Kpone/ Rev 5

WBHO Construction (Pty) Ltd
53 Andries St, Wynberg, Sandton
P.O. Box 531 Bergvlei 2012. South Africa
Tel: +27 11 321 7200 Fax: +27 11 887 4364
(e) wbhoho@wbho.co.za (w) www.wbho.co.za
Reg No. 1983/011953/07

6 October 2017

JV Driver Projects Inc.
Kpone Industrial Area Rd,
Opposite the Waste Management site
Phone: +233 (0) 247838815
Email: sgarvey@jvdriver.com

Attention: Shane Garvey

RE: THE CONSTRUCTION OF A CONTAINER HANDLING AND DEVANNING TERMINAL (JVD PROJECT NO.: 001-JVD-17)

We thank you for your enquiry and have pleasure in submitting our Budget Lump Sum Tender as requested for the abovementioned contract.

Please note that the works will be undertaken by WBHO Ghana Limited our subsidiary Company registered in Ghana.

Please note the following with regarding our offer:

Programme

1. Our pricing and P&G is based on the duration as per our attached program, however we believe we may be able to improve the program, and would discuss this during negotiation.

Contractual

2. We would require 5 copies of architects and engineer's drawings and 3 copies of services drawings.

3. We require sufficient and uninterrupted temporary supply of water and electricity supplied by the Employer, metered for payment of consumption by the sub-contractor.

JVDRIVER
RECEIVED
09 OCT 2017
Signed

WBH

TENDER SUMMARY & ANALYSIS

The Unity Terminal Kpone

Closing 12:00 06-Oct-17

Run Date 11:21 09-Oct-17

OWN COST ANALYSIS	OWN WORK IN RATES	p & g	TOTAL	% OWN COST
SALARIES		14 101 887	14 101 887	18.3%
LABOUR	5 753 657	2 362 202	8 115 858	10.5%
OVERHEADS / EST		9 703 730	9 703 730	12.6%
PLANT & FUEL	144 788	4 355 016	4 499 804	5.8%
FORMWORK	3 566 098	511 968	4 078 066	5.3%
MATERIALS	36 495 587		36 495 587	47.4%
	45 960 130	31 034 803	TOTAL 78 994 933	100.0%

OWN COST TO TOTAL COST → 15.5%

TENDER FINALIZATION

	VALUE R'000	ADJ	% PROFIT	PROFIT
OWN WORK	45 960		17.0%	7813
SUBCON	114 672		12.0%	13761
ATTENDANCE / PLUG RATES				
BUDG AMOUNTS	250 386		15.0%	37558
PROV SUMS	54 700		14.5%	7931
ADJs				
NET BILL	465 718			
p & g 6.7%	31 035		12.5%	3879
NET TOTAL	496 753	*Pr / Sal*		
PROFIT *14.3%*	70 943	*5.03*		70943
TOTAL	567 695	*Duration*	*15.75 mths*	
ESCALATION		*Av Turnover*		*36044.1*
RISK				
GROSS	567 695	*Excl VAT*		*per mth*
CLIENT CONTING		*p&g Running Cost*		*1688.0*
				per mth
TOTAL EXCL VAT	567 695			
VAT 14%	79 477	*Gross Bldg Area*		*22978*
TENDER AMOUNT	647 173	*R28 165 per m2*		*m2*

FINAL CURRENCY

13.00

	VALUE R'000	ADJ	% PROFIT	PROFIT
OWN WORK	3 535			601.0
SUBCON	8 821			1 058.5
	19 260			2 889.1
PROV SUMS	4 208			610.1
ADJs				
NET BILL	35 824			
p & g	2 387			
NET TOTAL	38 212			
PROFIT	5 457			
TOTAL	43 669 % Esc m/u inc.			
ESCALATION				
RISK				
GROSS	43 669			
CLIENT CONTING				
TOTAL EXCL VAT	43 669			
VAT 14%	6 114			
TENDER AMOUNT	49 783			

Sell p & g R 2 686

Sell p & g / Gross - Sell p & g 6.6%

We hereby confirm that we are not aware of any anti-competitive or corrupt act in relation to this tender.

SIGNED DATE

ESTIM.

DIR.

M. D.

p & g / TOTAL COST = 31 035 / 496 753 = 6.2%

p & g / OWN WORK = 31 035 / 45 960 = 67.5%

p&g (Excl Lab) / Own Work +p&g = 28 673 / 76 995 = 37.2%

ADJUSTMENTS

OWN WORK	R'000	SUBCONTRACTOR	R'000
		S/C P&G'S	
TOTAL Own Work Adjs		TOTAL S/C Adj's	

COMPETITION

MBS

DESIMONE

PROF TEAM		
	CLIENT	JV Driver
	PROJECT MANAGER	JV Driver
	ARCHITECT	
	QUANTITY SURVEYOR	
	STRUCTURAL ENG	GIBB
	ELECT ENG	AKSA Group
	MECH ENG	

START DATE 09-Oct-17 COMPLETION 29-Mar-19

[redacted]

Unity Terminal Kpone - Tender Submission (Email #1)

Vicky Swarts to: sgarvey 2017/10/06 11:57 AM

Cc: Trevor Hayes

From: Vicky Swarts/NRTH/WBHO

To: sgarvey@jvdriver.com

Cc: Trevor Hayes/NRTH/WBHO@WBHO

Good day

Herewith our Tender submission for the Unity Terminal Kpone (001-JVD-017) project.

Due to size restrictions on our emails, the submission will be sent over several email..

All documents are numbered according to the attached Index.

Unity Terminal Kpone - Tender - Index.pdf

1. Cover Letter.pdf

2. WBHO Works Value.pdf

3.BOQ.zip

4.RFP Exhibit A (Form of Acknowledgement).pdf

Please confirm receipt of this email.

WBHO

RELY ON OUR ABILITY

Vicky Swarts
Tel 011-321-7212
Fax 086-693-7066
Cell 072-617-0544
Email vickys@wbho.co.za

[redacted]

Unity Terminal Kpone - Tender Submission (Email #2)

Vicky Swarts to: sgarvey 2017/10/06 12:00 PM

Cc: Trevor Hayes

From: Vicky Swarts/NRTH/WBHO

To: sgarvey@jvdriver.com

Cc: Trevor Hayes/NRTH/WBHO@WBHO

5. RFP Exhibit B (Bid Form).pdf

6. RFP Exhibit C (Request for Pricing).pdf

7. Program.zip

8. Proposed Organogram and CV's.zip

9.Addendums.zip

10. Pre-Qualification Questionnaire.zip

Please confirm receipt of this email.

WBHO

RELY ON OUR ABILITY

Vicky Swarts
Tel 011-321-7212
Fax 086-693-7066
Cell 072-617-0544
Email vickys@wbho.co.za

Unity Terminal Kpone - Tender Submission (Email #3)

Vicky Swarts to: sgarvey 2017/10/06 12:03 PM

Cc: Trevor Hayes

From: Vicky Swarts/NRTH/WBHO

To: sgarvey@jvdriver.com

Cc: Trevor Hayes/NRTH/WBHO@WBHO

11. Company Registration Documents.zip

13. Environmental.zip

14. Quality.zip

Please confirm receipt of this email.

WBHO

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[redacted]

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Vicky Swarts to: sgarvey 2017/10/06 12:03 PM

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[redacted]

Unity Terminal Kpone - Tender Submission (Email #4)

Vicky Swarts to: sgarvey 2017/10/06 12:03 PM

Cc: Trevor Hayes

12. H&S.zip

Please confirm receipt of this email.

WBHO

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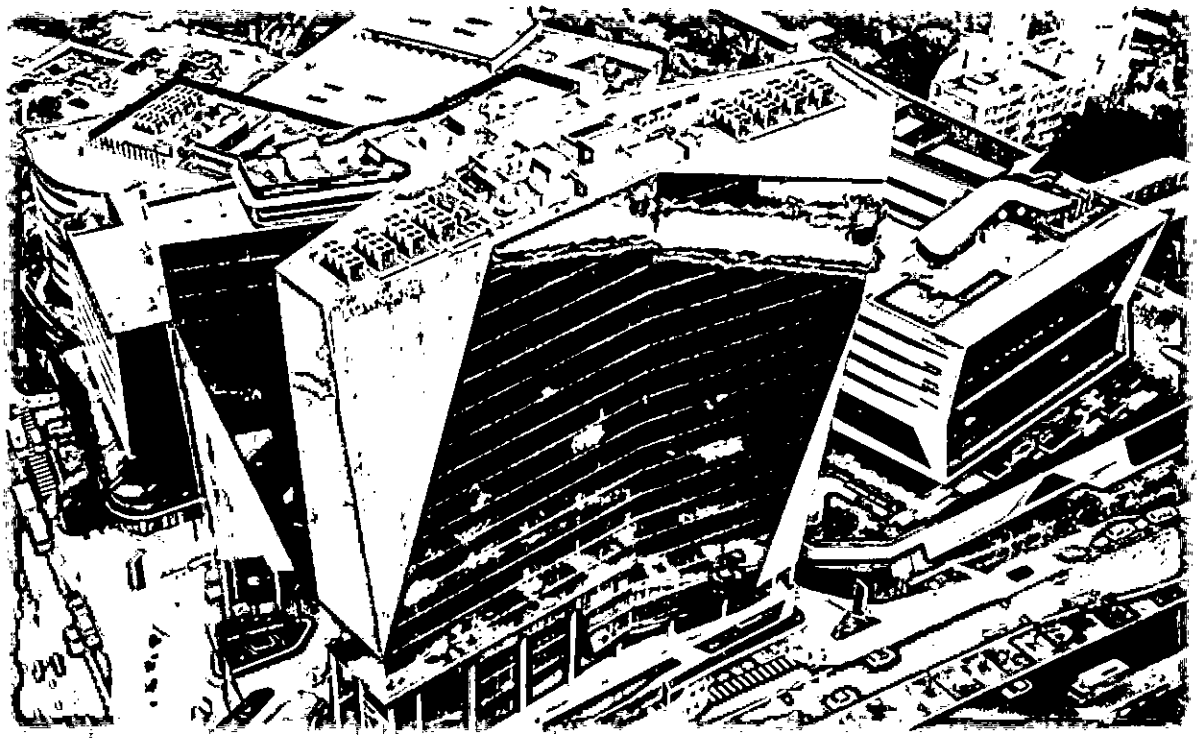
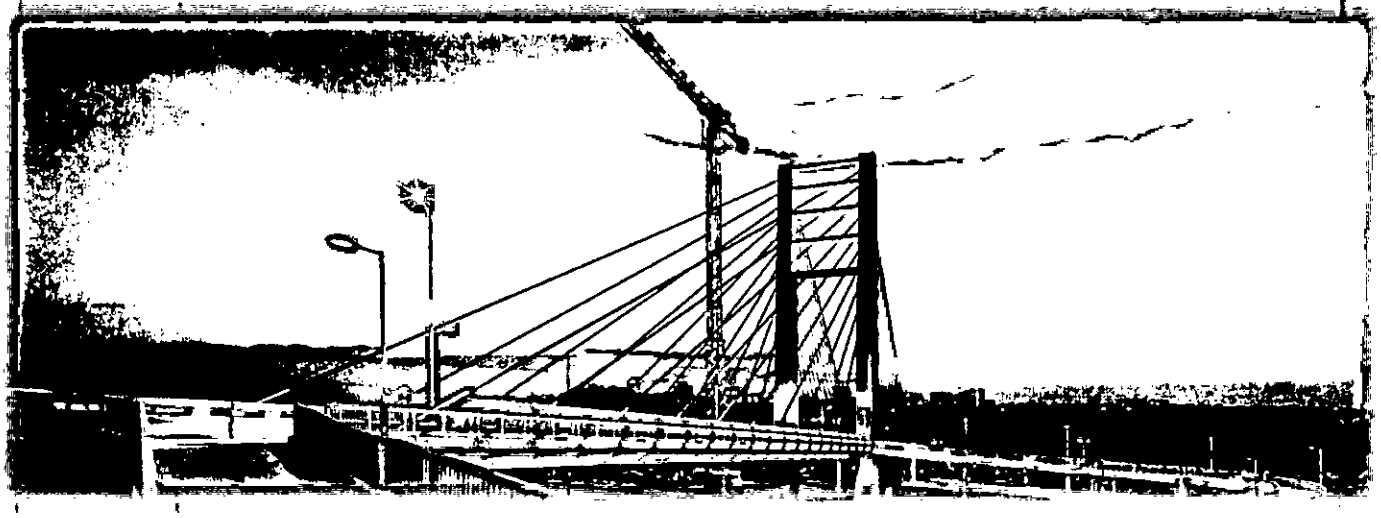
WBHO GHANA LIMITED

UNITY TERMINAL KPONE
001-JVD-017



6 OCTOBER 2017 @ 12:00



WBHO

WBHO GHANA LIMITED

UNITY TERMINAL KPONE
001-JVD-017

INDEX

WBHO

Kpone/ Rev 5

WBHO Construction (Pty) Ltd
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Please note the following with regarding our offer:

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1. Our pricing and P&G is based on the duration as per our attached program, however we believe we may be able to improve the program, and would discuss this during negotiation.

Contractual

2. We would require 5 copies of architects and engineer's drawings and 3 copies of services drawings.

3. We require sufficient and uninterrupted temporary supply of water and electricity supplied by the Employer, metered for payment of consumption by the sub-contractor.

Commercial

4. We request that payment not be made later than the 25th of the month in which it is due.

Subcontract Agreement

5. Recitals – Clause B and C: The requirement for a Back-to-back agreement is not acceptable at present. We have no knowledge of agreements in the prime contract.

6. Section II - Conditions of The Subcontract - Loss damages. This cannot be accepted in the current format.

7. Subcontract Agreement: Section III – Terms of Payment. We request that all terms relating to payment, retention and advance payment be negotiated.

8. Article 3 - Representatives, Clause 3.1: This clause is not acceptable and needs to be negotiated.

9. Article 4 - The Subcontractor's General Obligations, Clause 4.4: This clause is not acceptable. To be discussed and mutually agreed

10. Article 4 - The Subcontractor's General Obligations, Clause 4.5: To be discussed and mutually agreed.

11. Article 4 - The Subcontractor's General Obligations, Clause 4.6: "Fit for purpose" Our offer is not for Design and Construct. In so far as we are installing works designed and specified by others "Fit for Purpose" is not our liability.

12. Article 5 - JV Driver Provided Items and Access to the Project Site, Clause 5.1: Subcontractor will be responsible for receiving of, storage and installation. Not for delivery, damage due to delivery or demurrage charges.

13. Article 5 - JV Driver Provided Items and Access to the Project Site, Clause 5.2: To be discussed and mutually agreed

14. Article 8 - Assignment and Sub-Subcontracting, Clause 8.1 (b): This clause is not acceptable and needs to be agreed.

15. Article 8 - Assignment and Sub-Subcontracting, Clause 8.2: To be discussed and mutually agreed as there will be cost and time implications.

16. Article 12 – Termination: This clause is not acceptable. To be discussed and mutually agreed

17. Article 13 - Subcontract Price Terms of Payment: To be discussed and mutually agreed.

18. Article 14 – Security – This clause needs to be discussed and mutually agreed

19. Article 17- Liens - This clause needs to be discussed and mutually agreed.

20. Article 18 - Intellectual Property Rights - This clause needs to be discussed and mutually agreed.

21. Article 19- Liabilities and Indemnities – This clause in its current format is not acceptable.

22. Article 22 – Confidentiality – Although this clause is acceptable in principal, it requires to have an expiry date.

23. Article 24 - Resolution of Disputes – Need to agree a possible alternative dispute resolution, and fees and cost reimbursement.

24. Article 25 - Health, Safety, Security and Environment: WBHO conforms to ISO standards, the requirements in this article needs to be mutually agreed.

25. Insurance: Subcontractor cannot insure full value of the Prime Contract. Insurance cover is only for the value of construction of subcontractors works as tendered.

26. Q&A – Please clarify the percentage of mobilsation advance. This shall be discussed during the negotiation process. Noted.

27. Q&A – Bar & Coffee Shop: Kindly confirm that F.F. & E. are not included in our scope of work. Please clarify F.F. &E.? Furniture, Fittings and Equipment.

28. Q&A – Package 5 – Pre-Fabricated Steel Buildings: Kindly confirm that a technician employed by you will be on site in order to assist us during all the installation process of the metal structure and roofing sheet until yours complete satisfaction. This is correct for a period of 12 weeks. From our program it is required that the Technician needs to be available from February 2018 to July 2018.

29. Q&A – General Requirements: In the eventuality that we need to integrate the BoQ, can we update the existing one or should we add in a separate file? No, as explained in the Ste Visit the BoQ supplied is only for information and shall be used as a schedule of rates if design aspects are revised. The BOQ generated by the sub-contractor is for their use only and not relevant to the contract. Therefore the most revised BoQ supplied at Bidding Stage to each element of the scope of works should be returned at bidding time. This is not practical as your Bill of Quantities does not fully describe the scope of works. Our own Bill of Quantities has been included for clarification.

30. Q&A – Package 7 (MEP-Main Platform Landscape & Infrastructure) - There are a number of buildings not listed in Package 1 Buildings, namely; the Public Toilets (alongside the control tower), the Toilets - Staff 03, the Toilets Staff 02, and the Car Park Office. Under which package are these buildings being handled? As discussed in the Site Visit these buildings are currently not in the package but shall be negotiated with the successful sub-contractor. Noted.

31. Q&A - Package 7 (MEP-Main Platform Landscape & Infrastructure) - In your Cover letter you refer to the rates being fixed for the duration and as this is a lump sum price this follows logic, however in the Bidding Data Sheet document it states that the contract is subject to price adjustment. Please clarify. There is an escalation clause in the Prime Contract that shall be used for the works of the successful sub-contractor. Noted. All pricing is current base date September 2017. All price escalation will be negotiated.

32. Q&A – Package 7 (MEP-Main Platform Landscape & Infrastructure) - I understand that the successful bidder will be appointed under a sub-contract agreement with JV Driver. I trust that the Subcontract Agreement provided is complete and no further conditions are to be expected. Particular Conditions shall be drawn up with the successful sub-contractor to ensure they all reconcile with a Back to Back status with the Prime Contract. These shall be negotiated during the two week negotiation period. Noted.

33. Q&A - Container Freight Station: Structure BOQ not included in tender documents. Could we please have such? As discussed in the Site Visit Meetings these works are being carried-out by others. Noted.

34. Q&A – Car Park Office: Architectural BOQ received as part of Bidders Info 1, but no other BOQ's have been made available. The Car Park Office in not included in any package. This shall be negotiated with the successful bidder. Noted.

35. Q&A – Electricals: As stated in Paragraph 6.3 of "TR15009_PE_DOC_BU_EL_01_Descriptive Document", buildings will have embedded photovoltaic supplies. There aren't any drawings/specifications describing the PV's. Please note that there is NO requirement for Photovoltaic Panels. Noted.

36. Q&A – What format should the BOQ's that have to be submitted with the Bid be in, either Excel or pdf. We confirm that the return of the most recently revised BOQ relating to a particular scope of works should be in Excel Format. Furthermore these BoQ's shall not at this stage form part of the Contract Documents and shall be used only as a schedule of rates and assist in the negotiation process. Any BoQ's that Bidders generate for their pricing of the LUMP SUM during the Bidding process should not be returned with the Bidding Documents.

Our Budget Lump Sum offer is based on the drawings, specifications, clarifications to questions and our Bill of Quantities. However our included Bill of Quantities may exclude or have missed some items and should these become apparent during negotiation stage will be measured and added to our offer.

37. The mechanism of consigning Duty and Tax free imports needs to be negotiated. The risk associated with time and cost needs to be addressed.

38. Program: We have assumed that the platform will be complete upon handover of site.

39. Bar & Coffee Shop: We have not allowed for any kitchen equipment.

40. We have allowed for 20mm internal plaster and 30mm external plaster as per wall detail issued with Bidders Information No.5

41. As per your Q&A document issued with Bidders information No.8, we have not allowed for any earthworks to package 1, 3 and 5. We have however allowed for a compaction layer, a stone drainage layer under floors.

42. As the earthworks are performed by others we request a discussion regarding concrete waste cast against excavated surfaces where over excavation has occurred.

43. We have allowed for Torch on waterproofing to flat roofs with Lamba board insulation anchored by a layer of 50mm stone.

Main Platform, Landscape and Infrastructure: Water supply and Firefighting ring

44. Clause 5.5 - Traffic Regulation: We have based our pricing on exceeding the maximum length of open trench that are open. It is our intention to have four work fronts, nl. Excavation, bedding, pipe installation and backfilling. All four these fronts are dependent on the required daily production. No allowance was made to complete a section of the trench before proceeding to the next 50m section.

45. Clause 7.1 - Materials and Goods to be used for the works: WBHO based our bid on the purchase of certain materials at a certain rate. In the event that the Engineer reject the tender based material, the Engineer will be liable for any additional costs to purchase from the Engineer preferred supplier.

46. Clause 8.3.1.1.1 – Excavation General: Our rates for excavation in general does allow for all the items listed on page 35, except for any sheeting / piling and reinstatement of existing services. The costs associated with the identification, locating, exposing and confirming will be the Clients costs.

47. Clause 8.3.1.1.2 - Dimension of Trenches: No allowance are made to complete a section of trench before proceeding to the next 50m section.

48. Clause 8.3.1.1.3 - Bedding: No allowance was made to sieve or import commercial bedding material. All bedding material will be from trench excavations.

49. Clause 8.3.1.1.5 – Backfilling: No allowance was made to sieve or import commercial backfill material. All backfill material will be from trench excavations.

50. Clause 8.3.1.1.8 – Soil Classification: Excavated soft material from trenches shall not include fieldstones and blocks in excess of 0.25m³ and not 0.75m³ as per the specification. A boulder in excess of 0.25m³ will exceed trench widths and thus would require breaking by mechanical means. This will therefore constitute hard material. The payment of hard material will be in excess of the rates as per the BOQ and therefore for the Clients account.

51. Clause 8.3.1.2.2 - Laying of Pipes General: No concrete encasement of sewer lines, due to the proximity to water pipelines, are envisaged for the contract. In the event that this scenario does occur, the costs would be for the Clients account.

52. Clause 8.3.1.2.6 - Crossing with Existing Mains: The costs associated with the identification, locating, exposing, confirming and relocation of services will be borne the Clients.

53. Fencing around Car park terminal: The fencing surrounding the car parking areas are not within the provided BOQ's. Our estimates for the fencing are $ 150/m installed. We have assumed it will form part of future works.

54. Cement Stabilized Layers: We have allowed 4% cement content for the stabilization of the pavement layers. This is in accordance with the Republic of Ghana, Standard Specification for Road and Bridge works.

55. Commercial Water: The Client will provide water for the construction of the layer works at no cost to the Contractor.

56. Diesel: We require diesel to be treated as a special material. Diesel will therefore be subject to rise and fall. Our bid is based on $ 1.00 / lt and the estimated usage is.

Should you require any clarification or additional information, please do not hesitate to contact the undersigned.

