishment and Additions to the existing
Galeshewe Day Hospital
in Kimberly**

	<u>Extra over uPVC pipes for fittings.:</u>				
2/15/56	40mm Bend.	No	51		
2/15/57	50mm Bend.	No	75		
2/15/58	40mm Junction.	No	51		
2/15/59	50mm Junction.	No	150		
2/15/60	110mm End cap.	No	20		
2/15/61	110mm Access bent pan connector.	No	32		
2/15/62	110mm Access bend.	No	15		
2/15/63	110mm Access junction.	No	20		
2/15/64	110mm Access bent pan connector.	No	32		
2/15/65	40mm 'GI Two-way' vent anti-vac valve.	No	30		
	<u>Pre-cast concrete gulleys.:</u>				
2/15/66	Gulley not exceeding 500mm deep.	No	40		
	<u>Sundries.:</u>				
2/15/67	Testing waste pipe system.			Item	
	<u>WATER AND FIRE SUPPLIES</u>				
	<u>Class 2 copper pipes.:</u>				
2/15/68	15mm Pipes chased into brick walls.	m	638		
2/15/69	22mm Pipes chased into brick walls.	m	1 161		
2/15/70	22mm Pipes laid in and including trenches.	m	2 133		
2/15/71	35mm Pipes laid in and including trenches.	m	500		
	Carried to Trade Summary				
	BUILDING WORKS				
	Bill No. 15				
	PLUMBING AND DRAINAGE				
	<i>DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd</i>				
					R

**Major Refurbishment and Additions to the existing
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	<u>Extra over class 2 copper and polypropylene pipes for brass compression fittings.:</u>				
2/15/72	15mm Fittings.	No	1 307		
2/15/73	22mm Fittings.	No	699		
2/15/74	35mm Elbow.	No	130		
2/15/75	35mm Bend	No	50		
2/15/76	35mm Tee	No	50		
2/15/77	35mm Reducing tee	No	70		
	<u>Extra over class 2 copper pipes for capillary fittings:</u>				
2/15/78	15mm Fittings.	No	511		
2/15/79	22mm Fittings.	No	699		
	<u>Lagging</u>				
2/15/80	Heavy brown paper loosely wrapped around 15mm pipe as sheath for expansion.	m	425		
2/15/81	Ditto, but around 22mm pipe.	m	425		
2/15/82	Thermaflex preformed polyethylene foam lagging or similar approved insulation wrapped around 15mm pipe and fittings.	m	425		
	<u>Hot Water Cylinders, Heat Pumps, Etc</u>				
2/15/83	2,5 Litre Zip Hydroboil code 2610007 with white epoxy powder coated finish including all joints to copper pipes, fixing to wall and connecting up.	No	2		
2/15/84	7,5 Litre Zip Hydroboil code 2610011 with white epoxy powder coated finish including all joints to copper pipes, fixing to wall and connecting up.	No	2		
	Carried to Trade Summary				
	BUILDING WORKS Bill No. 15 PLUMBING AND DRAINAGE <i>DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd</i>				R

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2/15/85	200 Litre white enamelled Kwikot Meagflo horizontal wall mounted type electric hot water copper cylinder with 20mm connections and fitted with monel metal electrical element complete with vacuum breakers, pressure reducing valve and relief valve including all joints to copper pipes and fixing in position to wall with four 10 x 76mm expanding bolts in mortices in wall and connect up.	No	5		
2/15/86	0,60mm Galvanised sheet iron tray to suit 200 litre geyser with riveted and soldered seams and joints, turned up all round to form kerb 75mm high with beaded edge, including outlet with nozzle for 50mm diameter overflow pipe and fix in position.	No	5		
2/15/87	40mm PVC overflow and fixing to falls to roof timbers.	m	20		
2/15/88	Extra for 40mm bend.	No	6		
2/15/89	38mm Sawn Pine boarding for geyser platform formed of 38 x 228mm boards butt-jointed and nailed to bearers.	m ²	50		
2/15/90	38 x 114mm Sawn Pine bearers.	m	120		
2/15/91	Hole through IBR roof sheeting for copper water pipe not exceeding 50mm diameter and flash and seal all around.	No	40		
<u>FIRE SERVICE</u>					
<u>Fire Fighting Equipment</u>					
<u>Supply, deliver and install the following Fire extinguisher</u>					
2/15/92	4.5kg DCP with backing boards	No	10.00		
2/15/93	Photoluminescent signage			SUM	
<u>Fire hose reels</u>					
2/15/94	25mm x 30mL fire hose reels	No	5.00		
2/15/95	Photoluminescent signage			SUM	
Carried to Trade Summary				R	
BUILDING WORKS Bill No. 15 PLUMBING AND DRAINAGE DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd					

**Major Refurbishment and Additions to the existing
Galeshewe Day Hospital
in Kimberly**

Section No. 2 BUILDING WORKS Bill No. 15 PLUMBING AND DRAINAGE <u>COLLECTION PAGE</u>			
	Page No		Amount R
Total Brought Forward from Page No.	143		
Total Brought Forward from Page No.	144		
Total Brought Forward from Page No.	145		
Total Brought Forward from Page No.	146		
Total Brought Forward from Page No.	147		
Total Brought Forward from Page No.	148		
Total Brought Forward from Page No.	149		
Total Brought Forward from Page No.	150		
Total Brought Forward from Page No.	151		
Total Brought Forward from Page No.	152		
Total Brought Forward from Page No.	153		
Total Brought Forward from Page No.	154		
Total Brought Forward from Page No.	155		
Total Brought Forward from Page No.	156		
Total Brought Forward from Page No.	157		
Carried Forward to Summary of Section No.			R
BUILDING WORKS Bill No. 15 PLUMBING AND DRAINAGE <i>DARK HORSE PROJECTS & INVESTMENT GROUP (PTY) Ltd</i>			