Yours faithfully
WBHO CONSTRUCTION (PTY) LTD

D Calitz
Authorised Signatory

Unity Terminal Kpone: Design & Construction of a Container Handling and Devanning Terminal

JVDRIVER

Lump Sum Price for Individual Packages:

Packagedescription	Package No.	Lump Sum Price	
Buildings	1	$	8 882 696
Storm Water & Sewer Drainage/Water & Fire Mains	2	$	2 962 635
Retaining Wall	3	$	2 613 712
Heavy Duty Pavement	4	$	11 236 511
Pre-Fabricated Steel Buildings	5	$	4 739 750
Access Road	6	$	4 654 466
MEP	7	$	2 597 173
Subcontractor P&G		$	2 686 000
External Works P&G		$	3 295 900
	Total of Contract:	**$**	**43 668 842**

WBHO Selling Rates for The Unity Terminal, Kpone

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	KPONE UNITY TERMINAL				
1	Main Contractor Preliminaries	Item	1	2,685,375.00	2,685,375.00
	PACKAGE 1 - BUILDINGS				
5.1.	*CUSTOMS HALLS AND GPHA OFFICES*				
	BILL NO 1				
	EARTHWORKS (PROVISIONAL)				
	SITE CLEARANCE				
	Site clearance				
	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	0	4.59	Rate only
	EXCAVATIONS ETC				
	Excavation in earth Not exceeding 2m deep				
	Trenches	m3	0	9.02	Rate only
	Footings	m3	0	9.02	Rate only
	Extra over bulk excavations in earth for excavation in				
	Soft rock	m3	0	27.05	Rate only
	Hard rock	m3	0	45.08	Rate only
	Extra over all excavations for carting away				
	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	0	5.80	Rate only
	Risk of collapse of excavations				
	Sides of bulk excavations not exceeding 1,5m deep	m2	0	4.51	Rate only
	Keeping excavations free of water				
	Keeping excavations free of water other than subterranean water	Item	0	1,932.00	Rate only
	FILLING ETC				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to ?% Mod AASHTO density Backfilling to trenches, holes, etc	m3	0	5.80	Rate only
	Filling of graded crushed stone , consolidated				
	Under floors etc	m3	315	45.08	14,200.20
	Compaction of ground surfaces				
	Compaction of natural or excavated ground surface under floors etc	m2	1,575	2.58	4,063.50
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
	To bottoms and sides of trenches etc	m2	1,575	1.29	2,031.75
	BILL NO 2				
	CONCRETE FORMWORK AND REINFORCING				
	Concrete				
	Reinforced in situ concrete grade C25/30 :				
	Bases	m3	286	158.09	45,213.74
	Surface beds on waterproofing	m3	237.00	153.74	36,436.38
	Slabs including beams and inverted beams	m3	1,539.00	163.52	251,657..
	Downstand Beams	m3	8	154.51	1,236.08
	Stairs including landings, beams and inverted beams	m3	40.00	155.63	6,225.20
	Inverted Beams	m3	280.00	158.98	44,514.40
	Walls	m3	379	158.98	60,253.42
	Strip Footings	m3	101.00	158.09	15,967.09
	Columns	m3	172.00	158.98	27,344.56
	Lift Shaft Walls	m3	64.00	158.98	10,174.72
	Plain in situ concrete grade C12/15				
	Blinding concrete - 50 mm	m2	27	138.25	3,732.75

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Finishing top surfaces of concrete smooth with a power float				
5.1/	Surface Bed & Slabs	m2	7,805.00	3.14	24,507.70
	Formwork				
	Rough Formwork to Sides				
	Bases	m2	408	18.44	7,523.52
	Strip Footings	m2	168	18.44	3,097.92
	Inverted beams above concrete	m2	1,867	22.41	41,839.47
	Walls and retaining walls not exceeding 3.5m high and not exceeding 5m high	m2	1,397	19.51	27,255.47
	Walls and retaining walls exceeding 3.5m high and not exceeding 5m high	m2	1,131	25.09	28,376.79
	Inner and Outer face of shaft walls with a total height not exceeding 3.5m	m2	72	25.09	1,806.48
	Inner and outer face of shaft walls with a total height exceeding 3.5m and not exceeding 5m	m2	402	28.58	11,489.16
	Rectangular columns with total height not exceeding 3.5m above bearing level	m2	732	19.77	14,471.64
	Rectangular columns with total height exceeding 3.5m and not exceeding 5m above bearing level	m2	1,261	21.15	26,670.15
	Edges, risers, ends and reveals not exceeding 300mm high or wide				
	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	2,487	5.37	13,355.19
	Edges, risers, ends and reveals exceeding 300mm high or wide	m2	12	17.89	214.68
	Rough formwork to soffits				
	Slabs propped up not exceeding 3.5m high	m2	1,582	20.27	32,067.14
	Slabs propped up exceeding 3.5m high	m2	4,644	22.09	102,585.96
	Stairs with sloping soffits	m2	34	31.46	1,069.64
	Landings in stairs	m2	42	31.46	1,321.32

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Rough formwork to sides and soffits				
	Beams propped up not exceeding 3.5m	m2	87.00	24.60	2,140.20
	Boxing in smooth formwork to form				
	20x20 Chamfers along top or bottoms edges		1,947	1.47	2,862.09
	20x20 chamfer vertically along edges		256	1.47	376.32
	High Tensile steel reinforcement to structural concrete work				
	10mm to 32 mm Diameter bars	t	453	1,290.81	584,736.93
	Fabric reinforcement				
	Type 245 mesh fabric reinforcement in concrete surface beds, slabs, etc	m2	1,579	5.47	8,637.13
	MOVEMENT JOINTS, ETC.				
	Saw cut joints				
	3 x 60mm Saw cut joints in top surfaces of concrete surface bed	m	526	2.25	1,183.50
	PRECAST CONCRETE				
	Precast concrete copings				
	Capping stone - Placed on top of upstand beam	m	136.00	72.43	9,850.48
	Capping stone -Placed at edge of fascade	m	93.00	72.43	6,735.[illegible]
	Carried forward				**4,162,600.94**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**4,162,600.94**
	BILL NO 3				
	MASONRY				
	BLOCKWORK				
	SUPERSTRUCTURE				
	Blockwork in class II Mortar				
	100mm Walls	m2	857.00	52.29	44,812.53
	150mm Walls	m2	1,320.00	57.81	76,309.20
	200mm walls	m2	24	73.63	1,767.12
	300mm Cavity Walls	m2	1,998.00	80.24	160,319.52
	BLOCKWORK SUNDRIES				
	Wall bonding ties				
	500mm hoop iron with 2 shots into concrete built horizontally into walls	no	2,414	3.01	7,266.14
	High tensile steel reinforcement to Blockwork				
	10mm to 32mm Diameter bars	t	0.74	1,290.81	955.20
	Expansion joints in brickwork				
5.1/	10mm Sondor Jointex not exceeding 300 mm high between blockwork and concrete	m	377	1.42	535.34
	WATERPROOFING				
	One layer of 350 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
	In walls	m2	0	0.99	Rate only
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
	Under Surfacebeds	m2	1,575	0.97	1,527.75
	One layer of "Bituthene 3000" waterproofing				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Against lift pit walls	m2	200.00	96.88	19,376.00
	Wall mate				
	Against wall	m2	324	37.63	12,192.12
	Geotextile Membrane				
	On flat roofs	m2	1,530.00	27.44	41,983.20
	Asphalt Fabric				
	Against Walls	m2	324	47.60	15,422.40
	Against Floors	m2	1,530.00	47.60	72,828.00
	Torch on				
	Behind retaining walls	m2	524.49	47.60	24,965.72
	ROOF AND WALL INSULATION				
	75mm Thick Lamdaboard PIR insulation				
5.10	On roof over waterproofing	m2	1,530	22.40	34,272.00
	GRAVEL				
	19mm gravel laid to falls (gradient of 1.5%)	m2	1,530.00	1.29	1,973.70
	Carried forward				**4,679,106.88**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**4,679,106.88**
	BILL NO 5				
	CARPENTRY AND JOINERY				
	DOORS ETC				
	Timber Doors				
	Timber Door Type 1	no	16	127.75	2,044.00
	Timber Door Type 2	no	16	135.76	2,172.16
	Timber Door Type 3	no	30	416.83	12,504.90
	Timber Frames				
	Timber Door Frame Type 1	no	16	99.02	1,584.32
	Timber Door Frame Type 2	no	16	99.02	1,584.32
	Timber Door Frame Type 3	no	30	99.02	2,970.60
	STAIRS				
	Handrails				
	Handrails in Kambal wood.	m	7	347.76	2,434.32
	Vanities				
5.11	Vanity tops - 600mm width	m	12	364.00	4,368.00
	Carried forward				**4,708,769.50**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**4,708,769.50**
	BILL NO 6				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	SUSPENDED CEILINGS				
	Type CE1 Ceilings to stairs				
	stairs 1,2,3	m2	237	13.61	3,225.57
	Waterproof false ceilings in plasterboard, KNAUF, consisting of KNAUF H water-repellent plasterboard with 12.5mm thick, single layer, with joints bus through its own mass KNAUF LEICHT, paint with a coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat. *Fixed plates the hidden suspension structure, through suspension profiles and hangers. Include profile of the own backtack of the system forming a 1cm wing at the junction with the walls / vertical elements.*				
	Ceilings suspended not exceeding 1m below concrete soffits (Type CE5)	m2	172.00	25.46	4,379.12
	KNAUF plasterboard false ceiling, 12.5 mm thick, total roof rail with its own mass and paint with one coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat 58730.Include hidden suspension structure and hangers, profile of roofing to the walls / vertical elements in "L" hidden, type Expamet in stainless steel forming wing of 1cm in the junction with the walls / vertical elements				
	Ceilings suspended not exceeding 1m below concrete soffits (Type CE4)	m2	4,005.00	28.78	115,263.90
	DRYWALL PARTITIONS				
	Paneling in 22mm thick water-repellent MDF, laminated to melamine type TAFILAM ref. L 167, dark gray. Fixing system not visible on wooden bars, including the regularization of walls with fine sanded				
	Partitions 4m high with bottom and top tracks plugged	m	72	136.42	9,822.24
	Carried forward				**4,841,460.33**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**4,841,460.33**
	BILL NO 7				
	FLOOR COVERINGS, WALL LININGS, ETC				
	FLOOR COVERINGS				
	Tecnitiles access floor type raised floorFinished flooring TECNITILES, acess floor, Type Raised Floor, in modules of Stoneware Finisches, support structure in galvanized steel, for a total height of 17.5 cm, consisting of single pedestals - PMI, ready to receive the stoneware in 60 x 60 cm, self-draining tiles. *Include all the locking accessories of the floor structure and trim against the peripheral walls in 6 x 6 cm galvanized angles.* *Aluminum Foil Underlaymen*				
	On floors	m2	3,714.00	319.20	1,185,508.80
	Stoneshield SLT finish from STONHARD with 3 mm thick, Gray Winter color, with non-reflective matte transparent sealant, medium texture.				
	On treads and risers of stairs	m2	306	77.50	23,715.00
	Finished, thin-walled screed, roscone type with the application of one coat of Hempel Acrylic Paint 58360, diluted with 10 to 15% water and one coat of Hempel Acrylic Paint 58360, diluted with 5% water				
	On floors	m2	26	9.56	248.56
	TECNODECK, in strips with 140 mm width and 25 mm height, variable length between 2 and 4 meters in TROPICALBROWN color, including fixing and support system (slats and stainless steel clips) own by the manufacturer represented by Tecnodeck lda On floors (balcony)	m2	33	410.88	13,559.04
	SKIRTINGS, NOSINGS, ETC				
	stainless steel, with concealed attachements, 10cm high, Include profile for plaster, ref 563 in galv iron (SB1)				
	skirtings	m	201.00	15.47	3,109.47

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Stoneshield SLT finish from STONEHARD, 3 mm thick, Winter Gray color, 10 cm high, with clear, non-reflective, medium-textured sealant. It includes all the work and prescriptions indicated by the manufacturer. Include profile for plaster, to shape wing, ref 579 of 13mm, in galvanized iron, Expamet products, at the junction with the wall. (SB2)				
	skirtings	m	339	11.20	3,796.80
	Painting, 15 cm high, two coats of Hempel Acrylic Ink 58360 from Hempel. Include profile for plaster, to shape wing, ref 579 of 13mm, in galvanized iron, Expamet products, at the junction with the wall. skirtings	m	21	9.66	202.86
	Melamine veneered panel base, type TAFILAM ref L167, dark gray., Includes profile to form wing (see drawings				
	skirtings	m	735	19.38	14,244.30
	Type SB4 Skirtings				
	skirtings	m	72	22.81	1,642.32
	40x40x4mm galvanised iron angles				
	Stair noisings	m	294	20.53	6,035.82
	Carried forward				**6,093,523.30**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**6,093,523.30**
	BILL NO 8				
	IRONMONGERY				
	Ironmongery sheet				
	Passive & Active Panic Bar	no	32	748.38	23,948.16
	Panic Bar	no	4	509.02	2,036.08
	Door Closers	no	45	415.21	18,684.45
	Kick Plate	no	0	29.06	Rate only
	Lever Handles Set	no	73	58.09	4,240.57
	Thumb Turn	no	30	24.54	736.20
	Dead Lock	no	44	32.76	1,441.44
	Knob Cylinder	no	0	38.48	Rate only
	Door Stop	no	44	20.06	882.64
	Alu Flush Bolt	no	1	39.41	39.41
	Dust Keep	no	1	27.26	27.26
	Pull Handles	no	0	54.04	Rate only
	Hinges	no	150	21.23	3,184.50
	Bathroom Fittings				
	SANITANA suspended toilet seat NEXO line, seat with sealed cover and hinges in stainless steel, all in white color and including all fixings.	no	30.00	571.04	17,131.20
	Urinal mural, Sanitana color white line CAPRI	no	6.00	431.38	2,588.28
	Washbasin VALADARES HANDICAP line, 665x570x240	no	36.00	210.45	7,576.20
	Mixing tap with single lever and automatic discharge valve, ROCA series LOGICA ref. 5261641JO, FIN. chrome.	no	36.00	662.29	23,842.44
	Kombifix Built-In Flush Mount with Stainless Steel Wall Mount	no	30.00	499.07	14,972.10
	Flushometer ROCA, AQUALINE ref. 506902010	no	12.00	545.49	6,545.88

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Siphon bottle square "bellavista" ref: 7203, w / chrome finish	no	30.00	65.17	1,955.10
	SANIFLOW automatic hand dryer, ref. E88ACS	no	18.00	873.43	15,721.74
	BOBRICK Liquid Soap Dispenser, B-822 Basin-Mounted Series	no	30.00	304.01	9,120.30
	Toilet paper holder, Mediclinics M-783 CS.	no	30.00	239.81	7,194.30
	Wall stand JNF ref. IN169	no	30.00	230.22	6,906.60
	Plate pictograma, MALE, outside the door, in stainless steel, ref. IN401 of JNF, fastenings by adhesive.	no	6.00	7.15	42.90
	Plate pictograma, FEMALE, outside the door, in stainless steel, ref. IN401 of JNF, fastenings by adhesive	no	6.00	7.15	42.90
	Carried forward				**6,262,383.95**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**6,262,383.95**
	BILL NO 9				
	METALWORK				
	METALWORK (Moved from Ironmongery)				
	Galvanised steel coping	m	135.10	223.44	30,186.74
	STEEL STAIRS				
	Structure in HEB and UPN steel profiles that in roller skates are bent by roller system. Skid floor and porch in almond steel plate with 5mm thickness. Steps in sheet steel with 5mm thickness, according to the details				
	Emergency stairs	no	2	5,600.00	11,200.00
	STEEL BALUSTRADING				
	Balusters consisting of plumb bars in steel bars 50x10mm thickness and fixing bases in steel bar with 110x50x15mm thickness, fixing with steel screws with 'breast' type nuts (emergency stairs)	m	7	571.20	3,998.40
	Balusters consisting of plumb bars in steel bars 50x10mm thickness and fixing bases in steel bar with 110x50x15mm thickness, fixing with steel screws with 'breast' type nuts (Stairs 1,2,3,4)	m	228	571.20	130,233.60
	Steel Frames				
	Steel Frame Type 1	no	1	868.63	868.63
	Steel Frame Type 2	no	4	526.72	2,106.88
	Steel Frame Type 3	no	2	821.92	1,643.84
	Steel Frame Type 4	no	2	821.92	1,643.84
	Steel Frame Type 5	no	3	821.92	2,465.76
	Steel Doors				
	Steel Door Type 1	no	1	36.62	36.62
	Steel Door Type 2	no	4	26.86	107.44
	Steel Door Type 3	no	2	26.86	53.72
	Steel Door Type 4	no	2	26.86	53.72

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Steel Door Type 5	no	3	26.86	80.58
	ALUMINIUM				
	SHOPFRONTS AND FACADES	Sum	1	688,394.67	688,394.67
	Carried forward				**7,135,458.39**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**7,135,458.39**
	BILL NO 10				
	PLASTERING				
	SCREEDS				
	15mm thick screeds	m2	3,714.00	3.59	13,333.26
	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
	On walls	m2	4,126.00	6.19	25,539.94
	On projecting and isolated columns	m2	255.00	6.26	1,596.30
	On narrow widths not exceeding 300mm wide	m2	27.00	6.29	169.83
	EXTERNAL PLASTER				
	On walls	m2	2,495.00	7.35	18,338.25
	Carried forward				**7,194,435.97**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**7,194,435.97**
	BILL NO 11				
	TILING				
	WALL TILING				
	"Margres" type tiles, underground series, 60x60, colour carbon UG4				
	On walls	m2	1,083.20	109.26	118,350.43
	On narrow widths not exceeding 300mm	m2	15.84	114.06	1,806.71
	Fair exposed cutting and fitting around pipe not exceeding 100mm external diameter	No	66.00	3.60	237.60
	FLOOR TILING				
	"Margres" type tiles, underground series, 60x60, colour carbon UG4				
	On floors & landings	m2	182.00	109.26	19,885.32
	Fair exposed cutting and fitting around pipe not exceeding 100mm external diameter	No	66.00	3.60	237.60
	Carried forward				**7,334,953.63**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**7,334,953.63**
	BILL NO 12				
	GLAZING				
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	Mirror crystal with 700 x 1200 x6mm thickness, with anti-humidity treatment, with 4x fixings ORIGINAL VOLA ref. T2, satin stainless stee				
	Mirror 700 x 1200mm high	No	36.00	89.38	3,217.68
	Carried forward				**7,338,171.31**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**7,338,171.31**
	BILL NO 13				
	PAINTWORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Two-coat paint based on aqueous emulsion of vinylic copolymer, type HEMPEL HEMPAMUR 58P80, on fine plaster or plaster plaster, in color to be defined by Architecture. - Support: Clay brick masonry and Uncoated concrete walls and pillars.				
	Walls	m2	4,153.00	5.62	23,339.(
	ON CONCRETE				
	Uncoated concrete, painted with two coats of Hempelmat 58730, from Hempel. Include cleaning of all concrete irregularities and filling of bubbles in order to obtain a smooth surface.Surface preparation according to the manufacturer's specifications (CE1)				
	Slab soffits	m2	1,405	8.40	11,802.00
	ON METAL SURFACES				
	1 coat Hempadur primary 15550 and two coats Hempalin enamel 52140 (colour to define)				
	Door frames	m2	16.00	9.60	153.60
	1x primary high adhesion epoxy HEMPADUR 15550 with 50?m thick. 2x HEMPATHANE polyurethane enamel FINISH 55210, color RAL7012 50% matte, with a thickness of 50Um per coat				
	stair balustrades	m2	274	9.60	2,630.40
	ON WOOD SURFACES				
	Dekordor HD colours, laminate finish, hard wearing, (Colour to define)				
	Doors	m2	515.00	8.31	4,279.65
	Door frames etc	m2	67.00	8.87	594.29
	African Kambal wood floor with 20mm thick				
	Skirtings, rails, etc not exceeding 300mm girth (wood handrails)	m	7	5.60	39.20

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	ON PLASTERBOARD SURFACES				
	one coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat 58730. (CE4)				
	On Ceilings	m2	4,005.00	5.21	20,866.05
	one coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat 58730. (CE5)				
	On Ceilings	m2	172.00	5.21	896.12
	ON EXTERNAL FLOATED PLASTER SURFACES				
	two-coat paint from Hempelmat 58730 from Hempel. Include cleaning of all concrete irregularities and filling of bubbles in order to obtain a smooth surface.				
	Walls	m2	2,495.00	8.12	20,259.40
	ON ROAD MARKINGS				
	Parking lanes	m	378	2.80	1,058.40
	Arrows	No	2	50.40	100.80
	Numbers	No	56	50.40	2,822.40
	Carried forward				**7,427,013.48**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**7,427,013.48**
	Bill No 14				
	MECHANICAL - LIFT				
5.10	Otis Lift- 2000E		1	122,248.00	122,248.00
	MEP				
	BILL NO 1				
	MEP - ELECTICAL INSTALLATIONS				
	POWER SUPPLY				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, MD, CTG and CTE, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work.				
	Ph+PEN: 3x(2x300Cu) + 2x300Cu (XAV)	m	250.00	454.42	113,605.00
	XG-R3x70+2G35	m	30.00	57.56	1,726.80
	XG-R3x35+2G16	m	30.00	30.59	917.70
	XG-R5G16	m	40.00	19.05	762.00
	XG-R3G16	m	25.00	13.22	330.50
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing parts				
	VD 125	m	2,000.00	21.80	43,600.00
	VD 90	m	5.00	14.57	72.85
	VD 50	m	5.00	8.10	40.50
	VD 40	m	10.00	8.10	81.00
	Supply and assembly of equipment including all necessary accessories to its perfect application in accordance with the drawings and writing parts				
	General cut-off button	un	9.00	42.82	385.38
	CABLE TRAY				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Supply and installation, cable tray with cover and all accessories required for installation, including brackets.				
	100x60 mm (ceiling)	m	720.00	19.48	14,025.60
	100x60 mm (floor)	m	1,670.00	13.47	22,494.90
	Supply and installation of floor boxes, and all accessories required for installation.				
	Outlets pavement box	un	519.00	149.46	77,569.74
	ILLUMINATION				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	XG-R3G1.5	m	8,500.00	2.60	22,100.00
	LiYCY 2x1.5	m	3,400.00	0.97	3,298.00
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 16	m	1,000.00	1.47	1,470.00
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	940.00	2.77	2,603.80
	Supply and installation of lighting fixtures, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	T1	un	513.00	150.66	77,288.58
	T2.2300	un	6.00	382.47	2,294.82
	T2.2700	un	12.00	412.46	4,949.52
	T2.3600	un	6.00	538.03	3,228.18
	T2.4000	un	1.00	594.94	594.94
	T2.4700	un	1.00	621.49	621.49

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	T2.5100	un	1.00	646.61	646.61
	T2.7000	un	6.00	1,049.35	6,296.10
	T2.7200	un	6.00	1,070.50	6,423.00
	T3	un	33.00	142.53	4,703.49
	T4.1	un	43.00	867.78	37,314.54
	T5.7400	un	6.00	971.73	5,830.38
	T6	un	8.00	177.63	1,421.04
	S1	un	242.00	81.04	19,611.(
	S2	un	28.00	155.95	4,366.60
	S3	un	32.00	81.04	2,593.28
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation switch	un	18.00	16.34	294.12
	Embedded installation chandelier switch	un	5.00	16.34	81.70
	Embedded installation ladder switch	un	38.00	16.34	620.92
	Motion Detector	un	25.00	91.40	2,285.00
	OUTLETS				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	XG-R3G2.5	m	38,500.00	4.05	155,925.00
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 20	m	7,000.00	1.47	10,290.00
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Square junction box 80x45x80	un	30.00	2.77	83.10
	Mounting box	un	20.00		0.00
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation Schuko plug with lid and protected sockets	un	30.00	14.64	439.20
	Surface installation Schuko waterproof plug with lid and protected sockets	un	2.00	12.43	24.86
	Pavement box installation Schuko plug with protected sockets	un	3,138.00	6.97	21,871.86
	STABILIZED OUTLETS				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	XG-R3G2.5	m	26,200.00	4.05	106,110.00
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 20	m	4,700.00	1.47	6,909.00
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	25.00	2.77	69.25
	Mounting box	un	48.00		0.00
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation Schuko plug with protected sockets	un	48.00	19.86	953.28
	Pavement box installation Schuko plug with protected sockets	un	2,100.00	13.57	28,497.00
	ELECTRICAL BOARDS				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Supply and installation of Electrical Boards according to the indicated drawings, single-line diagrams, General Technical Conditions, Technical Conditions and Special Specification, including all associated accessories to their proper funcioning				
	CUSTOMS HALLS B.E.B.	un	1.00	302.40	302.40
	CUSTOMS HALLS MAIN E.B.	un	1.00	201.60	201.60
	CUSTOMS HALLS G.F.E.B.	un	1.00	201.60	201.60
	CUSTOMS HALLS UPS G.F.E.B.	un	1.00	100.80	100.80
	CUSTOMS HALLS L.1.E.B.	un	1.00	201.60	201.60
	CUSTOMS HALLS UPS L.1.E.B.	un	1.00	100.80	100.80
	CUSTOMS HALLS L.2.E.B.	un	1.00	201.60	201.60
	CUSTOMS HALLS UPS L.2.E.B.	un	1.00	100.80	100.80
	UPS 80 kVA TRI/TRI	un	4.00	29,112.53	116,450.12
	ACCESS CONTROL / INTRUSION				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	JY(ST)Y 1x2x0.8	m	1,900.00	1.41	2,679.(
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 16	m	200.00	1.47	294.00
	Supply and installation of access control equipment according to the indicated drawings, General Technical Conditions, Technical Conditions and Special Specification, including all associated accessories to their proper funcioning				
	Access Control Central	un	1.00	2,421.36	2,421.36
	Keyboard	un	6.00	193.95	1,163.70
	Proximity Reader	un	8.00	152.40	1,219.20

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Electromagnetic Retainer	un	6.00	353.01	2,118.06
	Call Button	un	6.00	54.16	324.96
	Dual Technology Detector	un	43.00	95.73	4,116.39
	Carried forward				**8,499,181.78**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,499,181.78**
	EARTHING NETWORK				
	Earthing Network				
	Copper coated steel tape 30X3mm	un	240.00	5.03	1,207.20
	Earth rods - 250?m 2m Æ5/8"	un	12.00	53.31	639.72
	Multifunctional connectors with intermediate plate ; Ø8-10, fl.30mm/; Ø8-10, fl.30mm	un	57.00	1.53	87.21
	Connector for steel Structures 5-19mm	un	36.00	2.55	91.80
	Rod to fl at conductor clamp	un	12.00	10.20	122.40
	Bus bar with 5 terminals	un	1.00	43.11	43.11
	Lightning rod				
	Early Streamer Emission 2,200Kg air terminal IONIFLASH CONNECT	un	1.00	876.96	876.96
	Attachable base mast	un	1.00		0.00
	Extension Mast – 1st section Total height = 4,00m	un	1.00		0.00
	Extension Mast – 2nd section Total height = 5,80m	un	1.00		0.00
	Extension Mast – 3th section Total height = 7,50m	un	1.00	187.49	187.49
	Bracket for wall mounting of the mast with separation of 150mm	un	3.00	12.76	38.28
	Bolt with antimony lead expansion peg	un	6.00	7.65	45.90
	Fixation of fl at or round conductor to mast	un	1.00	10.20	10.20
	Descent				
	Tin Plated Copper 30X2mm	un	60.00	16.96	1,017.60
	Plastic collar for Ø 5-11 round or 30mm flat conductors	un	180.00	2.55	459.00
	Surge counter IFLASH REPORT	un	1.00	231.84	231.84
	Earth test clamp with information plate	un	2.00	20.28	40.56

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Protection sleeve for down-conductor; 2m ; Ø 8-10mm/Fl.30mm	un	2.00	35.58	71.16
	Lightning rod electrode				
	Inspection pit	un	2.00	48.22	96.44
	Bus bar for inspection pit 215x40x5mm	un	2.00	45.66	91.32
	Tin Plated Copper 30X2mm	un	10.00	16.96	169.60
	Earth rods - 250?m 2m Æ5/8"	un	6.00	53.31	319.86
	Graphite earth rod	un	2.00		0.00
	Rod to fl at conductor clamp	un	8.00	10.20	81.60
	Crow's foot conector with intermediate plate	un	2.00	10.20	20.40
	Carried forward				**8,505,131.43**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,505,131.43**
	BILL NO 2				
	MEP - COMMUNICATIONS				
	CABLE TRAY				
	Supply and installation, cable tray with cover and all accessories required for installation, including brackets.				
	100x60 mm (ceiling)	m	720.00	19.48	14,025.60
	100x60 mm (floor)	m	1,670.00	13.47	22,494.90
	SOCKETS				
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	RJ45 embedded socket	un	61.00	22.46	1,370.06
	RJ45 pavement socket	un	2,116.00	16.18	34,236.88
	TELECOMMUNICATIONS CABINET				
	Supply and installation of telecom cabinet as Designed Parts, and writing parts, and all necessary materials and work				
	Telecom Individual Cabinet	un	3.00	14,402.28	43,206.84
	CABLES				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	UTP 4P CAT 6	m	76,200.00	1.41	107,442.00
	Carried forward				**8,727,907.71**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,727,907.71**
	BILL NO 3				
	WATER & SEWAGE				
	WATER SUPPLY AND FIRE FIGHTING RING				
	PIPELINE FOR WATER SUPPLY				
	Supply and installation of "HENCO" multilayer pipes in cold water tubing, embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	Ø50 mm	m	6.50	44.33	288.15
	Ø40 mm	m	48.50	32.74	1,587.89
	Ø32 mm	m	6.00	29.79	178.74
	Ø25 mm	m	22.00	19.02	418.44
	Ø20 mm	m	149.10	13.47	2,008.38
	Ø16mm	m	52.20	10.44	544.97
	Supply and installation of "HENCO" multilayer pipes in hot water tubing, embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	Ø20 mm	m	12.00	13.47	161.64
	Supply and assembly of HDPE PN10 f63 in branch connection, entrenched, including all earthworks, caution tape with stainless steel wires and any additional work:	gv	1.00	149.33	149.33
	CONNECTIONS / ACCESSORIES FOR WATER SUPPLY				
	Supply and assembly of Water Meter ø 63mm mounted in cabinet, including 2 DN50 Shut-Off Valves, any additional work and accessories:	un	1.00	1,025.64	1,025.64
	Supply and assembly of Shut-Off Valves, any additional work and accessories:				
	Ø25 mm	un	16.00	51.76	828.16
	Supply and assembly of tap with hose connector, any additional work and accessories:	un	3.00	46.80	140.40

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Supply and assembly of Electric Watter Heater Horizontal 30l, including 2 DN20 Shut-Off Valves, any additional work and accessories:	un	4.00	260.20	1,040.80
	PIPELINE FOR FIRE FIGHTING RING				
	Supply and installation of Black Steel pipes in fire water tubing,embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	ø 100	m	17.50	93.72	1,640.10
	ø 80	m	127.50	67.29	8,579.48
	ø 65	m	24.15	52.72	1,273..
	ø 50	m	26.20	32.83	860.15
	Supply and assembly of HDPE PN10 f110 in branch connection, entrenched, including all earthworks, caution tape with stainless steel wires and any additional work:	gv	1.00	268.80	268.80
	CONNECTIONS / ACCESSORIES FOR FIRE FIGHTING RING				
	Supply and assembly of Fire Hose Reel in Cabinet, including any additional work and accessories:	un	9.00	567.74	5,109.66
	Supply and assembly of Wet Riser, including any additional work and accessories:	un	15.00	385.43	5,781.45
	Supply and assembly of Breeching Inlet, including any additional work and accessories:	un	1.00	254.82	254.8
	Supply and assembly of Shut-Off Valves, any additional work and accessories:				
	Ø100 mm	un	1.00	584.72	584.72
	Supply and assembly of Gate Valves, any additional work and accessories:				
	Ø100 mm	un	2.00	451.11	902.22
	Carried forward				**8,761,534.84**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,761,534.84**
	BILL NO 4				
	DRAINAGE AND SEWAGE				
	PIPELINE FOR DRAINAGE				
	Supply and assembly of corrugated HDPE pipeline, entrenched, including all earthworks and any additional work:				
	ø 200	m	28.70	40.00	1,148.00
	ø 160	m	157.50	30.17	4,751.78
	ø 75	m	4.10	21.18	86.84
	Connecting to Drainage infrastructure of corrugated HDPE ø 250, with variable length, entrenched, including all earthworks and any additional work:	gv	1.00	2,240.00	2,240.00
	Connecting to Drainage infrastructure of corrugated HDPE ø 200, with variable length, entrenched, including all earthworks and any additional work:	gv	1.00	1,493.33	1,493.33
	CONNECTIONS / ACCESSORIES FOR DRAINAGE				
	Supply and assembly of roof gully ø 160mm, Coverage gutter	un	6.00	82.98	497.88
	Supply and assembly of roof gully ø 75mm, Coverage gutter	un	1.00	82.98	82.98
	Supply and assembly of Wall Outlet, including all earthworks and any additional work, including all earthworks and any additional work:	un	6.00	365.29	2,191.74
	Supply and assembly of cleaning plug, including all earthworks and any additional work:				
	ø 160 mm	un	9.00	40.96	368.64
	ø 200 mm	un	4.00	66.66	266.64
	ø 250 mm	un	1.00	173.14	173.14
	DOMESTIC SEWAGE PIPELINE				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Supply and assembly of DOMESTIC SEWAGE in corrugated HDPE pipeline, entrenched, including all earthworks and any additional work:				
	ø 160 mm	m	37.80	37.02	1,399.36
	ø 125 mm	m	96.50	33.75	3,256.88
	ø 110 mm	m	87.60	25.01	2,190.88
	ø 90 mm	m	27.30	22.04	601.69
	ø 75 mm	m	45.80	21.18	970.04
	ø 50 mm	m	60.80	14.52	882.[illegible]
	ø 40 mm	m	44.40	11.24	499.06
	Connecting to Domestic drainage infrastructure of corrugated HDPE ø160, with variable length, entrenched, including all earthworks and any additional work:	gv	3.00	1,194.67	3,584.01
	CONNECTIONS / ACCESSORIES FOR DOMESTIC SEWAGE				
	Supply and assembly of bowl siphon, including all earthworks and any additional work:	un	30.00	74.12	2,223.60
	Supply and assembly of floor inspection siphon, including all earthworks and any additional work:	un	16.00	93.72	1,499.52
	Supply and assembly of floor siphoned gully, including all earthworks and any additional work:	un	17.00	95.78	1,628.26
	Supply and assembly of Precast Concrete Sumpboxes including all earthworks and any additional work and accessories:	un	3.00	322.21	966.63
	Supply and assembly of Precast Concrete Manhole including all earthworks and any additional work and accessories:	un	2.00	322.21	644.42
	Supply and assembly of Concrete Oil Separator including all earthworks and any additional work and accessories:	un	1.00	322.21	322.21
	Supply and assembly of Pumping Station in Oil Separator including all earthworks and any additional work and accessories:	un	1.00		0.00

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Supply and assembly of Drain with metal grade V300, including all earthworks and any additional work:	m	7.00	431.23	3,018.61
	Supply and assembly of cleaning plug, including all earthworks and any additional work:				
	ø 160 mm	un	8.00	40.96	327.68
	ø 125 mm	un	6.00	33.29	199.74
	ø 110 mm	un	6.00	21.57	129.42
	Carried forward				**8,799,180.64**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,799,180.64**
	BILL NO 5				
	MEP - FIRE PROTECTION				
	AUTOMATIC FIRE DETECTION SYSTEM				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writings Parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	JYSTY 1x2x0,8mm	m	920.00		Includ
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writings Parts				
	VD 16	m	20.00		Included
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Fire Detection Central	un	1.00	4,647.42	4,647.42
	Carbon Monoxide Detection Central	un	1.00	4,276.07	4,276.07
	Optic Sensor	un	129.00	109.52	14,128.08
	Temperature Sensor	un	7.00	105.47	738.29
	Carbon Monoxide Sensor	un	15.00	732.72	10,990.80
	Alarm Button	un	14.00	118.72	1,662.08
	Alarm Siren	un	15.00	161.38	2,420.70
	PHOTOLUMINESCENT SAFETY SIGNAL				
	Supply and assembly of photoluminescent signals, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	A | 04	un	48.00	27.51	1,320.48
	D | 04	un	4.00	27.51	110.04
	E | 04	un	4.00	27.51	110.04

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	F | 04	un	1.00	27.51	27.51
	G | 04	un	2.00	27.51	55.02
	H | 01	un	2.00	21.93	43.86
	K | 01	un	1.00	21.93	21.93
	M | 02	un	14.00	24.02	336.28
	N | 02	un	9.00	24.02	216.18
	P | 02	un	15.00	24.02	360.30
	S | 02	un	39.00	24.02	936.78
	MOBILE EQUIPMENT SYMBOLOGY				
	Supply and installation of fire extinguisher as Designed Parts, and writing parts, and all necessary materials and work				
	Carbon Anhydride Fire Extinguisher (5kg)	un	1.00	133.20	133.20
	Chemical Powder ABC Fire Extinguisher (6kg)	un	38.00	69.04	2,623.52
	Carried forward				**8,844,339.22**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,844,339.22**
5.5.	*CONTROL TOWER*				
	BILL NO. 1				
	EARTHWORKS (PROVISIONAL)				
	SITE CLEARANCE				
	Site clearance				
	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	0	4.59	Rate only
	EXCAVATIONS ETC				
	Excavation in earth Not exceeding 2m deep				
	Trenches	m3	0	9.02	Rate only
	Footings	m3	0	9.02	Rate only
	Extra over bulk excavations in earth for excavation in				
	Soft rock	m3	0	27.05	Rate only
	Hard rock	m3	0	45.08	Rate only
	Extra over all excavations for carting away				
	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	0	5.80	Rate only
	Risk of collapse of excavations				
	Sides of bulk excavations not exceeding 1,5m deep	m2	0	4.51	Rate only
	Keeping excavations free of water				
	Keeping excavations free of water other than subterranean water	Item	0	1,932.00	Rate only
	FILLING ETC				
	Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to ?% Mod AASHTO density Backfilling to trenches, holes, etc	m3	0	5.80	Rate only

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Filling of graded crushed stone , consolidated				
	Under floors etc	m3	23	45.08	1,036.84
	Compaction of ground surfaces				
	Compaction of natural or excavated ground surface under floors etc	m2	116	2.58	299.28
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
	To bottoms and sides of trenches etc	m2	116	1.29	149.64
	BILL NO 2				
	CONCRETE FORMWORK AND REINFORCING				
	Concrete				
	30MPa/19mm concrete				
	Strip Footings	m3	6.00	158.09	948.54
	Bases	m3	17.00	158.09	2,687.53
	Surface beds on waterproofing	m3	20	153.74	3,074.80
	Slabs including beams and inverted beams	m3	98	163.52	16,024.96
	Stairs including landings, beams and inverted beams	m3	3.00	155.63	466.89
	Inverted beams	m3	24	158.98	3,815.52
	Downstand beams	m3	29.00	154.51	4,480.79
	Columns	m3	7	158.98	1,112.86
	Plain in situ concrete grade C12/15				
	Blinding concrete - 50 mm	m3	3	138.25	414.75
	FINISHING TOP SURFACE OF CONCRETE				
	Finishing top surfaces of concrete smooth with a power float				
	Surface Bed & Slabs	m2	384.00	3.14	1,205.76
	FORMWORK				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Rough Formwork to Sides				
	Bases	m2	44	18.44	811.36
	Strip Footings	m2	28	18.44	516.32
	Rough Formwork to Sides				
	Inverted beams above concrete	m2	47	22.41	1,053.27
	Rectangular columns with total height not exceeding 3.5m	m2	95	19.77	1,878.15
	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	81	5.37	434.[illegible]
	Edges, risers, ends and reveals exceeding 300mm high or wide	m2	19	17.89	339.91
	Rough formwork to soffits				
	Slabs propped up not exceeding 3.5m	m2	253.0	20.27	5,128.31
	Slabs propped up exceeding 3.5m high	m2	26	22.09	574.34
	Landings in stairs	m2	5	31.46	157.30
	Stairs with sloping soffits	m2	9	31.46	283.14
	Rough formwork to sides and soffits				
	Beams propped up no exceeding 3.5m	m2	211	24.60	5,190.60
	MOVEMENT JOINTS, ETC.				
	Saw cut joints				
	3 x 60mm Saw cut joints in top surfaces of concrete surface bed	m	156.00	2.25	351.00
	REINFORCEMENT				
	High tensile steel reinforcement to structural concrete work				
	10mm to 20mm Diameter bars	t	32	1,290.81	41,305.92
	Fabric reinforcement				
	Type 245 mesh fabric reinforcement in concrete surface beds, slabs, etc	m2	131	5.47	716.57
	Carried forward				**8,938,798.54**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,938,798.54**
	BILL NO 3				
	MASONRY				
	BLOCKWORK				
	SUPERSTRUCTURE				
	Blockwork in class II Mortar				
	100mm Walls	m2	32	52.29	1,673.28
	150mm Walls	m2	51	57.81	2,948.31
	300mm Cavity Walls	m2	283	80.24	22,707.92
	BLOCKWORK SUNDRIES				
	Wall bonding ties				
	500mm hoop iron with 2 shots into concrete built horizontally into walls	no	1,079	3.01	3,247.79
	High tensile steel reinforcement to Blockwork				
	10mm to 32mm Diameter bars	t	1.4	1,290.81	1,807.13
	Fabcon or similar approved prestressed fabricated lintels				
	Expansion joints in brickwork				
5.6	10mm Sondor Jointex not exceeding 300 mm high between blockwork and concrete	m	208	1.42	295.36
	BILL NO 4				
	WATERPROOFING				
	One layer of 350 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
5.6	In walls	m2	20	0.99	19.80
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
5.7	Under Surfacebeds	m2	116	0.97	112.52
	Geotextile Membrane				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	On flat roofs	m2	117	37.63	4,402.71
	75mm Thick Lamdaboard PIR insulation				
5.8	On roof over waterproofing	m2	117	22.40	2,620.80
	GRAVEL				
	19mm gravel laid to falls (gradient of 1.5%)	m2	117	1.29	150.93
	Carried forward				**8,978,785.09**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,978,785.09**
	BILL NO 5				
	CARPENTRY AND JOINERY				
	DOORS ETC				
	Timber Doors				
	Timber Door Type 1	no	4	127.75	511.00
	Timber Door Type 2	no	1	135.76	135.76
	Timber Door Type 3	no	0	416.83	Rate only
	Timber Door Frames				
	Timber Door Frame Type 1	no	4	99.02	396.08
	Timber Door Frame Type 2	no	1	99.02	99.02
	Timber Door Frame Type 3	no	0	99.02	Rate only
	Vanities				
5.9	Vanity tops - 600mm width	m	2.4	364.00	873.60
	Cupboards				
	CAB 02				
	Four-sheet cabinet in MDF Water-repellent Class 1 22mm thick, TAFILAN melamine veneer ref. L167, dark gray Finishing: melamine veneer type TAFILAN ref. L167, dark gray. • 4 x Fasteners magnets. • 4 x 4 Grass Multilock cup hinges, Ref. 3703 from Overlay Snap-on. • 4 x INTERFER knobs ref. EG.1012128 / I2 with Ø13mm and height 306mm (242mm between holes), in stainless steel. • 2 x Lock with rotating rods for leaves up to 3.00 m type VACHETE 5464 for ½ cylinder VACHETE 5101 (only one sheet). • 2 x Sets of bolts to be mounted inside two sheets.		1	2,324.00	2,324.00
	CAB 01				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Four-sheet cabinet in MDF Water-repellent Class 1 22mm thick, TAFILAN melamine veneer ref. L167, dark gray. Door leafs Finishing: melamine veneer type TAFILAN ref. L167, dark gray. Ironmongery • 2 x Fasteners magnets. • 2 x 4 Grass Multilock cup hinges, Ref. 3703 from Overlay Snap-on. • 2 x INTERFER knobs ref. EG.1012128 / I2 with Ø13mm and height 306mm (242mm between holes), in stainless steel. • 1 x Lock with rotating rods for sheets up to 3.00 m type VACHETE 5464 for ½ cylinder VACHETE 5101 (only one sheet). • 1 x Sets of bolts to be mounted inside two sheets.		1	1,232.00	1,232.00
	Carried forward				**8,984,356.55**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**8,984,356.55**
	BILL NO 6				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	SUSPENDED CEILINGS				
	Metallic false ceilings type Amstrong – Metal Leatflet, Lay-in Board, consisting of plates with 600mm standard perforation Rg 2516, , color RAL 9003, suport in the profiles of finishes to the walls in double 'L', section 20x20x20x20x1.5mm thickness, in aluminum termolacado in the color RAL 9003. *Fixed plates the hidden suspension structure, through suspension profiles and hangers. Include profile of the own backtack of the system forming a 1cm wing at the junction with the walls / vertical elements.*				
	Ceilings suspended not exceeding 1m below concrete soffits (Type CE3)	m2	166	145.60	24,169.60
	Waterproof false ceilings in plasterboard, KNAUF, consisting of KNAUF H water-repellent plasterboard with 12.5mm thick, single layer, with joints bus through its own mass KNAUF LEICHT, paint with a coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat. *Fixed plates the hidden suspension structure, through suspension profiles and hangers. Include profile of the own backtack of the system forming a 1cm wing at the junction with the walls / vertical elements. (CE 5)*				
	Ceilings suspended not exceeding 1m below concrete soffits (Type CE5)	m2	11	25.46	280.06
	CE1				
	Staircase Areas	m2	20	13.77	275.40
	Carried forward				**9,009,081.61**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,009,081.61**
	BILL NO 7				
	FLOOR COVERINGS, WALL LININGS, ETC				
	FLOOR COVERINGS				
	Stoneshield SLT finish from STONHARD with 3 mm thick, Gray Winter color, with non-reflective matte transparent sealant, medium texture.Include all the work and prescriptions indicated by the manufacturer.				
	On floors (offices)	m2	168	77.50	13,020.00
	Staircase - threads	m2	1	77.50	77.50
	-risers	m2	26	77.50	2,015.00
	-landings	m2	6	77.50	465.00
	Margres ceramic tiles mosaic flooring with 60x60cm, Underground series, Colour Carbon UG4, Nat. Rectified, laid with Macoreli Fermaflex adhesive cement mortar, over regularization layer. Mortar for Fermacolor joints of the same color as ceramic tiles. Include colorless waterproofing according to stone supplier's recommendations.				
	On floors (toilets)	m2	0	109.26	Rate only
	SKIRTINGS, NOSINGS, ETC				
	stainless steel, with concealed attachements, 10cm high, Include profile for plaster, ref 563 in galv iron (SB1)				
	skirtings	m	0	15.47	Rate only
	40x40x4mm galvanised iron angles				
5.8	Stair noisings	m	30	20.53	615.90
	Carried forward				**9,025,275.01**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,025,275.01**
	BILL NO 8				
	IRONMONGERY				
	Ironmongery sheet				
	Passive & Active Panic Bar	no	5	748.38	3,741.90
	Panic Bar	no	0	509.02	Rate only
	Door Closers	no	9	415.21	3,736.89
	Kick Plate	no	0	29.06	Rate only
	Lever Handles Set	no	7.5	58.09	435.68
	Thumb Turn	no	0	24.54	Rate only
	Dead Lock	no	8	32.76	262.08
	Knob Cylinder	no	0	38.48	Rate only
	Door Stop	no	8	20.06	160.48
	Alu Flush Bolt	no	1	39.41	39.41
	Dust Keep	no	1	27.26	27.26
	Pull Handles	no	0	54.04	Rate only
	Hinges	no	18	21.23	382.14
	Bathroom Fittings				
	SANITANA suspended toilet seat NEXO line, seat with sealed cover and hinges in stainless steel, all in white color and including all fixings.	no	4	571.04	2,284.16
	Urinal mural, Sanitana color white line CAPRI	no	2	431.38	862.76
	Washbasin VALADARES HANDICAP line, 665x570x240	no	4	210.45	841.80
	Mixing tap with single lever and automatic discharge valve, ROCA series LOGICA ref. 5261641JO, FIN. chrome.	no	4	662.29	2,649.16
	Kombifix Built-In Flush Mount with Stainless Steel Wall Mount	no	4	499.07	1,996.28
	Flushometer ROCA, AQUALINE ref. 506902010	no	4	545.49	2,181.96

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Siphon bottle square "bellavista" ref: 7203, w / chrome finish	no	4	65.17	260.68
	SANIFLOW automatic hand dryer, ref. E88ACS	no	4	873.43	3,493.72
	BOBRICK Liquid Soap Dispenser, B-822 Basin-Mounted Series	no	4	304.01	1,216.04
	Toilet paper holder, Mediclinics M-783 CS.	no	4	239.81	959.24
	Wall stand JNF ref. IN169	no	4	230.22	920.88
	Plate pictograma, MALE, outside the door, in stainless steel, ref. IN401 of JNF, fastenings by adhesive.	no	4	7.15	28.60
	Plate pictograma, FEMALE, outside the door, in stainless steel, ref. IN401 of JNF, fastenings by adhesive	no	4	7.15	28.60
	Carried forward				**9,051,784.73**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,051,784.73**
	BILL NO 9				
	METALWORK				
	Balustrade Staircase	m	26.00	571.20	14,851.20
	Roof	m	48.00	448.00	21,504.00
	Steel Frames				
	Steel Frame Type 1	no	1	868.63	868.63
	Steel Frame Type 2	no	0	526.72	Rate only
	Steel Frame Type 3	no	0	821.92	Rate only
	Steel Frame Type 4	no	1	821.92	821.92
	Steel Frame Type 5	no	1	821.92	821.92
	Steel Doors				
5.8	Steel Door Type 1	no	1	36.62	36.62
5.9	Steel Door Type 2	no	0	26.86	Rate only
5.10	Steel Door Type 3	no	0	26.86	Rate only
5.11	Steel Door Type 4	no	1	26.86	26.86
5.12	Steel Door Type 5	no	1	26.86	26.86
	Aluminium				
	Alluminium Louvre (3300 x 2500mm)	No	2	2,220.38	4,440.76
	Shopfronts and Facades	Sum	1	117,029.27	117,029.27
	BILL NO 10				
	PLASTERING				
	SCREEDS				
	15mm thick screeds	m2	106	3.59	380.54
	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	On walls	m2	372	6.19	2,302.68
	On narrow widths not exceeding 300mm wide	m2	45	6.29	283.05
	EXTERNAL PLASTER				
	On walls	m2	285	7.44	2,120.40
	Carried forward				**9,217,299.44**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,217,299.44**
	BILL NO 11				
	TILING				
	WALL TILING				
	"Margres" type tiles, underground series, 60x60, colour carbon UG4				
	On walls	m2	84	109.26	9,177.84
	On narrow widths not exceeding 300mm	m2	20	114.06	2,281.20
	Fair exposed cutting and fitting around pipe not exceeding 100mm external diameter	No	8	3.60	28.80
	FLOOR TILING				
	Margres ceramic tiles mosaic flooring with 60x60cm, Underground series, Colour Carbon UG4, Nat. Rectified, laid with Macoreli Fermaflex adhesive cement mortar, over regularization layer. Mortar for Fermacolor joints of the same color as ceramic tiles. Include colorless waterproofing according to stone supplier's recommendations.				
	On floors & landings	m2	11	135.67	1,492.37
	Stoneshield SLT finish from STONHARD with 3 mm thick, Gray Winter color, with non-reflective matte transparent sealant, medium texture. Include all the work and prescriptions indicated by the manufacturer.				
	On floors & landings	m2	170	710.90	120,853.00
	FLOOR FINISHES				
	Stoneshield SLT finish from STONHARD with 3 mm thick, Gray Winter color, with non-reflective matte transparent sealant, medium texture. Include all the work and prescriptions indicated by the manufacturer.				
	to staircases (threads and risers)	m2	24	718.10	17,234.40
	to landings	m2	11	710.90	7,819.90
	Carried forward				**9,376,186.95**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,376,186.95**
	BILL NO 12				
	GLAZING				
	Mirror crystal with 700 x 1200 x6mm thickness, with anti-humidity treatment, with 4x fixings ORIGINAL VOLA ref. T2, satin stainless stee				
	Mirror 700 x 1200mm high	No	4	89.38	357.52
	Carried forward				**9,376,544.47**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,376,544.47**
	BILL NO 13				
	PAINTWORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Two-coat paint based on aqueous emulsion of vinylic copolymer, type HEMPEL HEMPAMUR 58P80, on fine plaster or plaster plaster, in color to be defined by Architecture. - Support: Clay brick masonry and Uncoated concrete walls and pillars. (WA 2)				
	Walls	m2	372	5.62	2,090.64
	Two-coat paint based on aqueous emulsion of vinyl copolymer, type HEMPEL HEMPAMUR 58P80, on fine plaster in color to be defined by Architecture. - Support: Masonry of concrete blocks and Walls and pillars of concrete discovered.Include cleaning of all concrete irregularities and filling of bubbles in order to obtain a smooth surface. (WA 7)				
	Walls	m2	108	5.62	606.96
	ON METAL SURFACES				
	1 coat Hempadur primary 15550 and two coats Hempalin enamel 52140 (colour to define)				
	Door frames	m2	12	9.60	115.20
	ON WOOD SURFACES				
	Dekordor HD colours, laminate finish, hard wearing, (Colour to define)				
	Doors	m2	15	8.31	124.65
	Door frames etc	m2	0	8.87	Rate only
	ON PLASTERBOARD SURFACES				
	one coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat 58730. (CE4)				
	On Ceilings	m2	0	5.21	Rate only
	one coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat 58730. (CE5)				
	On Ceilings	m2	0	5.21	Rate only

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	ON EXTERNAL FLOATED PLASTER SURFACES				
	two-coat paint from Hempelmat 58730 from Hempel. Include cleaning of all concrete irregularities and filling of bubbles in order to obtain a smooth surface.				
	Walls	m2	0	8.12	Rate only
	Carried forward				**9,379,481.92**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,379,481.92**
	MEP				
	BILL NO 1				
	MEP - ELECTRICAL INSTALLATIONS				
	POWER SUPPLY				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, MD, CTG and CTE, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work.				
	Ph+PEN: 3x(2x185Cu) + 2x185Cu (XAV)	m	140.00	454.42	63,618.80
	XG-R3x25+2G16	m	1,120.00	24.95	27,944.00
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing parts				
	VD 125	m	5.00	21.80	109.00
	Supply and assembly of equipment including all necessary accessories to its perfect application in accordance with the drawings and writing parts				
	General cut-off button	un	2.00	42.82	85.64
	CABLE TRAY				
	Supply and installation, cable tray with cover and all accessories required for installation, including brackets.				
	100x60 mm (ceiling)	m	30.00	19.48	584.40
	100x60 mm (floor)	m	35.00	13.47	471.45
	Supply and installation of floor boxes, and all accessories required for installation.				
	Outlets pavement box	un	16.00	149.46	2,391.36
	ILLUMINATION				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	XG-R3G1.5	m	430.00	2.60	1,118.00
	LiYCY 2x1.5	m	90.00	0.97	87.30
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 16	m	60.00	1.47	88.20
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	20.00	2.77	55.40
	Supply and installation of lighting fixtures, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	T1	un	24.00	150.66	3,615.84
	T2.1100	un	6.00	231.07	1,386.42
	T2.4100	un	2.00	605.43	1,210.86
	T2.5000	un	2.00	705.15	1,410.30
	T4.1	un	4.00	867.78	3,471.12
	S1	un	7.00	81.04	567.28
	S2	un	3.00	155.95	467.85
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation switch	un	2.00	16.34	32.68
	Embedded installation chandelier switch	un	4.00	16.34	65.36
	Motion Detector	un	6.00	91.40	548.40
	OUTLETS				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	XG-R3G2.5	m	1,100.00	4.05	4,455.00
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 20	m	1,100.00	1.47	1,617.00
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Pavement box installation Schuko plug with protected sockets	un	96.00	6.97	669.12
	STABILIZED OUTLETS				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	XG-R3G2.5	m	840.00	4.05	3,402.00
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 20	m	840.00	1.47	1,234.80
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	2.00	2.77	5.54
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Pavement box installation Schuko plug with protected sockets	un	64.00	13.57	868.48
	ELECTRICAL BOARDS				
	Supply and installation of Electrical Boards according to the indicated drawings, single-line diagrams, General Technical Conditions, Technical Conditions and Special Specification, including all associated accessories to their proper funcioning				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	CONTROL TOWER G.F.E.B.	un	1.00	201.60	201.60
	CONTROL TOWER UPS .E.B.	un	1.00	100.80	100.80
	CONTROL TOWER L.1.E.B.	un	1.00	201.60	201.60
	CONTROL TOWER UPS L.1.E.B.	un	1.00	100.80	100.80
	UPS 20 kVA TRI/TRI	un	1.00	8,390.82	8,390.82
	Carried forward				**9,510,059.14**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,510,059.14**
	ACCESS CONTROL / INTRUSION				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	JY(ST)Y 1x2x0.8	m	60.00	1.41	84.60
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 16	m	10.00	1.47	14.70
	Supply and installation of access control equipment according to the indicated drawings, General Technical Conditions, Technical Conditions and Special Specification, including all associated accessories to their proper funcioning				
	Access Control Central	un	1.00	1,766.23	1,766.23
	Keyboard	un	2.00	193.95	387.90
	Proximity Reader	un	4.00	152.40	609.60
	Electromagnetic Retainer	un	2.00	314.85	629.70
	Call Button	un	2.00	54.16	108.32
	Dual Technology Detector	un	8.00	95.73	765.84
	EARTHING NETWORK				
	Earthing Network				
	Copper coated steel tape 30X3mm	un	80.00	5.03	402.40
	Earth rods - 250?m 2m Æ5/8"	un	4.00	53.31	213.24
	Multifunctional connectors with intermediate plate ; Ø8-10, fl.30mm/; Ø8-10, fl.30mm	un	10.00	1.53	15.30
	Connector for steel Structures 5-19mm	un	5.00	2.55	12.75
	Rod to fl at conductor clamp	un	4.00	10.20	40.80
	Bus bar with 5 terminals	un	1.00	43.11	43.11
	Carried forward				**9,515,153.63**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,515,153.63**
	BILL NO 2				
	MEP - COMMUNICATIONS				
	CABLE TRAY				
	Supply and installation, cable tray with cover and all accessories required for installation, including brackets.				
	100x60 mm (ceiling)	m	30.00	19.48	584.40
	100x60 mm (floor)	m	35.00	13.47	471.45
	SOCKETS				
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	RJ45 embedded socket	un	4.00	22.46	89.84
	RJ45 pavement socket	un	64.00	16.18	1,035.52
	TELECOMMUNICATIONS CABINET				
	Supply and installation of telecom cabinet as Designed Parts, and writing parts, and all necessary materials and work				
	Telecom Individual Cabinet	un	1.00	1,244.15	1,244.15
	Main Telecom Cabinet	un	1.00	4,207.77	4,207.7
	CABLES				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	UTP 4P CAT 6	m	2,400.00	1.41	3,384.00
	Carried forward				**9,526,170.76**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,526,170.76**
	WATER & SEWAGE				
	BILL NO 3				
	WATER SUPPLY AND FIRE FIGHTING RING				
	PIPELINE FOR WATER SUPPLY				
	Supply and installation of "HENCO" multilayer pipes in cold water tubing,embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	Ø32 mm	m	8.20	29.79	244.28
	Ø25 mm	m	2.00	19.02	38.04
	Ø20 mm	m	8.00	13.47	107.76
	Ø16mm	m	13.20	10.44	137.81
	Supply and assembly of HDPE PN10 f32 in branch connection, entrenched, including all earthworks, caution tape with stainless steel wires and any additional work:	vg	1.00	89.60	89.60
	CONNECTIONS / ACCESSORIES FOR WATER SUPPLY				
	Supply and assembly of Water Meter ø 32mm mounted in cabinet, including 2 DN25 Shut-Off Valves, any additional work and accessories:	un	1.00	517.15	517.15
	Supply and assembly of Shut-Off Valves, any additional work and accessories:				
	Ø20 mm	un	4.00	37.90	151.60
	Ø16 mm	un	2.00	29.65	59.30
	Carried forward				**9,527,516.30**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,527,516.30**
	BILL NO 4				
	DRAINAGE AND SEWAGE				
	PIPELINE FOR DRAINAGE				
	Supply and assembly of DRAINAGE HDPE pipeline, entrenched, including all earthworks and any additional work:				
	ø 110	m	7.00	25.01	175.07
	Connecting to Drainage infrastructure of corrugated HDPE ø 110, with variable length, entrenched, including all earthworks and any additional work:	vg	1.00	1,045.33	1,045.
	CONNECTIONS / ACCESSORIES FOR DRAINAGE				
	Supply and assembly of roof gully ø 110mm, Coverage gutter	un	1.00	82.98	82.98
	Supply and assembly of Wall Outlet, including all earthworks and any additional work, including all earthworks and any additional work:	un	1.00	365.29	365.29
	Supply and assembly of cleaning plug, including all earthworks and any additional work:				
	ø 110 mm	un	1.00	21.57	21.57
	DOMESTIC SEWAGE PIPELINE				
	Supply and assembly of DOMESTIC SEWAGE in corrugated HDPE pipeline, entrenched, including all earthworks and any additional work:				
	ø 125 mm	m	8.00	33.75	270.00
	ø 110 mm	m	9.00	25.01	225.09
	ø 90 mm	m	7.60	22.04	167.50
	ø 50 mm	m	5.70	14.52	82.76
	ø 40 mm	m	9.30	11.24	104.53
	Connecting to Domestic drainage infrastructure of corrugated HDPE ø125, with variable length, entrenched, including all earthworks and any additional work:	vg	1.00	1,045.33	1,045.33

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	CONNECTIONS / ACCESSORIES FOR SEWAGE				
	Supply and assembly of bowl siphon, including all earthworks and any additional work:	un	4.00	74.12	296.48
	Supply and assembly of floor inspection siphon, including all earthworks and any additional work:	un	4.00	93.72	374.88
	Supply and assembly of floor siphoned gully, including all earthworks and any additional work:	un	4.00	95.78	383.12
	Supply and assembly of Precast Concrete Sumpboxes including all earthworks and any additional work and accessories:	un	2.00	322.21	644.42
	Supply and assembly of cleaning plug, including all earthworks and any additional work:				
	ø 110 mm	un	1.00	21.57	21.57
	ø 90 mm	un	1.00	25.60	25.60
	ø 50 mm	un	1.00	14.45	14.45
	Supply and assembly of rooftop sewage ventilator, including all earthworks and any additional work:				
	ø 90 mm	un	1.00	17.28	17.28
	Carried forward				**9,532,879.55**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,532,879.55**
	BILL NO 5				
	MEP - FIRE PROTECTION				
	AUTOMATIC FIRE DETECTION SYSTEM				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writings Parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	JYSTY 1x2x0,8mm	m	70.00		Includ
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writings Parts				
	VD 16	m	30.00		Included
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Fire Detection Central	un	1.00	2,172.12	2,172.12
	Optic Sensor	un	10.00	109.52	1,095.20
	Alarm Button	un	2.00	118.72	237.44
	PHOTOLUMINESCENT SAFETY SIGNAL				
	Supply and assembly of photoluminescent signals, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	A | 04	un	3.00	27.51	82.53
	B | 04	un	2.00	27.51	55.02
	D | 04	un	1.00	27.51	27.51
	H | 01	un	4.00	21.93	87.72
	K | 01	un	1.00	21.93	21.93
	M | 02	un	2.00	24.02	48.04
	S | 02	un	4.00	24.02	96.08

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	MOBILE EQUIPMENT SYMBOLOGY				
	Supply and installation of fire extinguisher as Designed Parts, and writing parts, and all necessary materials and work				
	Carbon Anhydride Fire Extinguisher (5kg)	un	2.00	133.20	266.40
	Chemical Powder ABC Fire Extinguisher (6kg)	un	2.00	69.04	138.08
	Carried forward				**9,537,207.62**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,537,207.62**
	Boxing in smooth formwork to form				
5.13	20x20 Chamfers along top or bottoms edges		1,514	1.47	2,225.58
5.4.	*BAR AND COFFEE SHOP*				
	BILL NO. 1				
	EARTHWORKS (PROVISIONAL)				
	SITE CLEARANCE				
	Site clearance				
	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	482	4.59	2,212.38
	EXCAVATIONS ETC				
	Excavation in earth Not exceeding 2m deep				
	Trenches	m3	36	9.02	324.72
	Footings	m3	20	9.02	180.40
	Extra over bulk excavations in earth for excavation in				
	Soft rock	m3	28	27.05	757.40
	Hard rock	m3	28	45.08	1,262.2
	Extra over all excavations for carting away				
	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	27	5.80	156.60
	Risk of collapse of excavations				
	Sides of bulk excavations not exceeding 1,5m deep	m2	205	4.51	924.55
	Keeping excavations free of water				
	Keeping excavations free of water other than subterranean water	Item	1	1,932.00	1,932.00
	FILLING ETC				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to ?% Mod AASHTO density Backfilling to trenches, holes, etc	m3	32	5.80	185.60
	Filling of graded crushed stone , consolidated				
	Under floors etc	m3	98	45.08	4,417.84
	Compaction of ground surfaces				
	Compaction of natural or excavated ground surface under floors etc	m2	487	2.58	1,256.46
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
	To bottoms and sides of trenches etc	m2	487	1.29	628.23
	Carried forward				**9,553,671.62**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,553,671.62**
	BILL NO 2				
	CONCRETE, FORMWORK AND REINFORCEMENT				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	Surface blinding under footings and bases	m3	4	138.25	553.00
	REINFORCED CONCRETE CAST ON/IN FORMWORK 30MPa/19mm concrete				
	Strip Footings	m3	10	158.09	1,580.9
	Bases	m3	14	158.09	2,213.26
	Foundation beams	m3	11	158.09	1,738.99
	Surface beds on waterproofing	m3	63	153.74	9,685.62
	Slabs including beams	m3	137	163.52	22,402.24
	Inverted Beams	m3	20	158.98	3,179.60
	Columns	m3	8	158.98	1,271.84
	TEST CUBES				
	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	80		included
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a power float Surface beds, slabs, etc	m2	891	3.14	2,797.74
	ROUGH FORMWORK (DEGREE OF ACCURACY III)				
	Rough formwork to sides				
	Bases (Provisional)	m2	47	18.44	866.68
	Foundation beams (Provisional)	m2	85	18.44	1,567.40
	Rough formwork to sides				
	Inverted beams above concrete	m2	183	22.41	4,101.03
	Rough formwork to soffits				
	Slabs propped up not exceeding 1,5m high	m2	52	19.31	1,004.12

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Slabs propped up exceeding 3.5m and not exceeding 5m high	m2	472	20.27	9,567.44
	Rough formwork to sides and soffits				
	Beams propped up exceeding 3.5m and not exceeding 5m high	m2	259	24.60	6,371.40
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
	Rectangular columns with total height not exceeding 3.5m above bearing level	m2	113	19.77	2,234.01
	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	291	5.37	1,562.67
	Extra over rough formwork to sides for smooth formwork				
	Outer sides of inverted edge beams	m2	26.5	2.47	65.46
	Inverted beams above concrete	m2	96.5	2.47	238.36
	Extra over rough formwork to soffits for smooth formwork				
	Slabs propped up exceeding 3.5m and not exceeding 5m high	m2	472	2.74	1,293.28
	Boxing in smooth formwork to form				
	20 x 20mm Chamfers along top or bottom edges	m	678	1.47	996.66
	MOVEMENT JOINTS ETC				
	3 x 3mm Saw-cut joints in top of concrete	m	482	2.25	1,084.50
	Horizontal construction joints through concrete including thick cement slurry to one face				
	Surface beds not exceeding 300mmm thick	m	47	18.13	852.11
	REINFORCEMENT				
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
	10mm to 32mm Diameter bars	t	32	1,290.81	41,305.92

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Fabric reinforcement				
	Type fabric reinforcement in concrete surface beds etc	m2	419	5.47	2,291.93
	Carried forward				**9,674,497.78**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,674,497.78**
	BILL NO 3				
	MASONRY				
	BLOCKWORK				
	SUPERSTRUCTURE				
	Blockwork in class II Mortar				
	100mm Walls	m2	130	52.29	6,797.70
	150mm Walls	m2	154	57.81	8,902.74
	200mm walls	m2	84	73.63	6,184.92
	300mm Cavity Walls	m2	172	80.24	13,801.28
	BLOCKWORK SUNDRIES				
	Wall bonding ties				
	500mm hoop iron with 2 shots into concrete built horizontally into walls	no	193	3.01	580.93
	High tensile steel reinforcement to Blockwork				
	10mm to 32mm Diameter bars	t	0.5	1,290.81	645.41
	Expansion joints in brickwork				
5.5	10mm Sondor Jointex not exceeding 300 mm high between blockwork and concrete	m	39	1.42	55.38
	Carried forward				**9,711,466.14**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,711,466.14**
	BILL NO 4				
	WATERPROOFING				
	One layer of 350 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
5.5	In walls	m2	28	0.99	27.72
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
5.6	Under Surfacebeds	m2	437	0.97	423.8[illegible]
	Geotextile Membrane				
	On flat roofs	m2	445	37.63	16,745.35
	Asphalt Fabric				
	Against Walls	m2	175	48.00	8,400.00
	Against Floors	m2	445	48.00	21,360.00
	Torch on				
	Behind retaining walls	m2	0	48.00	Rate only
	75mm Thick Lamdaboard PIR insulation				
5.7	On roof over waterproofing	m2	445	22.40	9,968.0[illegible]
	GRAVEL				
	19mm gravel laid to falls (gradient of 1.5%)	m2	445	1.29	574.05
	BILL NO 5				
	CARPENTRY AND JOINERY				
	DOORS ETC				
	Timber Doors				
	Timber Door Type 1	no	3	127.75	383.25
	Timber Door Type 2	no	0	135.76	Rate only
	Timber Door Type 3	no	4	416.83	1,667.32

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Timber Door Frame				
	Timber Door Frame Type 1	no	3	99.02	297.06
	Timber Door Frame Type 2	no	0	99.02	Rate only
	Timber Door Frame Type 3	no	4	99.02	396.08
	Sliding Doors				
	Sliding Doors	no	3	181.48	544.44
	Vanity tops - 600mm width	no	4	364.00	1,456.00
	Carried forward				**9,773,709.30**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,773,709.30**
	BILL NO 6				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	SUSPENDED CEILINGS				
	KNAUF plasterboard false ceiling, 12.5 mm thick, total roof rail with its own mass and paint with one coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat 58730.Include hidden suspension structure and hangers, profile of roofing to the walls / vertical elements in "L" hidden, type Expamet in stainless steel forming wing of 1cm in the junction with the walls / vertical elements				
	Ceilings suspended not exceeding 1m below concrete soffits (Type CE4)	m2	399	28.78	11,483.22
	Carried forward				**9,785,192.52**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,785,192.52**
	BILL NO 7				
	FLOOR COVERINGS, WALL LININGS, ETC				
	SKIRTINGS, NOSINGS, ETC				
	stainless steel, with concealed attachements, 10cm high, Include profile for plaster, ref 563 in galv iron (SB1)				
	skirtings	m	159	15.47	2,459.73
	Carried forward				**9,787,652.25**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,787,652.25**
	BILL NO 8				
	IRONMONGERY				
	Ironmongery sheet				
	Passive & Active Panic Bar	no	3	748.38	2,245.14
	Panic Bar	no	2	509.02	1,018.04
	Door Closers	no	5	415.21	2,076.05
	Kick Plate	no	0	29.06	Rate or
	Lever Handles Set	no	9	58.09	522.81
	Thumb Turn	no	4	24.54	98.16
	Dead Lock	no	5	32.76	163.80
	Knob Cylinder	no	0	38.48	Rate only
	Door Stop	no	50	20.06	1,003.00
	Alu Flush Bolt	no	0	39.41	Rate only
	Dust Keep	no	0	27.26	Rate only
	Pull Handles	no	0	54.04	Rate only
	Hinges	no	18	21.23	382.14
	Bathroom Fittings				
	SANITANA suspended toilet seat NEXO line, seat with sealed cover and hinges in stainless steel, all in white color and including all fixings.	no	6	571.04	3,426.24
	Washbasin VALADARES HANDICAP line, 665x570x240	no	6	210.45	1,262.70
	Mixing tap with single lever and automatic discharge valve, ROCA series LOGICA ref. 5261641JO, FIN. chrome.	no	6	662.29	3,973.74
	Kombifix Built-In Flush Mount with Stainless Steel Wall Mount	no	6	499.07	2,994.42
	Flushometer ROCA, AQUALINE ref. 506902010	no	6	545.49	3,272.94

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Siphon bottle square "bellavista" ref: 7203, w / chrome finish	no	6	65.17	391.02
	SANIFLOW automatic hand dryer, ref. E88ACS	no	6	873.43	5,240.58
	BOBRICK Liquid Soap Dispenser, B-822 Basin-Mounted Series	no	6	304.01	1,824.06
	Toilet paper holder, Mediclinics M-783 CS.	no	6	239.81	1,438.86
	Wall stand JNF ref. IN169	no	6	230.22	1,381.32
	Plate pictograma, MALE, outside the door, in stainless steel, ref. IN401 of JNF, fastenings by adhesive.	no	2	7.15	14.30
	Plate pictograma, FEMALE, outside the door, in stainless steel, ref. IN401 of JNF, fastenings by adhesive	no	2	7.15	14.30
	Carried forward				**9,820,395.87**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,820,395.87**
	BILL NO 9				
	METALWORK				
	Steel Frames and Doors				
	Steel Frame Type 1	no	0	868.63	Rate only
	Steel Frame Type 2	no	2	526.72	1,053.44
	Steel Frame Type 3	no	0	821.92	Rate only
	Steel Frame Type 4	no	0	821.92	Rate or
	Steel Frame Type 5	no	0	821.92	Rate only
	Steel Doors				
5.5	Steel Door Type 1	no	0	36.62	Rate only
5.6	Steel Door Type 2	no	2	26.86	53.72
5.7	Steel Door Type 3	no	0	26.86	Rate only
5.8	Steel Door Type 4	no	0	26.86	Rate only
5.9	Steel Door Type 5	no	0	26.86	Rate only
	Aluminium				
5.10	Facades and Shopfronts	Sum	1	104,554.36	104,554.36
	BILL NO 10				
	PLASTERING				
	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
	On walls	m2	777	6.19	4,809.63
	On narrow widths not exceeding 300mm wide	m2	13	6.29	81.77
	EXTERNAL PLASTER				
	On walls	m2	347	7.35	2,550.45
	Carried forward				**9,933,499.24**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,933,499.24**
	BILL NO 11				
	TILING				
	WALL TILING				
	"Margres" type tiles, underground series, 30x30, Tecnica Series - Platina 41				
	On walls	m2	208	104.46	21,727.68
	On narrow widths not exceeding 300mm	m2	13	109.26	1,420.38
	Fair exposed cutting and fitting around pipe not exceeding 100mm external diameter	No	12	3.60	43.20
	FLOOR TILING				
	"Margres" type tiles, underground series, 30x30, ANTI SLIP Tecnica Series - Platina 41				
	On floors & landings	m2	399	104.46	41,679.54
	Fair exposed cutting and fitting around pipe not exceeding 100mm external diameter	No	12	3.60	43.20
	Carried forward				**9,998,413.24**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**9,998,413.24**
	BILL NO 12				
	GLAZING				
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	4mm Normal strength (NS) clear laminated safety glass with polished edges all round				
	Sliding door 900 x 2032mm high	No	3	347.20	1,041.60
	Mirror crystal with 700 x 1200 x6mm thickness, with anti-humidity treatment, with 4x fixings ORIGINAL VOLA ref. T2, satin stainless stee				
	Mirror 700 x 1200mm high	No	7	89.38	625.66
	Carried forward				**10,000,080.50**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**10,000,080.50**
	BILL NO 13				
	PAINTWORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Two-coat paint based on aqueous emulsion of vinylic copolymer, type HEMPEL HEMPAMUR 58P80, on fine plaster or plaster plaster, in color to be defined by Architecture. - Support: Clay brick masonry and Uncoated concrete walls and pillars.				
	Walls	m2	777	5.62	4,366.74
	ON PLASTERBOARD SURFACES				
	one coat of HEMPEL Aqueous Sealant 48350 and three coats of Hempelmat 58730. (CE4)				
	On Ceilings	m2	399	5.21	2,078.79
	ON EXTERNAL FLOATED PLASTER SURFACES				
	two-coat paint from Hempelmat 58730 from Hempel. Include cleaning of all concrete irregularities and filling of bubbles in order to obtain a smooth surface.				
	Walls	m2	347	8.12	2,817.64
	ON WOOD				
	Dekordor HD colours, laminate finish, hard wearing, (Colour to define)				
	Doors	m2	14	8.31	116.34
	Door frames etc	m2	9	8.87	79.83
	ON METAL				
	Dekordor HD colours, laminate finish, hard wearing, (Colour to define)				
	Door frames etc	m2	1	9.60	9.60
	Carried forward				**10,009,549.44**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**10,009,549.44**
	MEP				
	BILL NO 1				
	MEP - ELECTRICAL INSTALATIONS				
	POWER SUPPLY				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, MD, CTG and CTE, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work.				
	Ph+PEN: 3x(1x35Cu) + 1x35Cu (XAV)	m	20	29.99	599.80
	XG-R3x25+2G16	m	30	24.95	748.50
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing parts				
	VD 75	m	20	12.48	249.60
	Supply and assembly of equipment including all necessary accessories to its perfect application in accordance with the drawings and writing parts				
	General cut-off button	un	1	42.82	42.82
	CABLE TRAY				
	Supply and installation, cable tray with cover and all accessories required for installation, including brackets.				
	100x60 mm (ceiling)	m	30	19.48	584.40
	ILLUMINATION				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	XG-R3G1.5	m	820	2.60	2,132.00
	LiYCY 2x1.5	m	210	0.97	203.70

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 16	m	50	1.47	73.50
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	30	2.77	83.10
	Supply and installation of lighting fixtures, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	T2.1	un	53	231.07	12,246.71
	T2.1475	un	1	270.46	270.46
	T2.1950	un	1	345.79	345.79
	T2.2200	un	1	372.16	372.16
	T2.2300	un	1	382.47	382.47
	T3	un	7	142.53	997.71
	S1	un	14	81.04	1,134.56
	S2	un	2	155.95	311.90
	S3	un	7	81.04	567.28
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation switch	un	1	16.34	16.34
	Embedded installation chandelier switch	un	5	16.34	81.70
	Motion Detector	un	9	91.40	822.60
	OUTLETS				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	XG-R3G2.5	m	170	4.05	688.50
	XG-R5G4	m	70	7.16	501.20
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 20	m	25	1.47	36.75
	VD 32	m	10	2.15	21.50
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	20	2.77	55.40
	Mounting box	un	14		0.00
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation Schuko plug with lid and protected sockets	un	8	14.64	117.12
	Embedded installation Schuko waterproof plug with lid and protected sockets	un	6	14.73	88.38
	ELECTRICAL BOARDS				
	Supply and installation of Electrical Boards according to the indicated drawings, single-line diagrams, General Technical Conditions, Technical Conditions and Special Specification, including all associated accessories to their proper funcioning				
	COFFE SHOP MAIN E.B.	un	0	201.60	Rate only
	COFFE SHOP KITCHEN E.B.	un	0	151.20	Rate only
	Carried forward				**10,033,325.39**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**10,033,325.39**
	ACCESS CONTROL / INTRUSION				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	JY(ST)Y 1x2x0.8	m	110	1.41	155.10
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 16	m	20	1.47	29.40
	Supply and installation of access control equipment according to the indicated drawings, General Technical Conditions, Technical Conditions and Special Specification, including all associated accessories to their proper funcioning				
	Access Control Central	un	1	1,649.86	1,649.86
	Keyboard	un	2	193.95	387.90
	Dual Technology Detector	un	6	95.73	574.38
	EARTHING NETWORK				
	Earthing Network				
	Copper coated steel tape 30X3mm	un	120	5.03	603.60
	Earth rods - 250?m 2m Æ5/8"	un	8	53.31	426.48
	Multifunctional connectors with intermediate plate ; Ø8-10, fl.30mm/; Ø8-10, fl.30mm	un	27	1.53	41.31
	Connector for steel Structures 5-19mm	un	18	2.55	45.90
	Rod to fl at conductor clamp	un	8	10.20	81.60
	Bus bar with 5 terminals	un	1	43.11	43.11
	Carried forward				**10,037,364.03**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**10,037,364.03**
	BILL NO 2				
	MEP - COMMUNICATIONS				
	CABLE TRAY				
	Supply and installation, cable tray with cover and all accessories required for installation, including brackets.				
	100x60 mm (ceiling)	m	30	19.48	584.40
	Supply and installation of floor boxes, and all accessories required for installation.				
	Floor box in masonry 800x800	un	1	315.47	315.47
	SOCKETS				
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	RJ45 embedded socket	un	5	22.46	112.30
	Coaxial embedded socket	un	3	22.46	67.38
	TELECOMMUNICATIONS CABINET				
	Supply and installation of telecom cabinet as Designed Parts, and writing parts, and all necessary materials and work				
	Telecom Individual Cabinet	un	1	1,027.32	1,027.32
	CABLES				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	UTP 4P CAT 6	m	190	1.41	267.90
	Coaxial Cable	m	120	1.39	166.80
	Carried forward				**10,039,905.60**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**10,039,905.60**
	BILL NO 3				
	WATER & SEWAGE				
	WATER SUPPLY AND FIRE FIGHTING RING				
	PIPELINE FOR WATER SUPPLY				
	Supply and installation of "HENCO" multilayer pipes in cold water tubing, embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	Ø40 mm	m	26.7	32.74	874.16
	Ø32 mm	m	13	29.79	387.27
	Ø25 mm	m	14.8	19.02	281.50
	Ø20 mm	m	24.4	13.47	328.67
	Ø16mm	m	16.8	10.44	175.39
	Supply and installation of "HENCO" multilayer pipes in hot water tubing, embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	Ø25 mm	m	11.3	19.02	214.93
	Ø20mm	m	20.4	13.47	274.79
	Supply and assembly of HDPE PN10 f40 in branch connection, entrenched, including all earthworks, caution tape with stainless steel wires and any additional work:	gv	1	104.53	104.53
	CONNECTIONS / ACCESSORIES FOR WATER SUPPLY				
	Supply and assembly of Water Meter ø 40mm mounted in cabinet, including 2 DN40 Shut-Off Valves, any additional work and accessories:	un	1	746.01	746.01
	Supply and assembly of Shut-Off Valves, any additional work and accessories:				
	Ø40 mm	un	1	86.09	86.09
	Ø25 mm	un	6	51.76	310.56
	Ø20 mm	un	5	37.90	189.50

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Ø16 mm	un	2	29.65	59.30
	Supply and assembly of Electric Watter Heater Horizontal 200l, including 2 DN25 Shut-Off Valves, any additional work and accessories: *PIPELINE FOR FIRE FIGHTING RING*	un	1	739.03	739.03
	Supply and installation of Black Steel pipes in fire water tubing,embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	ø 63	m	5.5	52.72	289.96
	ø 50	m	4	32.83	131.32
	Supply and assembly of HDPE PN10 f63 in branch connection, entrenched, including all earthworks, caution tape with stainless steel wires and any additional work: *CONNECTIONS / ACCESSORIES FOR FIRE FIGHTING RING*	gv	1	149.33	149.33
	Supply and assembly of Fire Hose Reel in Cabinet, including any additional work and accessories:	un	2	567.74	1,135.48
	Carried forward				**10,046,383.42**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**10,046,383.42**
	BILL NO 4				
	DRAINAGE AND SEWAGE				
	PIPELINE FOR DRAINAGE				
	Supply and assembly of corrugated HDPE pipeline, entrenched, including all earthworks and any additional work:				
	ø 200	m	7	40.00	280.00
	Connecting to Drainage infrastructure of corrugated HDPE ø 200, with variable length, entrenched, including all earthworks and any additional work:	gv	1	1,493.33	1,493.33
	CONNECTIONS / ACCESSORIES FOR DRAINAGE				
	Supply and assembly of roof gully ø 200mm, Coverage gutter	un	1	82.98	82.98
	Supply and assembly of Wall Outlet, including all earthworks and any additional work, including all earthworks and any additional work:	un	2	365.29	730.58
	Supply and assembly of cleaning plug, including all earthworks and any additional work:				
	ø 200 mm	un	2	66.66	133.32
	DOMESTIC SEWAGE PIPELINE				
	Supply and assembly of DOMESTIC SEWAGE in corrugated HDPE pipeline, entrenched, including all earthworks and any additional work:				
	ø 200 mm	m	14	40.00	560.00
	ø 160 mm	m	2.8	37.02	103.66
	ø 125 mm	m	2	33.75	67.50
	ø 110 mm	m	11.5	25.01	287.62
	ø 90 mm	m	10.5	22.04	231.42
	ø 50 mm	m	10.2	14.52	148.10
	ø 40 mm	m	14.7	11.24	165.23

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Connecting to Domestic drainage infrastructure of corrugated HDPE ø200, with variable length, entrenched, including all earthworks and any additional work:	gv	2	1,493.33	2,986.66
	CONNECTIONS / ACCESSORIES FOR DOMESTIC SEWAGE				
	Supply and assembly of bowl siphon, including all earthworks and any additional work:	un	6	74.12	444.72
	Supply and assembly of floor inspection siphon, including all earthworks and any additional work:	un	6	93.72	562.32
	Supply and assembly of floor siphoned gully, including all earthworks and any additional work:	un	6	95.78	574.68
	Supply and assembly of Precast Concrete Sumpboxes including all earthworks and any additional work and accessories:	un	7	322.21	2,255.47
	Supply and assembly of Grease Separator including all earthworks and any additional work and accessories:	un	1	322.21	322.21
	Carried forward				**10,057,813.22**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**10,057,813.22**
	BILL NO 5				
	MEP - FIRE PROTECTION				
	AUTOMATIC FIRE DETECTION SYSTEM				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writings Parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	JYSTY 1x2x0,8mm	m	130		Included
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writings Parts				
	VD 16	m	130		Included
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Fire Detection Central	un	1	2,172.12	2,172.12
	Optic Sensor	un	18	109.52	1,971.36
	Temperature Sensor	un	1	105.47	105.47
	Alarm Button	un	3	118.72	356.16
	PHOTOLUMINESCENT SAFETY SIGNAL				
	Supply and assembly of photoluminescent signals, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	A | 04	un	8	27.51	220.08
	H | 01	un	1	21.93	21.93
	J | 01	un	1	21.93	21.93
	K | 01	un	1	21.93	21.93
	M | 02	un	3	24.02	72.06
	N | 02	un	2	24.02	48.04

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	S | 02	un	5	24.02	120.10
	MOBILE EQUIPMENT SYMBOLOGY				
	Supply and installation of fire extinguisher as Designed Parts, and writing parts, and all necessary materials and work				
	Carbon Anhydride Fire Extinguisher (5kg)	un	2	133.20	266.40
	Chemical Powder ABC Fire Extinguisher (6kg)	un	3	69.04	207.12
	Carried forward				**10,063,417.92**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**10,063,417.92**
5.8.	*BANK*				
5.11	BANK LUMP SUM AMOUNT		1	440,920.16	440,920.16
5.9.	*TOILETS*				
	TOILETS LUMP SUM AMOUNT		1	231,483.08	231,483.08
5	*MECHANICAL LUMP SUM*				
	PACKAGE 1 : MECHANICAL LUMP SUM	SUM	1.00	832,250.23	832,250.23
	Carried forward				**11,568,071.39**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**11,568,071.39**
	PACKAGE 2 - STORMWATER & SEWAGE & FIRE MAINS				
	Stormwater & Sewage & Fire		1	2,962,634.59	2,962,634.59
	Stormwater Pro Rata P&G		1	516,999.27	516,999.27
	PACKAGE 3 - RETAINING WALLS				
	Retaining Walls				
4.3	*RETAINING WALLS*				
4.3.1	Escavation for concrete foundations	m3	0	12.32	Rate only
4.3.2	Filling	m3	0	6.72	Rate only
4.3.3	*Plain in situ concrete grade C15/20*				
4.3....	Blinding under spread foot - 50 mm	m2	3,235.08	138.25	447,249.81
4.3.4	*Reinforced in situ concrete grade C25/30 :*				
4.3....	Retaining walls not exceeding 3,5m high	m3	657.85	158.98	104,584.99
New	Retaining walls exceeding 3,5m and not exceeding 5,0m high	m3	1,392.64	158.98	221,401.91
4.3.4.2	*Rectangular columns exceeding 3,5m and not exceeding 5m above bearing level*				
	Rectangular columns with total height	m3	191.72	158.98	30,479.65
4.3....	Beams	m3	119.26	154.51	18,426.86
New	Footing	m3	792.40	158.09	125,270.52
4.3.5	*Reinforcement Steel Bars S500*				
4.3....	Retaining walls	t	357	1,290.81	460,819.17
4.3....	Columns	t	54	1,290.81	69,703.74
4.3....	Beams	t	19	1,290.81	24,525.39
New	Footing	t	230	1,290.81	296,886.30
4.3.6	*Formwork*				
4.3....	Retaining walls not exceeding 3,5m high	m2	4,616.05	19.51	90,059.14

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
New	Retaining walls exceeding 3,5m and not exceeding 5,0m high	m2	4,796.78	25.09	120,351.21
4.3....	Columns	m2	3,008.48	19.77	59,477.65
New	Footing	m2	1,948.12	18.44	35,923.33
	Edges, risers, ends and reveals exceeding 300mm high or wide				
4.3....	Beams	m	3,669.44	5.37	19,704.89
4.3.7	*Drainage*				
4.3....	Betuminous emulsion	m2	6,911.00	3.14	21,700.54
4.3....	Geotextile blanket 300 gr/m2	m2	4,421.00	15.68	69,321.28
4.3....	Drain pipes Ø60 mm, in the walls, spaced each 2 m in a mesh distribution shape	m	173.00	5.60	968.80
4.3....	Enkadrains	m2	760	20.16	15,321.60
	Waterproofing				
4.3....	Torch-on	m2	1,418.40	47.60	67,515.84
4.3.8	*Concrete Blocks for Wall*				
4.3....	260mm wide concrete blocks for perimeter wall	m2	4,423.93	46.06	203,766.22
4.3....	Paint	m2	8,847.86	8.87	78,480.52
4.3....	Protection to Torch on	m2	1,418.4	22.40	31,772.16
	Carried forward				**17,661,416.77**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**17,661,416.77**
	PACKAGE 4 - HEAVY DUTY PAVEMENT				
	Heavy Duty Pavement		1	11,236,510.53	11,236,510.53
4.3....	Heavy Duty Pavement Pro Rata P&G		1	1,961,010.59	1,961,010.59
	PACKAGE 5 - PRE-FABRICATED STEEL BUILDINGS				
5.7	*FIRE BAY*				
	BILL NO. 1				
	EARTHWORKS (PROVISIONAL)				
	SITE CLEARANCE				
	Site clearance				
	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	0	4.59	Rate only
	EXCAVATIONS ETC				
	Excavation in earth Not exceeding 2m deep				
	Trenches	m3	0	9.02	Rate only
	Footings	m3	0	9.02	Rate only
	Extra over bulk excavations in earth for excavation in				
	Soft rock	m3	0	27.05	Rate only
	Hard rock	m3	0	45.08	Rate only
	Extra over all excavations for carting away				
	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	0	5.80	Rate only
	Risk of collapse of excavations				
	Sides of bulk excavations not exceeding 1,5m deep	m2	0	4.51	Rate only
	Keeping excavations free of water				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Keeping excavations free of water other than subterranean water	Item	0	1,932.00	Rate only
	FILLING ETC				
	Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to ?% Mod AASHTO density Backfilling to trenches, holes, etc	m3	0	5.80	Rate only
	Filling of graded crushed stone , consolidated				
	Under floors etc	m3	136	45.08	6,130.88
	Compaction of ground surfaces				
	Compaction of natural or excavated ground surface under floors etc	m2	680	2.58	1,754.40
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
	To bottoms and sides of trenches etc	m2	680	1.29	877.20
	Carried forward				**30,867,700.37**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**30,867,700.37**
	BILL NO 2				
	CONCRETE, FORMWORK AND REINFORCEMENT				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	Surface blinding under footings and bases	m3	13.38	138.25	1,849.79
	REINFORCED CONCRETE CAST ON/IN FORMWORK 30MPa/19mm concrete				
	Ground Beams	m3	102.47	158.09	16,199.
	Bases	m3	13.06	158.09	2,064.66
	Walls	m3	118.80	158.98	18,886.82
	Surface beds on waterproofing	m3	103.05	153.74	15,842.91
	Columns	m3	4.15	158.98	659.77
	Lintels	m3	0.31	154.51	47.90
	TEST CUBES				
	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	109.81		included
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a power float Surface beds, slabs, etc	m2	687.00	3.14	2,157.
	ROUGH FORMWORK (DEGREE OF ACCURACY III)				
	Rough formwork to sides				
	Bases (Provisional)	m2	18.56	18.44	342.25
	Rough formwork to sides				
	Walls with total height exceeding 0.5m and not exceeding 3.5m above bearing level	m2	237.60	17.89	4,250.66
	Rough formwork to sides and soffits				
	Formwork to lintels	m2	0.4	24.60	9.84
	SUNDRY FORMWORK:				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
	Rectangular columns with total height not exceeding 3.5m above bearing level	m2	39.17	19.77	774.39
	Extra over rough formwork to sides for smooth formwork				
	Walls with total height exceeding 0.5m and not exceeding 3.5m above bearing level	m2	237.60	2.74	651.02
	Boxing in smooth formwork to form				
	20 x 20mm Chamfers along top or bottom edges	m	198.00	1.47	291.06
	MOVEMENT JOINTS ETC				
	3 x 60mm Saw cut joints in top surfaces of concrete surface bed	m	678.00	2.25	1,525.50
	Horizontal construction joints through concrete including thick cement slurry to one face				
	Surface beds not exceeding 300mmm thick	m	61.00	18.13	1,105.93
	REINFORCEMENT				
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
	10mm to 32mm Diameter bars	t	55	1,290.81	70,994.55
	Fabric reinforcement				
	Type fabric reinforcement in concrete surface beds etc	m2	687.00	5.47	3,757.89
	Carried forward				**31,009,111.97**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,009,111.97**
	BILL NO 3				
	MASONRY				
	BLOCKWORK				
	SUPERSTRUCTURE				
	Blockwork in class II Mortar				
	150mm walls	m2	102	57.81	5,896.62
	300mm Cavity Walls	m2	272.00	80.24	21,825.:
	BLOCKWORK SUNDRIES				
	Wall bonding ties				
5.8	500mm hoop iron with 2 shots into concrete built horizontally into walls	no	56	3.01	168.56
	High tensile steel reinforcement to Blockwork				
	10mm to 32mm Diameter bars	t	1.02	1,290.81	1,316.63
	FACE BLOCKWORK				
	390 x 190 x 190mm "Hollow" face blocks in class II mortar, pointed with flush horizontal and vertical joints				
	Expansion joints in brickwork				
5.9	10mm Sondor Jointex not exceeding 300 mm high between blockwork and concrete	m	35	1.42	49.7ᑌ
	Carried forward				**31,038,368.76**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,038,368.76**
	BILL NO 4				
	WATERPROOFING				
	One layer of 350 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
5.8	In walls	m2	43	0.99	42.57
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
5.9	Under Surfacebeds	m2	680	0.97	659.60
	Geotextile Membrane				
	On flat roofs	m2	0	37.63	Rate only
	Asphalt Fabric				
	Against Walls	m2	0	48.00	Rate only
	Against Floors	m2	0	48.00	Rate only
	Torch on				
	Behind retaining walls	m2	0	48.00	Rate only
	GRAVEL				
	19mm gravel laid to falls (gradient of 1.5%)	m2	0	1.29	Rate only
	BILL NO 5				
	CARPENTRY AND JOINERY				
	DOORS ETC				
	Timber Doors				
	Timber Door Type 1	no	3	127.75	383.25
	Timber Door Type 2	no	0	135.76	Rate only
	Timber Door Type 3	no	1	416.83	416.83
	Timber Door Frames				
	Timber Door Frame Type 1	no	3	99.02	297.06

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Timber Door Frame Type 2	no	0	99.02	Rate only
	Timber Door Frame Type 3	no	1	99.02	99.02
	CABINETS				
	Vanity tops - 600mm width	m	1.60	364.00	582.40
	Lockers	no	6.00	952.00	5,712.00
	CEILLINGS, PARTITIONS & ACCESS FLOORING				
	Partitions 3.15m high if offices	m	15.91	107.52	1,710.64
	Ceillings - (CE4)	m2	70.00	28.78	2,014.60
	Carried forward				**31,050,286.73**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,050,286.73**
	BILL NO 6				
	IRONMONGERY				
	Ironmongery sheet				
5.8	Passive & Active Panic Bar	no	3	748.38	2,245.14
5.9	Panic Bar	no	0	509.02	Rate only
5.10	Door Closers	no	4	415.21	1,660.84
5.11	Kick Plate	no	0	29.06	Rate only
5.12	Lever Handles Set	no	4.5	58.09	261.41
5.13	Thumb Turn	no	1	24.54	24.54
5.14	Dead Lock	no	4	32.76	131.04
5.15	Knob Cylinder	no	0	38.48	Rate only
5.16	Door Stop	no	4	20.06	80.24
5.17	Alu Flush Bolt	no	0	39.41	Rate only
5.18	Dust Keep	no	0	27.26	Rate only
5.19	Pull Handles	no	0	54.04	Rate only
5.20	Hinges	no	10	21.23	212.30
	Bathroom Fittings				
	SANITANA toilet seat POP line, discharge floor, seat with sealed cover & hinges in stainless steel, all in white colour and including all fixings	no	1.00	571.04	571.04
	Urinal mural, SANITANA color white line CAPRI	no	1.00	431.38	431.38
	SANITANA POP 45 wash basin wall hung or self standing application, with tap hole	no	2.00	210.45	420.90
	SANITANA, Shower trays – Square – Acrylics, Refª B100EFC5D	no	1.00	662.29	662.29
	SANITANA - Single lever washbasin mixer with ecological ceramic cartdrig	no	2.00	499.07	998.14
	Flushometer ROCA, AQUALINE ref. 506902010	no	2.00	545.49	1,090.98

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Anti-theft wall shower with normal jet, anti-scale system, chrome, ref. 28 948	no	1.00	301.54	301.54
	BOBRICK Liquid Soap Dispenser, B-822 Basin-Mounted Series	no	1.00	304.01	304.01
	Toilet paper holder, Mediclinics M-783 CS.	no	1.00	239.81	239.81
	Wall stand JNF ref. IN169	no	1.00	230.22	230.22
	BILL NO 7				
	METALWORK				
	Steeel Frames and Doors				
	Steel Frame Type 1	no	0	868.63	Rate only
	Steel Frame Type 2	no	0	526.72	Rate only
	Steel Frame Type 3	no	0	821.92	Rate only
	Steel Frame Type 4	no	1	821.92	821.92
	Steel Frame Type 5	no	0	821.92	Rate only
	Steel Doors				
5.8	Steel Door Type 1	no	0	36.62	Rate only
5.9	Steel Door Type 2	no	0	26.86	Rate only
5.10	Steel Door Type 3	no	0	26.86	Rate on
5.11	Steel Door Type 4	no	1	26.86	26.86
5.12	Steel Door Type 5	no	0	26.86	Rate only
	Aluminium				
	Aliplast - smartalu : thermally insulated curtain wall system glazing				
5.13	Panes exceeding 0,5m² and not exceeding 2m²	m2	3.06	397.60	1,216.66
	Carried forward				**31,062,217.99**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,062,217.99**
	BILL NO 8				
	PLASTERING				
	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
	On Blockwork	m2	324.34	6.19	2,007.66
	On Concrete	m2	64.25	6.24	400.92
	EXTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
	On blockwork (WA1)	m2	234.82	7.35	1,725.93
	On Concrete (WA1)	m2	58.82	7.39	434.68
	Carried forward				**31,066,787.18**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,066,787.18**
	BILL NO 9				
	TILING				
	WALL TILING				
	"Margres" type tiles, underground series, 30x30, ANTI SLIP R11, Colour platen 41				
	On walls	m2	95.00	104.46	9,923.70
	On narrow widths not exceeding 300mm	m2	3.00	109.26	327.78
	Fair exposed cutting and fitting around pipe not exceeding 100mm external diameter	No	4.00	3.60	14.40
	FLOOR TILING				
	"Margres" type tiles, underground series, 30x30, ANTI SLIP R11, Colour platen 41				
	On floors & landings	m2	70.00	104.46	7,312.20
	Fair exposed cutting and fitting around pipe not exceeding 100mm external diameter	No	4.00	3.60	14.40
	Carried forward				**31,084,379.66**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,084,379.66**
	BILL NO 10				
	GLAZING				
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	Mirror crystal with 700 x 1200 x6mm thickness, with anti-humidity treatment, with 4x fixings ORIGINAL VOLA ref. T2, satin stainless stee				
	Mirror 700 x 1200mm high	No	2.00	89.38	178.76
	Carried forward				**31,084,558.42**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,084,558.42**
	BILL NO 11				
	PAINTWORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Two-coat paint based on aqueous emulsion of vinylic copolymer, type HEMPEL HEMPAMUR 58P80, on fine plaster or plaster plaster, in color to be defined by Architecture. - Support: Clay brick masonry and Uncoated concrete walls and pillars. (WA2)				
	Walls	m2	499.00	12.31	6,142.
	On External Plaster	m2	293.64	8.12	2,384.36
	On Internal Plaster	m2	293.59	8.12	2,383.95
	On Gypsum Plasterboard Walls	m2	100.23	8.12	813.87
	1 coat Hempadur Primary 15550 & 2 coats Hempalin Enamel 52140 on metal doors	m2	4.19	8.12	34.02
	1 coat Hempadur Primary 15550 & 2 coats Hempalin Enamel 52140 on metal frames	m2	1.28	8.12	10.39
	Dekordor Paint on timber doors	m2	4.19	8.34	34.94
	Dekordor Paint on Timber Frames	m2	1.28	8.90	11.39
	Carried forward				**31,096,374.03**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,096,374.03**
	MEP				
	BILL NO 1				
	MEP - ELECTRICAL INSTALLATIONS				
	POWER SUPPLY				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, MD, CTG and CTE, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work.				
	Ph+PEN: 3x(1x25Cu) + 1x25Cu (XAV)	m	60	22.83	1,369.80
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing parts				
	VD 75	m	180	12.48	2,246.40
	Supply and assembly of equipment including all necessary accessories to its perfect application in accordance with the drawings and writing parts				
	General cut-off button	un	2	42.82	85.64
	CABLE TRAY				
	Supply and installation, cable tray with cover and all accessories required for installation, including brackets.				
	100x60 mm (ceiling)	m	150	19.48	2,922.00
	Supply and installation of floor boxes, and all accessories required for installation.				
	Floor box in masonry 800x800	un	1	315.47	315.47
	Outlets pavement box	un	8	149.46	1,195.68
	ILLUMINATION				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	XG-R3G1.5	m	450	2.60	1,170.00

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	LiYCY 2x1.5	m	190	0.97	184.30
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 16	m	200	1.47	294.00
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	15	2.77	41.
	Supply and installation of lighting fixtures, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	T1	un	8	150.66	1,205.28
	T4.1	un	1	867.78	867.78
	T4.2	un	2	1,045.18	2,090.36
	T9	un	21	162.59	3,414.39
	S1	un	4	81.04	324.16
	S3	un	2	155.95	311.90
	S4	un	11	81.04	891.44
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation switch	un	3	16.34	49.02
	Embedded installation chandelier switch	un	2	16.34	32.68
	Motion Detector	un	2	91.40	182.80
	OUTLETS				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	XG-R3G2.5	m	740	4.05	2,997.00

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	XG-R5G6	m	100	9.48	948.00
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 20	m	50	1.47	73.50
	VD 50	m	5	8.10	40.50
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	15	2.77	41.55
	Mounting box	un	19		0.00
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation Schuko plug with protected sockets	un	6	14.64	87.84
	Embedded installation Schuko plug with lid and protected sockets	un	2	14.64	29.28
	Surface installation Schuko waterproof plug with lid and protected sockets	un	5	12.43	62.15
	Surface installation PK Schuko waterproof plug with lid and protected sockets	un	3	95.72	287.16
	Surface installation Three Phase 63A plug with protected sockets	un	3	104.10	312.30
	Pavement box installation Schuko plug with protected sockets	un	48	6.97	334.56
	Carried forward				**31,120,782.52**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,120,782.52**
	STABILIZED OUTLETS				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	XG-R3G2.5	m	490	4.05	1,984.50
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 20	m	35	1.47	51.45
	Supply and installation of embedded or surface installation boxes, including all necessary accessories to its perfect application in accordance with the drawings and written documents				
	Square junction box 80x45x80	un	6	2.77	16.62
	Mounting box	un	12		0.00
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Embedded installation Schuko plug with protected sockets	un	12	14.64	175.68
	Pavement box installation Schuko plug with protected sockets	un	32	13.57	434.24
	ELECTRICAL BOARDS				
	Supply and installation of Electrical Boards according to the indicated drawings, single-line diagrams, General Technical Conditions, Technical Conditions and Special Specification, including all associated accessories to their proper funcioning				
	FIRE BAY.E.B.	un	1	201.60	201.60
	FIRE BAY UPS.E.B.	un	1	100.80	100.80
	UPS 10 kVA TRI/MONO	un	1	6,656.16	6,656.16
	ACCESS CONTROL / INTRUSION				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	JY(ST)Y 1x2x0.8	m	0	1.41	Rate only
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writing Parts				
	VD 16	m	0	1.47	Rate only
	Supply and installation of access control equipment according to the indicated drawings, General Technical Conditions, Technical Conditions and Special Specification, including all associated accessories to their proper funcioning				
	Access Control Central	un	1	1,625.11	1,625.11
	Proximity Reader	un	4	152.40	609.60
	Electromagnetic Retainer	un	2	314.85	629.70
	Carried forward				**31,133,267.98**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,133,267.98**
	EARTHING NETWORK				
	Earthing Network				
	Copper coated steel tape 30X3mm	un	160	5.03	804.80
	Earth rods - 250?m 2m Æ5/8"	un	3	53.31	159.93
	Multifunctional connectors with intermediate plate ; Ø8-10, fl.30mm/; Ø8-10, fl.30mm	un	23	1.53	35.19
	Connector for steel Structures 5-19mm	un	13	2.55	33.15
	Rod to fl at conductor clamp	un	3	10.20	30.60
	Bus bar with 5 terminals	un	1	43.11	43.11
	Lightning rod				
	Early Streamer Emission 2,200Kg air terminal IONIFLASH CONNECT	un	1	876.96	876.96
	Attachable base mast	un	1		0.00
	Extension Mast – 1st section Total height = 4,00m	un	1		0.00
	Extension Mast – 2nd section Total height = 5,80m	un	1		0.00
	Extension Mast – 3th section Total height = 7,50m	un	1	187.49	187.49
	Bracket for wall mounting of the mast with separation of 150mm	un	3	12.76	38.28
	Bolt with antimony lead expansion peg	un	6	7.65	45.90
	Fixation of fl at or round conductor to mast	un	1	10.20	10.20
	Descent				
	Tin Plated Copper 30X2mm	un	60	16.96	1,017.60
	Plastic collar for Ø 5-11 round or 30mm flat conductors	un	180	2.55	459.00
	Surge counter IFLASH REPORT	un	1	231.84	231.84
	Earth test clamp with information plate	un	2	20.28	40.56

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Protection sleeve for down-conductor; 2m ; Ø 8-10mm/Fl.30mm	un	2	35.58	71.16
	Lightning rod electrode				
	Inspection pit	un	2	48.22	96.44
	Bus bar for inspection pit 215x40x5mm	un	2	45.66	91.32
	Tin Plated Copper 30X2mm	un	10	16.96	169.60
	Earth rods - 250?m 2m Æ5/8"	un	6	53.31	319.86
	Graphite earth rod	un	2		0.00
	Rod to fl at conductor clamp	un	8	10.20	81.60
	Crow's foot conector with intermediate plate	un	2	10.20	20.40
	Carried forward				**31,138,132.97**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,138,132.97**
	BILL NO.2				
	MEP - COMMUNICATIONS				
	CABLE TRAY				
	Supply and installation, cable tray with cover and all accessories required for installation, including brackets.				
	100x60 mm (ceiling)	m	150	19.48	2,922.00
	Supply and installation of floor boxes, and all accessories required for installation.				
	Floor box in masonry 800x800	un	1	315.47	315.47
	SOCKETS				
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	RJ45 embedded socket	un	14	22.46	314.44
	RJ45 pavement socket	un	32	16.18	517.76
	TELECOMMUNICATIONS CABINET				
	Supply and installation of telecom cabinet as Designed Parts, and writing parts, and all necessary materials and work				
	Telecom Individual Cabinet	un	1	1,601.92	1,601.92
	CABLES				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writing parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	UTP 4P CAT 6	m	1,650	1.41	2,326.50
	Carried forward				**31,146,131.06**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,146,131.06**
	BILL NO 3				
	WATER & SEWAGE				
	WATER SUPPLY AND FIRE FIGHTING RING				
	PIPELINE FOR WATER SUPPLY				
	Supply and installation of "HENCO" multilayer pipes in cold water tubing, embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	Ø32 mm	m	6.5	29.79	193.64
	Ø25 mm	m	21.5	19.02	408.93
	Ø20 mm	m	16.5	13.47	222.26
	Ø16mm	m	3.5	10.44	36.54
	Supply and installation of "HENCO" multilayer pipes in hot water tubing, embedded or in sight, including opening and closing of gooves, clamps and all complementary works				
	Ø25 mm	m	4.5	19.02	85.59
	Ø16mm	m	2.5	10.44	26.10
	Supply and assembly of HDPE PN10 f32 in branch connection, entrenched, including all earthworks, caution tape with stainless steel wires and any additional work:	gv	1	89.60	89.60
	CONNECTIONS / ACCESSORIES FOR WATER SUPPLY				
	Supply and assembly of Water Meter ø 32mm mounted in cabinet, including 2 DN25 Shut-Off Valves, any additional work and accessories:	un	1	517.15	517.15
	Supply and assembly of Shut-Off Valves, any additional work and accessories:				
	Ø25 mm	un	1	51.76	51.76
	Supply and assembly of tap with hose connector, any additional work and accessories:	un	2	46.80	93.60

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Connecting to Domestic drainage infrastructure of corrugated HDPE ø125, with variable length, entrenched, including all earthworks and any additional work:	gv	1	1,045.33	1,045.33
	CONNECTIONS / ACCESSORIES FOR DOMESTIC SEWAGE				
	Supply and assembly of bowl siphon, including all earthworks and any additional work:	un	1	74.12	74.12
	Supply and assembly of floor inspection siphon, including all earthworks and any additional work:	un	1	93.72	93.72
	Supply and assembly of floor siphoned gully, including all earthworks and any additional work:	un	1	95.78	95.78
	Supply and assembly of Precast Concrete Sumpboxes including all earthworks and any additional work and accessories:	un	1	322.21	322.21
	Carried forward				**31,171,340.30**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**31,171,340.30**
	BILL NO 5				
	MEP - FIRE PROTECTION				
	AUTOMATIC FIRE DETECTION SYSTEM				
	Supply and installation of cables installed in cable tray, gutter, inserted into tubes or based on clamps as Designed Parts, and writings Parts, including opening and ditch closing and removal of surplus products to landfill and all necessary materials and work				
	JYSTY 1x2x0,8mm	m	80		Included
	Supply and pipe assembly including all necessary accessories to its perfect application in accordance with the drawings and writings Parts				
	VD 16	m	20		Included
	Supply and equipment assembly, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Fire Detection Central	un	1	2,172.12	2,172.12
	Optic Sensor	un	11	109.52	1,204.72
	Alarm Button	un	2	118.72	237.44
	PHOTOLUMINESCENT SAFETY SIGNAL				
	Supply and assembly of photoluminescent signals, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	A | 04	un	6	27.51	165.06
	H | 01	un	2	21.93	43.86
	K | 01	un	1	21.93	21.93
	M | 02	un	2	24.02	48.04
	N | 02	un	1	24.02	24.02
	S | 02	un	3	24.02	72.06
	MOBILE EQUIPMENT SYMBOLOGY				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Supply and installation of fire extinguisher as Designed Parts, and writing parts, and all necessary materials and work				
	Carbon Anhydride Fire Extinguisher (5kg)	un	1	133.20	133.20
	Chemical Powder ABC Fire Extinguisher (6kg)	un	2	69.04	138.08
	ELECTRIC SMOKE VENT CONTROL SYSTEM				
	Supply and assembly of smoke vent control panel, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	RZN 4416-M	un	1	2,585.60	2,585.60
	Supply and assembly of natural smoke vents, including all necessary accessories to its perfect application in accordance with the drawings, MD, CTG and CTE				
	Natural smoke vent, model D+H.ALUX HOR, L=2200mm x H=2403mm, Aa=3,40m2, blades PCA10 translucid	un	2	3,956.51	7,913.02
	Natural smoke vent, model D+H.ALAM VERT, L=1800mm x H=1593mm, Aa=1,82m2, aluminium blades	un	2	1,999.72	3,999.44
	CFS				
5.14	CFS LUMP SUM AMOUNT	SUM	1	3,723,100.54	3,723,100.54
	MECHANICAL WORKSHOP				
5.15	MECHANICAL WORKSHOP LUMP SUM AMOUNT	SUM	1	422,288.61	422,288.61
	STRUCTURAL STEEL				
5.16	Structural Steel Installation		1	263,200.00	263,200.00
	PACKAGE 6 - ACCESS ROAD				
	Access Roads		1	4,654,465.50	4,654,465.50
5.17	Access Roads Pro Rata P&G		1	817,890.14	817,890.14

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	PACKAGE 7 - MEP-MAIN PLATFORM LANDSCAPE & INFRASTRUCTURE				
	MEP				
	MEP		1	2,027,737.60	2,027,737.60
	Landscape				
	Grass	m2	9,000	22.40	201,600.00
	Trees	No	52	1,284.19	66,777.88
	Paving				
	Walkways	m2	4,020	74.89	301,057.80
	Carried to summary				**43,668,216.96**

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Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	KPONE UNITY TERMINAL				43,668,216.96
	TOTAL				**43,668,216.96**

WBHO Selling Rates The Unity Terminal, Kpone Packages 2,4,6

Selling Rates for The Unity Terminal, Kpone
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Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	UNITY TERMINAL KPONE				
	R&E P&G Costs				
1	Fixed	sum	1	238,774.44	238,774.44
2	Time related	sum	1	3,863,414.68	3,863,414.68
	Carried forward				**4,102,189.12**

Selling Rates for The Unity Terminal, Kpone
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Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**4,102,189.12**
	Package 1: Pavements				
3.2	*CONCRETE BLOCK PAVEMENT*				
4.5.2	*Heavy Duty Pavement (Car Park)*				
4.5.3	Finishing course with paver blocks CBP (0.08 m)	m2	1	35.06	35.06
4.5.4	Laying course material in sand with 0.04 m thick	m2	1	1.36	1.36
4.5.5	2nd Base layer of CBGM B (0.20 m)	m2	1	12.89	12.6
4.5.6	1st Base layer of CBGM B (0.20 m)	m2	1	12.89	12.89
4.5.7	Sub-Base layer crushed rock sub base material (0.15 m)	m2	1	5.65	5.65
4.5.8	Fast curing coat of cationic emulsion at a rate of 0.5 kg/m2	m2	1	2.99	2.99
4.5.9	Impregnation coat of cationic slow emulsion at a rate of 1.0 kg/m2	m2	1	3.22	3.22
	PACKAGE 2 : STORM WATER DRAINAGE & SEWAGE / WATER & FIRE MAINS				
4.4	*STORMWATER DRAINAGE*				
4.4.1	*Trench escavation by mechanical means including backfill and all kind of associated works according to the specifications*				
	Exterior Drainage	m3	6,032.88	27.29	164,637.30
	Internal Drainage	m3	1,470.00	27.29	40,116.30
	Oil Separator	m3	278.35	27.29	7,596.17
	By Pass	m3	177.87	27.29	4,854.07
4.4.2	*Concrete U-drains with removable concrete cover slab, complete, including, but not limited to excavation, formwork, concrete surround and blinding, steel reinforcement & expansion joint as drawing TR15009-PE-MP_SWD_002*				

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Internal width "A" = 450mm, depth "B" = 300mm	m	150.00	197.31	29,596.50
	Internal width "A" = 450mm, depth "B" = 310mm	m	60.00	197.31	11,838.60
	Internal width "A" = 450mm, depth "B" = 450mm	m	139.00	205.26	28,531.14
	Internal width "A" = 600mm, depth "B" = 600mm	m	107.00	227.58	24,351.06
	Internal width "A" = 600mm, depth "B" = 900mm	m	147.00	253.99	37,336.53
	Internal width "A" = 900mm, depth "B" = 900mm	m	77.00	321.67	24,768.59
4.4.3	*Concrete Heavy Duty U-drains with fixed concrete cover, complete, including, but not limited to excavation, formwork, concrete surround and blinding, steel reinforcement & expansion joint as drawing TR15009-PE-MP_SWD_003*				
	Internal width "A" = 600mm, depth "B" = 350mm	m	265.00	349.05	92,498.25
	Internal width "A" = 600mm, depth "B" = 600mm	m	421.00	362.80	152,738.80
	Internal width "A" = 600mm, depth "B" = 900mm	m	583.00	418.84	244,183.72
4.4.4	Channel Drain with RIPRAP rock side cover and bypass under the access roads	m	320.00	845.04	270,412.80
4.4.5	*Longitudinal collectors*				
	With 300 mm internal diameter	m	189.00	66.23	12,517.47
	With 400 mm internal diameter	m	275.00	78.87	21,689.25
	With 500 mm internal diameter	m	298.00	95.18	28,363.64
	With 800 mm internal diameter	m	458.00	151.51	69,391.58
	With 1000 mm internal diameter	m	74.00	201.76	14,930.24
	With 1200 mm internal diameter	m	40.00	236.39	9,455.60

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	With 1500 mm internal diameter	m	935.00	331.59	310,036.65
4.4.5	*Manholes*				
4.4.5.1	*With 1000 mm diameter*				
	Heigh < 2,50 m.	no	26	1,699.22	44,179.72
	2,50 < Heigh < 4,0 m	no	2	2,610.43	5,220.86
4.4.5.2	*With 1200 mm diameter*				
	Heigh < 2,50 m.	un	9	1,873.33	16,859.5
	2,50 < Heigh < 4,0 m	un	25	2,901.13	72,528.25
4.4....	Connection from U-drain to collector	un	3	910.65	2,731.95
4.4....	Connection between U-drains	un	20	665.69	13,313.80
4.4....	Connection between 2 U-drains and collector	un	1	1,252.94	1,252.94
4.4.6	Perimetral gutters along sidewalk (buildings area)	un	37.00	854.67	31,622.79
4.4.7	Concrete bypass including all the related works according to the technical specifications and drawings	un	1.00	28,341.53	28,341.53
4.4.8	Concrete oil separator including all the related works according to the technical specifications and drawings	un	1.00	38,617.99	38,617.99
4.4.9	Energy dissipator including all the associated works according to the technical specifications and drawings	un	1.00	15,067.99	15,067.99
	Carried forward				**5,971,845.23**

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Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**5,971,845.23**
	SEWAGE WATER & FIRE MAINS				
4.6	WATER SUPPLY AND FIRE FIGHTING RING				
4.6.1	*WATER SUPPLY*				
4.6.1.1	*Pipework*				
4.6.1....	*Supply and assembly of HDPE PN10 pipeline, entrenched, including all earthworks, caution tape with stainless steel wires and any additional work:*				
4.6....	Ø32 mm	m	0	15.04	Rate only
4.6....	Ø40 mm	m	111	15.96	1,771.56
4.6....	Ø63 mm	m	73	20.72	1,512.56
4.6....	Ø75 mm	m	444	24.17	10,731.48
4.6....	Ø90 mm	m	250	29.73	7,432.50
4.6....	Ø110 mm	m	145	33.60	4,872.00
4.6.1.2	*Connections and Accessories*				
4.6.1....	*Supply and assembly of Ductile Iron Flanged Gate Valve, including concrete thrust block, additional work and accessories:*				
4.6....	DN50 mm	un	3	241.45	724.35
4.6....	DN65 mm	un	2	298.02	596.04
4.6....	DN80 mm	un	2	312.93	625.86
4.6....	DN100 mm	un	1	369.72	369.72
4.6.1....	*Supply and assembly of Ductile Iron Threaded Gate Valve, including concrete thrust block, additional work and accessories:*				
4.6....	DN25 mm	un	4	236.99	947.96
4.6....	DN32 mm	un	2	236.99	473.98

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
4.6.1....	*Supply and assembly of Ductile Iron Flanged Washout Valve, including concrete thrust block, additional work and accessories:*				
4.6....	DN50 mm	un	3	241.45	724.35
4.6.1....	*Supply and assembly of Ductile Iron Flange Adaptors for HDPE Piping, including any additional work and accessories:*				
4.6....	DN50/63 mm	un	7	28.80	201.60
4.6....	DN65/75 mm	un	8	33.34	266.72
4.6....	DN80/90 mm	un	9	40.69	366.21
4.6....	DN100/110 mm	un	9	44.22	397.98
4.6.1....	*Supply and assembly of Ductile Iron Threaded Adaptors for HDPE Piping, including any additional work and accessories:*				
4.6....	DN32/40 mm	un	1	22.85	22.85
4.6....	DN32/32 mm	un	1	22.85	22.85
4.6.1....	*Supply and assembly of Ductile Iron All Flanged Tee, including concrete thrust block, additional work and accessories:*				
4.6....	DN65/50 mm	un	1	35.17	35.17
4.6....	DN65/65 mm	un	1	41.96	41.96
4.6....	DN80/50 mm	un	3	51.89	155.67
4.6....	DN100/80 mm	un	1	73.54	73.54
4.6....	DN100/100 mm	un	1	64.32	64.32
4.6.1....	*Supply and assembly of Ductile Iron Threaded Tee, including concrete thrust block, additional work and accessories:*				
4.6....	DN32/32 mm	un	1	22.85	22.85
4.6.1....	*Supply and assembly of Ductile Iron Double Flanged Taper, including concrete thrust block, additional work and accessories:*				

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Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
4.6....	DN50/32 mm	un	1	27.20	27.20
4.6....	DN65/40 mm	un	1	29.84	29.84
4.6....	DN65/50 mm	un	2	35.26	70.52
4.6....	DN80/50 mm	un	1	48.37	48.37
4.6....	DN80/60 mm	un	1	49.86	49.86
4.6....	DN100/65 mm	un	1	58.34	58.34
4.6....	DN100/80 mm	un	1	58.56	58.56
4.6.1....	*Supply and assembly of Ductile Iron Double Threaded Taper, including concrete thrust block, additional work and accessories:*				
4.6....	DN50/25 mm	un	2	22.85	45.70
4.6....	DN50/32 mm	un	1	22.85	22.85
4.6.1....	*Supply and assembly of Ductile Double Flanged 90° Bend, including concrete thrust block, additional work and accessories:*				
4.6....	DN50 mm	un	2	28.81	57.62
4.6....	DN65 mm	un	1	38.24	38.24
4.6....	DN100 mm	un	3	60.22	180.66
4.6.1....	*Supply and assembly of Ductile Double Threaded 90° Bend, including concrete thrust block, additional work and accessories:*				
4.6....	DN32 mm	un	3	35.62	106.86
4.6....	Precast Concrete Washout Valve Pit (Diam.=1250mm/H=1,45m) plastered on the Inside, including heavy duty ductile iron cover F900 (Road), additional work and accessories:	un	3	1,647.99	4,943.97
4.6....	Supply and assembly of Main Water Meter, including 2 DN80 Gate Valves, 1 DN80 Check Valve, access cabinet, additional work and accessories:	un	1	2,151.05	2,151.05
	Carried forward				**6,012,188.95**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**6,012,188.95**
4.6.2	FIRE FIGHTING RING				
4.6.2.1	*Pipework*				
4.6.2....	*Supply and assembly of HDPE PN16 pipeline, entrenched, including all earthworks, caution tape with stainless steel wires and any additional work:*				
4.6....	Ø63 mm	m	15	22.20	333.00
4.6....	Ø110 mm	m	325	37.96	12,337.0
4.6....	Ø160 mm	m	3,427	57.73	197,840.71
4.6.2.2	*Connections and Accessories*				
4.6.2....	*Supply and assembly of Ductile Iron Flanged Gate Valve, including concrete thrust block, additional work and accessories:*				
4.6....	DN50 mm	un	2	241.45	482.90
4.6....	DN80 mm	un	33	313.16	10,334.28
4.6....	DN150 mm	un	32	511.92	16,381.44
4.6.2....	*Supply and assembly of Ductile Iron Flanged Check Valve, including concrete thrust block, additional work and accessories:*				
4.6....	DN80 mm	un	30	343.32	10,299.60
4.6.2....	*Supply and assembly of Ductile Iron Flanged Washout Valve, including concrete thrust block, additional work and accessories:*				
4.6....	DN50 mm	un	8	241.45	1,931.60
4.6.2....	*Supply and assembly of Ductile Iron Flange Adaptors for HDPE Piping, including any additional work and accessories:*				
4.6....	DN50/63 mm	un	2	28.90	57.80
4.6....	DN100/110 mm	un	120	44.45	5,334.00
4.6....	DN150/160 mm	un	121	73.19	8,855.99

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Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
4.6.2....	*Supply and assembly of Ductile Iron All Flanged Tee, including concrete thrust block, additional work and accessories:*				
4.6....	DN110/100 mm	un	1	64.67	64.67
4.6....	DN150/80 mm	un	2	102.39	204.78
4.6....	DN150/100 mm	un	29	102.55	2,973.95
4.6....	DN150/150 mm	un	17	112.81	1,917.77
4.6.2....	*Supply and assembly of Ductile Iron Double Flanged Taper, including concrete thrust block, additional work and accessories:*				
4.6....	DN80/50 mm	un	2	48.49	96.98
4.6....	DN150/100 mm	un	4	104.72	418.88
4.6.2....	*Supply and assembly of Ductile Double Flanged 90° Bend, including concrete thrust block, additional work and accessories:*				
4.6....	DN100 mm	un	27	70.71	1,909.17
4.6....	DN150 mm	u	7	109.83	768.81
4.6.2....	*Supply and assembly of Ductile Iron Flanged 90° Duckfoot Bend, including concrete thrust block, additional work and accessories:*				
4.6....	DN80 mm	un	30	341.78	10,253.40
4.6....	Supply and assembly of FH1 Underground Fire Hydrant "Saint-Gobain" or Equivalente DN80, including concrete thrust block, additional work and accessories:	un	30	191.61	5,748.30
4.6....	Precast Concrete Fire Hydrant Pit (L=1,90m/W=1,40m/H=1,45m) plastered on the Inside, including heavy duty ductile iron cover D400 (Sidewalk), additional work and accessories:	un	4	1,837.45	7,349.80
4.6....	Precast Concrete Fire Hydrant Pit (L=1,90m/W=1,40m/H=1,40m) plastered on the Inside, including heavy duty ductile iron cover F900 (Road), additional work and accessories:	un	26	1,837.45	47,773.70

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Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
4.6....	Precast Concrete Washout Valve Pit (Diam.=1250mm/H=1,45m) plastered on the Inside, including heavy duty ductile iron cover F900 (Road), additional work and accessories:	un	8	1,871.79	14,974.32
	Carried forward				**6,370,831.80**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**6,370,831.80**
4.6.3	SEWAGE				
4.6.3.1	*Pipework*				
4.6.3....	*Supply and assembly of CORRUGATED HDPE pipeline, entrenched, including all earthworks and any additional work:*				
4.6....	Ø110 mm	m	43	26.58	1,142.94
4.6....	Ø200 mm	m	564	35.28	19,897.92
4.6....	Manholes supply and assembly of Precast Concrete Manhole, including all earthworks and any additional work and accessories:	un	29.00	3,871.64	112,277.56
4.6....	Septic TanksSupply and assembly of Watertight Septic Tanks (Ecodepur FE MRVT 120), including all earthworks , concrete protection slab, concrete acess manholes and any additional work and accessories:	un	7.00	11,272.36	78,906.52
4.6.4	DRAINAGE				
4.6.4.1	*Pipework*				
4.6.3....	*Supply and assembly of CORRUGATED HDPE pipeline, entrenched, including all earthworks and any additional work:*				
4.6....	Ø125 mm	m	26	27.58	717.08
4.6....	Ø160 mm	m	30	32.00	960.00
4.6....	Ø200 mm	m	204	45.59	9,300.36
4.6....	Ø250 mm	m	128	60.59	7,755.52
4.6....	Ø315 mm	m	116	75.77	8,789.32
4.6....	Ø400 mm	m	171	107.56	18,392.76
4.6....	Ø500 mm	m	139	142.58	19,818.62
4.6....	Manholes supply and assembly of Precast Concrete Manhole, including all earthworks and any additional work and accessories:	un	30	3,871.64	116,149.20

Selling Rates for The Unity Terminal, Kpone
Packages 2, 4, 6
Ex VAT

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
4.6....	Gutters supply and assembly of Precast Concrete including boxes and all earthworks and any additional work and accessories:	un	19	854.67	16,238.73
	Carried forward				**6,781,178.33**

Selling Rates for The Unity Terminal, Kpone
Packages 2, 4, 6
Ex VAT

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**6,781,178.33**
	PACKAGE 4 : HEAVY DUTY PAVEMENT				
4.5	*HEAVY DUTY PAVEMENTS*				
4.5.1	*Heavy Duty Pavement (terminal area excluding the Car Park)*				
4.5....	Finishing course with paver blocks CBP (0.10 m)	m2	110,971	31.81	3,529,987.51
4.5....	Laying course material in sand with 0.04 m thick	m2	110,971	1.36	150,920.56
4.5....	3rd Base layer of CBGM B (0.20 m)	m2	110,971	9.48	1,052,005.08
4.5....	2nd Base layer of CBGM B (0.20 m)	m2	110,971	9.48	1,052,005.08
4.5....	1st Base layer of CBGM B (0.20 m)	m2	110,971	9.48	1,052,005.08
4.5....	Sub-Base layer crushed rock sub base material (0.15 m)	m2	110,971	3.34	370,643.14
4.5....	Fast curing coat of cationic emulsion at a rate of 0.5 kg/m2	m2	221,942	2.99	663,606.58
4.5....	Impregnation coat of cationic slow emulsion at a rate of 1.0 kg/m2	m2	110,971	3.22	357,326.62
4.5.2	*Heavy Duty Pavement (Car Park)*				
4.5....	Finishing course with paver blocks CBP (0.10 m)	m2	34,070	31.81	1,083,766.70
4.5....	Laying course material in sand with 0.04 m thick	m2	34,070	1.36	46,335.20
4.5....	2nd Base layer of CBGM B (0.20 m)	m2	34,070	9.48	322,983.60
4.5....	1st Base layer of CBGM B (0.20 m)	m2	34,070	9.48	322,983.60
4.5....	Sub-Base layer crushed rock sub base material (0.15 m)	m2	34,070	3.34	113,793.80
4.5....	Fast curing coat of cationic emulsion at a rate of 0.5 kg/m2	m2	68,140	2.99	203,738.60
4.5....	Impregnation coat of cationic slow emulsion at a rate of 1.0 kg/m2	m2	34,070	3.22	109,705.40
4.5.3	*Concrete Bituminous Pavement (Office Service Area)*				
4.5....	Finishing course in Bituminous Concrete (0.05 m)	m2	4,960	22.63	112,244.80

Selling Rates for The Unity Terminal, Kpone
Packages 2, 4, 6
Ex VAT

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
4.5....	Base course in Bituminous Concrete (0.09 m)	m2	4,960	35.08	173,996.80
4.5....	Crushed aggregate base layer of extensive granulometry (0.15 m)	m2	4,960	9.48	47,020.80
4.5....	Crushed aggregate sub-base layer of extensive granulometry (0.15 m)	m2	4,960	7.11	35,265.60
4.5....	Tack Coat of Cationic Bituminous Emulsion with quick bursting at a rate of 0.7 kg/m2	m2	4,960	3.25	16,120.00
4.5....	Impregnation Coat of Cationic Bituminous Emulsion with slow bursting at a rate of 1.2 kg/m2	m2	4,960	3.25	16,120.0
	Carried forward				**17,613,752.88**

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**17,613,752.88**
	PACKAGE 6 : ACCESS ROAD				
3.1	*EARTHWORKS*				
3.1.1	Cleaning and Scrub, including trees, bush, roots and land cleaning	m2	37,183.00	2.13	79,199.79
3.1.2	Soil Excavation by mechanical means	m3	11,783.00	7.06	83,187.98
3.1.3	Landfill with the excavated sil	m3	24,614.00	10.30	253,524.20
3.1.4	Earth movement balance, including transportation, temporary deposit load	m3	12,831.00	7.74	99,311.94
3.2	*CONCRETE BITUMINOUS PAVEMENT*				
3.2.1	Wearing course in Bituminous Concrete (0.05 m)	m2	33,477.15	22.63	757,587.90
3.2.2	Base course in Bituminous macadam (0.09 m)	m2	33,477.15	35.08	1,174,378.42
3.2.3	Crushed aggregate base layer of extensive granulometry (0.20 m)	m2	33,477.15	9.48	317,363.38
3.2.4	Crushed aggregate sub-base layer of extensive granulometry (0.15 m)	m2	36,739.50	7.11	261,217.85
3.2.5	Capping layer in Tout Venant (0.15 m)	m2	37,182.60	1.56	58,004.86
3.2.6	Tack Coat of Cationic Bituminous Emulsion with rapid bursting at a rate of 0.7 kg/m2	m2	33,477.15	3.25	108,800.74
3.2.7	Impregnation Coat of Cationic Bituminous Emulsion with slow bursting at a rate of 1.2 kg/m2	m2	33,477.15	3.25	108,800.74
3.3	*ROAD SIGNALLING*				
3.3.1	*Road Marking in the Pavement*				
3.3....	Mark A (mark/gap) 0.60/0.30 e=0.20	un	135.00	2.47	333.45
3.3....	Mark B (mark/gap) 0.60/0.30 e=0.10	un	103.00	1.58	162.74
3.3....	Mark C (mark/gap) 1.00/1.00 e=0.10	un	396.00	2.47	978.12
3.3....	Mark D (mark/gap) 4.00/2.00 e=0.10	un	429.00	9.09	3,899.61

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	Brought forward				**21,647,574.01**
3.6	*STORMWATER DRAINAGE*				
3.6.1	*Longitudinal collectors Execution of longitudinal collectors, including all necessary work, and also, for its implementation, the excavation on land of any nature, the removal, replenishment and surpluses, and possible damages for deposit:compaction, leading to leakage of products*				
3.6....	With 300 mm internal diameter	m	1,337	66.23	88,549.51
3.6....	With 400 mm internal diameter	m	963	78.87	75,951.81
3.6....	With 500 mm internal diameter	m	380	95.18	36,168.40
3.6....	With 600 mm internal diameter	m	378	109.62	41,436.36
3.6.2	*Manholes*				
3.6.2.1	*With 1000 mm diameter*				
	Heigh < 2,50 m	un	66	1,699.22	112,148.52
	2,50 ? Heigh < 4,0 m	un	11	2,610.43	28,714.73
3.6.3	Gutters, next to curb or the separador elevated, with grate.	un	71	854.67	60,681.57
3.6.4	*Pipe culvert - Connection of collector to waterline, Including all the necessary work, and also for your Implantation, excavation on land of any nature, removal, replenishment and compaction, leaking to leftover products, and possible damages for deposit:*				
3.6....	with 300 mm internal diameter	un	4	2,755.05	11,020.20
3.6....	with 600 mm internal diameter	un	2	2,835.44	5,670.88
3.6.5	Cross drainage - concrete multi pipe culvert, enlargement of the existing culvert, according to the design, including all the necessary work, and also for your implantation, excavation on land of any nature, removal, replenishment and compaction, leaking to leftover products, and possible damages for deposit:	un	2	15,339.26	30,678.52
	Carried to summary				**22,138,594.51**

Selling Rates for The Unity Terminal, Kpone
Packages 2, 4, 6
Ex VAT

Item	Bill description	Unit	Bill qty	Selling Rate	Selling Amount
	UNITY TERMINAL KPONE				22,138,594.51
	TOTAL				**22,138,594.51**

WBHO Selling Rates The Unity Terminal, Kpone Packages 7 – MEP - ELECTRICAL

ITEM	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT USD
	BILL NO.4 - MAIN PLATFORM LANDSCAPE AND INFRASTRUCTURE				
4.7.1	**ELECTRICAL**				
4.7.1.1	**Medium voltage (MV)**				
4.7.1.1.1	**Existing MV line (11KV) detour and repositioning including lines and poles, according to drawings, descriptive notes, general technical conditions and special technical conditions**	un	1	60,055.35	60,055.35
4.7.1.1.2	**Connection to the existing electric power grid, including power line and respective poles, according to drawings, descriptive notes, general technical conditions and special technical conditions**	un	1		included above
4.7.1.1.3	**Supply and assembly of the transformer and swicth substation (800 KVA), including all the works and equipments, voltage cells, cable end boxes, counting box, transformer and other necessary accessories for its perfect operation and civil works to support the assembly of the equipment , namely execution of gutters, networking, according to Drawings , descriptive notes, technical conditions:**	un	1		included below
4.7.1.1.3.1	Medium voltage cell switch type SM6 IM 24KV 630A 16KA 1 SEG IP2XC, LSC2 equipped with: # Three position three-pole earth switch and disconnector # Tripolar bus # CIT type maneuvering mechanism # VPIS Voltage Presence Indicator # Connection terminals for 3 dry cables, 1 cable per phase, section = 240mm2 # Clamps and cell bottom for dry cable # Heating resistor 50W 220VAC with thermostat	un	1	122,373.43	122,373.43
4.7.1.1.3.2	Cell switch disconnector type SM6 GCM 24KV 630A 16KA 3 SEG, equipped with # 630A Tripolar Bus # 24KV SF6 cut-off switch-disconnector 630A 16KA 3 sec. # SF6 ground switch # Voltage presence indicators # Manual CIT command # Pre-equipment for installation of TT's and IT's # Heating resistor 50W 220VAC with thermostat # Secondary voltage transformer (3 un) #LV conmpartment	un	1		included above
4.7.1.1.3.3	Protection cell to the transformer SM6 QM 24KV 200A 16KA 1 SEG, equipped with: # Heating resistor 50W 220VAC with thermostat # Shunt Trip Coil Plus 4: 2NF-2NA/INT # Interlocking SM6 C1 The type C1 interlock consists of the following components: - A lock mounted on the earthing switch plus the respective key - A separately supplied lock for mounting on the transformer compartment door. # CF12/800 - FUSE CF 80A 12KV	un	1		included above
4.7.1.1.4	**Supply and assemly of the transformer (800 KVA)**				
4.7.1.1.4.1	Power transformer, three-phase TRIHAL type, interior and dry insulation. Characteristics: - Nominal power: 800 kVA. - Transformation ratio: 12 KV. And other characteristics according to the specification	un	1	31,080.54	31,080.54
4.7.1.1.4.2	PTC probe equipment plus the Z - V electronic converter, standard 230Vac for transformer thermal protection, installed.	un	6	6,383.71	38,302.26
4.7.1.1.4.3	Z-type converter, 24-240V DC / AC	un	1	24,400.32	24,400.32
4.7.1.1.4.4	Capacitor battery 200 kVAr	un	1	14,024.25	14,024.25
4.7.1.1.5	**Power Generators**				

ITEM	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT USD
4.7.1.1.5.1	Generator set 320 ekW (400 kVA) Prime Power Rating @ 50 Hz / 1500 rpm / 400 Volts equipped with Sound Attenuated Enclosure for 56°C Ambient Capability and 84,4 dB(A) @ 1 m & 100% load, Integral diesel fuel tank incorporated into the generator set base frame with 887 liters capacity installed with fuel level sensor, solenoid valve. Installed with Synchronizing control panel and motorized circuit breaker. Reference CAT / Supplier Barloworld Energia.	un	2	4,453.48	8,906.95
4.7.1.1.5.2	Fuel level sensor OCIO installed into Primary fuel storage tank. Reference PIUSI / Supplier Barloworld Energia	un	1	203.01	203.01
4.7.1.1.5.3	Fuel pump 56 liters/min (one considered for redundancy). Reference PIUSI / Supplier Barloworld Energia	un	2	391.19	782.38
4.7.1.1.5.4	731000FH Fuel Filter for water separation and fuel filtration. Reference RACOR / Supplier Barloworld Energia	un	2	109.07	218.15
4.7.1.1.5.5	Fuel transfer control panel. Reference MAIS AUTOMACAO / Supplier Barloworld Energia	un	1	860.13	860.13
4.7.1.1.5.6	Carbon steel Fuel pipping welded or press fitted with all appropriate accessories in order to ensure perfect operation of the fuel transfer system. Reference N/A / Supplier Barloworld Energia.	un	1	860.13	860.13
4.7.1.1.5.7	Stainless steel pipe 304 1"	m	30	16.54	496.16
4.7.1.1.5.8	Stainless steel 304 2"	m	10	30.74	307.41
4.7.1.1.5.9	Stainless steel 304 3"	m	20	67.93	1,358.56
4.7.1.1.5.10	Olflex classic 110 4x1.5mm²	m	60	3.90	233.84
4.7.1.1.5.11	Ball valve	un	7	27.19	190.36
4.7.1.1.5.12	One way valve	un	4	32.59	130.36
4.7.1.1.5.13	Cam lock	un	1	158.23	158.23
4.7.1.1.5.14	Motorized valve	un	2	281.48	562.96
4.7.1.2	**Low Voltage (LV)**				
4.7.1.2.1	**Precast concrete chamber complete including, but not limited to standard frame and cover, excavation, shoring, backfilling, disposal etc and all other fittings**				
4.7.1.2.1.1	Cable pit pull box type 1	un	22	295.18	6,494.03
4.7.1.2.1.1	Cable pit pull box type 2	un	15	393.58	5,903.67
4.7.1.2.2	**Lay and joint PVC pipes in trench including excavation, backfilling, end caps; warning tape; draw ropes; markers; disposal of surplus excavated material**				
4.7.1.2.2.1	PVC corrugated Ø40	m	1,830	3.56	6,514.87
4.7.1.2.2.2	PVC corrugated Ø63	m	730	4.25	3,100.36
4.7.1.2.2.3	PVC corrugated Ø75	m	1,940	5.26	10,202.19
4.7.1.2.2.4	PVC corrugated Ø110	m	250	9.93	2,482.66
4.7.1.2.2.5	PVC Ø125	m	1,305	12.48	16,284.92
4.7.1.2.2.6	PVC Ø163	m	860	19.05	16,382.42
4.7.1.2.3	**Trench escavation and filling according to the drawings and specifications (less than 1.5 m high)**	m	2,980	98.39	293,215.44
4.7.1.2.4	**Cables laid or drawn into conduits, trunking or ducts**				
4.7.1.2.4.1	Ph+PEN: 3x(5x300 Cu) + 5x300 Cu (XAV)	m	40	1,178.26	47,130.40
4.7.1.2.4.2	Ph+PEN: 3x(2x300 Cu) + 2x300 Cu (XAV)	m	250	471.31	117,827.88
4.7.1.2.4.3	Ph+PEN: 3x(3x240 Cu) + 3x240 Cu (XAV)	m	80	582.27	46,581.78
4.7.1.2.4.4	Ph+PEN: 3x(2x240 Cu) + 2x240 Cu (XAV)	m	860	395.06	339,755.25
4.7.1.2.4.5	Ph+PEN: 3x(2x185 Cu) + 2x185 Cu (XAV)	m	140	333.92	46,748.66
4.7.1.2.4.6	Ph+PEN: 3x(1x95 Cu) + 1x95 Cu (XAV)	m	30	67.84	2,035.22
4.7.1.2.4.7	Ph+PEN: 3x(1x35 Cu) + 1x35 Cu (XAV)	m	20	29.39	587.84
4.7.1.2.4.8	Ph+PEN: 3x(1x25 Cu) + 1x25 Cu (XAV)	m	100	23.13	2,313.40
4.7.1.2.4.9	Ph+PEN: 3x(1x10 Cu) + 1x10 Cu (XAV)	m	150	9.88	1,482.10
4.7.1.2.4.10	Ph+PEN: 3x(1x4 Cu) + 1x10 Cu (XAV)	m	30	9.88	296.42
4.7.1.2.5	**Supply and assembly of cabinets, including all accessories necessary for their perfect application as per Drawings, descriptive notes, general technical conditions and special technical conditions**				
4.7.1.2.5.1	Power Distribution Cabinet	un	2	261.71	523.41
4.7.1.2.5.2	Outlets Cabinet A	un	4	261.71	1,046.83
4.7.1.2.5.3	Outlets Cabinet B	un	5	261.71	1,308.53
4.7.1.2.5.4	Outlets Cabinet C	un	1	261.71	261.71
4.7.1.2.5.5	Outlets Cabinet D	un	6	261.71	1,570.24
4.7.1.2.5.6	Outlets Cabinet E	un	1	261.71	261.71

ITEM	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT USD
	Removable connector (includes signaling plate)	un	15	194.60	2,919.04
	Lowering mechanical protection; 2 m ; Ø 8-10mm / Fl.30mm	un	15	85.63	1,284.42
	Visiting box	un	15	65.23	978.45
	5 Hole Collector Bar 215x40x5mm	un	15	371.57	5,573.52
	Tape 30X2mm	m	135	24.11	3,254.62
	Electrode piqué 2m Æ5/8"	un	45	17.35	780.77
	Electrode	un	15	170.86	2,562.85
	Flat electrode connector	un	60	13.99	839.42
	Crow's foot connector	un	15	31.74	476.11
	Carried to collection				1,815,318.20
	COLLECTION				
	Page 1/1				
	Page 1/2				
	Page 1/3				1,815,318.20
	BILL NO.4 - MAIN PLATFORM LANDSCAPE AND INFRASTRUCTURE CARRIED TO SUMMARY				1,815,318.20

WBHO Selling Rates The Unity Terminal, Kpone Packages 7 – MEP - COMMUNICATIONS

ITEM	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT USD
	BILL NO.4 - MAIN PLATFORM LANDSCAPE AND INFRASTRUCTURE				
4.7.3	**COMUNICATIONS**				
4.7.3.1	**General**				
4.7.3.1.1	**Precast concrete chamber complete including, but not limited to standard frame and cover, excavation, shoring, backfilling, disposal etc and all other fittings**				
4.7.3.1.1.1	Cable pit pull box type 1	un	33	**393.58**	12,988.07
4.7.3.1.2	**Lay and joint PVC pipes in trench including excavation, backfilling, end caps; warning tape; draw ropes; markers; disposal of surplus excavated material**				
4.7.3.1.2.1	PVC corrugated Ø40	m	3,100	**3.57**	11,074.84
4.7.3.1.2.2	PVC corrugated Ø75	m	1,540	**5.28**	8,137.12
4.7.3.1.3	**Trench escavation and filling according to the drawings and specifications (less than 1.5 m high)**	m	2,640	**19.67**	51,939.07
4.7.3.1.4	**Cables laid or drawn into conduits, trunking or ducts for Backstage Connections**				
4.7.3.1.4.1	Optic fiber cable reference ????	m	2,676	**6.58**	17,615.97
4.7.3.2	**CCTV**				
4.7.3.2.1	**Cables laid or drawn into conduits, trunking or ducts**				
4.7.3.2.1.1	Optic fiber cable	m	6,440	**6.58**	42,394.18
4.7.3.2.1.2	FTP cat 6 twiste pair cable	m	888	**2.01**	1,785.86
4.7.3.2.2	**Supply, assembly and installation of equipment as per drawings, descriptive notes, general technical conditions and special technical conditions**				
4.7.3.2.2.1	Optic fiber converter	un	20	**595.23**	11,904.52
4.7.3.2.2.2	IP fixed camera day/night SV outdoor box	un	3	**659.77**	1,979.31
4.7.3.2.2.3	IP fixed camera day/night outdoor box	un	27	**664.65**	17,945.62
4.7.3.2.2.4	IP speed-dome camera moving outdoor box	un	18	**1,924.76**	34,645.61
	Carried to collection				212,410.17
	COLLECTION				
	Page 1/1				
	Page 1/2				
	Page 1/3				
	BILL NO.4 - MAIN PLATFORM LANDSCAPE AND INFRASTRUCTURE CARRIED TO SUMMARY				212,410.17

ITEM	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT USD

(to be completed and returned via email within 3 business days of receipt)

TO: JVD
Attention: Shane Garvey or Sena Dey
E-Mail: sgarvey@jvdriver.com and sdey@jvdriver.com
Phone: 024 7838815 and 055 6558157
RE: Request for Proposal – GPHA-Unity Terminal KPONE-Design and Construction of a Container and Devanning Handling Terminal Project

We refer to the above REQUEST FOR PROPOSAL for which we acknowledge receipt of all the Bid Documents and advise that:

☑ We intend to submit a Proposal for described Work/Services by the required RFP Closing Date.

☐ We have declined to submit a Proposal for the following reason(s):

Reasons for Decline:

If you are submitting a Bid Proposal it is COMPULSORY to attend a site visit. These visits shall be held during the week commencing 14th August 2017 and shall last approximately two hours. Please advise in the below table who shall be attending and at what date and time is most convenient. The number of attendees is restricted to three persons.

Compulsory Site Visit Attendance List:

Name	Position
Bruce Keytel	Site Agent
Mark Smith	Contracts Manager

Signed: _____

Name: NIGEL HARVEY

Company Name: WBHO Ghana (Limited)

Telephone: (+27) 011 321 7200

Mobile No.: +27 76 430 2101

Email: vickys@wbho.co.za (for correspondence)

RFP No.: 001-JVD-17
Attention: Shane Garvey or Sena Dey
RE: Request for Proposal – **GPHA-Unity Terminal KPONE-Design and Construction of a Container and Devanning Handling Terminal Project**

FROM: **WBHO GHANA LIMITED**
(Name of Bidder)

Plot No 73 , Second Close , Airport Residential Area, Accra, Ghana
(Address of Bidder)

D. Calitz
(Contact Name of Bidder)

1. The Bidder, having examined and read the Bid Documents, and having visited the Project Site and examined all conditions affecting the Work in accordance with the "Instruction to Bidders", is satisfied that it understands the Bid Documents, expressly accepts and agrees to the terms set out in the "Instructions to Bidders" and the exclusion of liability and indemnity set out in the RFP, declares itself competent to perform the Work, in accordance with the Bid Documents, for the **Bid Price stipulated in the Price Submission** attached hereto, which forms an integral part of this Bid.

2. The Bidder agrees that:
   2.1. Where the Bid Price is the sum of separate prices for a set of mutually exclusive requirements, and there is a discrepancy between the arithmetic sum of the separate prices and the Bid Price, the arithmetic sum shall be considered as the intention of the Bidder.
   2.2. Where there is a discrepancy between the numerical and alphabetical Bid Price, the alphabetical Bid Price shall be considered as representing the intention of the Bidder.
   2.3. The Bid is irrevocable, and open for acceptance by JVD, for a period of 120 days from the Bid Closing Time. Upon acceptance of this Bid, JVD will issue a Notice of Acceptance to the Bidder.
   2.4. Within seven (7) days from the date of receipt of the Notice of Acceptance from JVD, the Bidder will finalize the Subcontract Agreement with JVD.

3. The Bidder shall perform the Work in such a manner as to complete the Work on or before the dates shown in the Specifications.
   3.1 No Person, firm or corporation, other than the Bidder, has any interest in this Bid or in the proposed Contract for which this Bid is made and to which it relates.
   3.2 This Bid is made by the Bidder without any connection, knowledge, comparison of figures, or arrangement with any other person or persons making a bid for the same Contract, and is in all respects fair and without collusion or fraud.

4. The Bidder hereby acknowledges the receipt of the following Addenda to the Bid Documents.

Addendum No.	1	issued on the	18th	day of	August	, 2017.
Addendum No.	2	issued on the	23rd	day of	August	, 2017.
Addendum No.	3	issued on the	23rd	day of	August	, 2017.
Addendum No.	4	issued on the	23rd	day of	August	, 2017.
Addendum No.	5	issued on the	8th	day of	September	, 2017.
Addendum No.	6	issued on the	12th	day of	September	, 2017.
Addendum No.	7	issued on the	20th	day of	September	, 2017.
Addendum No.	8	issued on the	22nd	day of	September	, 2017.
Addendum No.	9	issued on the	26th	day of	September	, 2017.

5. Please provide the list of Subcontractors the Bidder intends to use on the Work and express the portion of the Works on which each Subcontractor will be used:

Subcontractor	Scope to be performed by Subcontractor
Buchels Hardware	General Ironmongery
Top Con	Ceilings & Partitioning
Klogg	Earthworks
Legna	Sub Soil Drainage
Klogg	Precast Concrete Material Supply
Azikho Manzi	Waterproofing
Marble Classic	Tiling
Smooth Edge SO	Stainless Skirting
Hiralco	Stoneshield
Doumar / Lamberts	Electrical
Doumar / Lamberts	Plumbing
Alutrade	Aluminium
Dimkwis	Plastering
Alutrade	Glazing
Interspray	Painting
Profile Doors	Timber Door – Supply
Manor House	Access Flooring
WBHO Services	Sanitary Ware
Memphis Windows	Steel Door Supply
Irokko	Joinery Fittings

The proposed sub-contractor list below is an indication of the possible sub-contractors to be used. Domestic subcontractors will be tendered and adjudicated according to their capacity and availability.

6. **Work Schedule:**
   The Bidder has included with its Bid, a detailed time schedule showing work activities, identifying the critical path for completion of the Work and the Bidder's completion date.

   The Bidder has additionally included a construction manpower and equipment schedule outlining the resources required to perform the Work.

7. **Qualifications:**
   The Bidder must demonstrate its capability to undertake the Work. Bidder to submit a description of its overall corporate organization, its record of similar services performed and resumes of key project personnel.

8. **Health and Safety Program.**
   The Bidder is to provide a copy of their Health, Safety and Environment Protection Program/Plan for qualification processing. However the winning Bidder will be required to follow JVD's recognized Health, Safety and Environmental Plan attached to the RFP. Confirmation of this acceptance shall be required.

9. **Quality Program.**
   The Bidder is to provide a copy of their Quality Assurance and Control Program or Plan along with their ITP's for the execution of the Work, in addition the resumes of Key Employees.

10. **Deviations and Alternatives.**
    The Bidder is to provide a list of all exclusions, deviations, substitutions and or exceptions to the Bid and the Subcontract Agreement. The Bidder is also to provide a list of any approved through RFI substitutions or alternatives.

11. **Insurance.**
    If the Parties enter into a Subcontract Agreement then the Bidder shall have to minimally comply with EXHIBIT G (Insurance Requirements).

Signed: 

Company: **WBHO Ghana Limited**

Name: **D. Calitz**

Title: **Authorised Signatory**

Dated: **6 October 2017**

RFP No.: 001-JVD-17

Attention: Shane Garvey or Sena Day E-Mail: sgarvey@jvdriver.com and sdey@jvdriver.com

Phone: 024 7838815 and 055 6558157

RE: Request for Proposal – GPHA-Unity Terminal KPONE-Design and Construction of a Container and Devanning Handling Terminal Project

RE: Request for Proposal –Design & Construction of a Container Handling & Devanning Terminal

FROM: **WBHO GHANA LIMITED**

(Name of Bidder)

Plot No 73 , Second Close , Airport Residential Area, Accra, Ghana

(Address of Bidder)

D. CALITZ

(Contact Name of Bidder)

The following specification sections are included here, and form an integral part of the bid documents:

Section No.	Title
1	General
2	Scope of Work
3	Submittals
4	Products
5	Execution

1. GENERAL

1.1 Scope

The following describes parameters for the supply of all labour, material and equipment for [redacted]. All procedures, operations, and methods shall be in strict accordance with the Engineer's Specifications, plans and drawings where applicable.

1.2 General

a) This section provides the Summary of Work for this RFP, referenced herein as the Work.

b) Work related to, but not included in the Scope of Work, is provided herein as Work by Others.
c) Whereas this specification makes reference to items in the singular and plural, this shall not necessarily imply scope with respect to the number of pieces required.

1.3 Quality Control

a) Subcontractor shall submit a Quality Control Plan to SCPP for approval prior to starting the Work.
b) SCPP may engage independent Quality Control specialists to undertake field testing that will cover the minimum specified coverage requirements.
c) Costs for other incremental testing requested by the Subcontractor above the minimum requirement and re-testing as a result of non-conformances will be borne by the Subcontractor.
d) The subcontractor is responsible for ensuring all Quality Control deliverables, documentation, and submittals are provided as required in the QMS Manual (Exhibit I). All documentation must be submitted in a timely fashion as completed.

2. SCOPE OF WORK

The Work for the Project generally comprises of, but is not limited to, the following; (including all materials, equipment, labour and fees necessary to complete the Work indicated on the Drawings, described in the Specifications, documents and Addenda or reasonably inferred) .

- Mobilization of all labour, equipment and materials to the Project Site. The pricing provided in the **LUMP SUM PRICE FOR EACH PACKAGE** is to account for accommodation, subsistence and transportation of personnel to/from site and from their home location and meeting all reporting and site pre-access requirements as per, but not limited to, the below:
    - Any machinery, facilities, equipment or vehicles provided by Subcontractor must have a valid permit to enter the work site and must have appropriate safety equipment installed (such as Industry Standard spill kits and fire extinguishers), be clean and in good working condition with no leaking fluids such as oils, coolants, transmission fluid, etc. – vehicles must be inspected daily.
    - Subcontractor will be responsible for providing all equipment and supporting small tools and consumables to perform the subcontract Work, including computers for storing and processing data, where required. The equipment shall be in good working order and properly

calibrated and certified for use in accordance with the Job Specification and quality control requirements stipulated in the QMS Manual.

- Subcontractor shall be responsible for preparing a daily report in a form or format approved by SCPP, summarizing the Subcontractors work activities completed during the day, any job instructions received and any concerns or issues that may impede productivity.
- Subcontractor will ensure that his nominated Key Employees are present or available to the Subcontractor crews at all times during the performance of the Subcontractor Works.
- Personal Protective Equipment ("PPE") shall be worn at all times. Additional PPE to be worn (as required for the Work being performed) shall be at minimum those identified in the Health & Safety Requirements (Exhibit H) and validated by a job site hazard assessment survey.
- PPE shall be the responsibility of the Subcontractor to provide to its personnel.
- Subcontractor shall provide Field Level Risk Assessments on a daily basis.
- Subcontractor must provide copies of their daily toolbox safety meeting minutes, number of crew members on site on a daily basis and hours worked each day.
- As a pre-condition of award, Subcontractor will be required to sign a memo stating that they agree to adhere to all safety requirements and practices detailed in Exhibit H (Health & Safety Requirements).
- Subcontractor will be responsible to insure that all of its personnel working on site meet site pre-access requirements, which shall include but not be limited to, the following:
    - Attendance of site orientation and induction (up to a half a day)
    - Drug & Alcohol Testing – showcasing clearance

  No personnel will be permitted on site without meeting these basic and minimum requirements.

- For further scope of Work see Exhibit C (request for Pricing).

2.1 Mobilization

Mobilize and undertake all necessary preparatory work and operations, including but not limited to, those required for the mobilization of personnel, equipment, materials for the temporary and permanent works and incidentals to the Project Site for execution of the Work.

2.2 Demobilization

Demobilize and undertake all activities for the removal of all personnel, equipment, excess materials & supplies which are no longer required in the execution of the Works. This includes the disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the Project Site for the Work. Provide all outstanding final deliverables including but not limited to as-built records, final permits, manuals and QA/QC documents.

2.3 Reporting Requirements

- A subcontractor specific Execution Plan ("EP") shall be submitted to JVD for approval within two (2) weeks of subcontract award. The EP shall express how the Subcontractor will facilitate the work awarded to it, and will define the personnel appointed to the project. A separate detailed mobilisation plan shall be submitted at the same time.
- All safety incidents having occurred on the Project Site shall be communicated immediately to JVD. The communication shall be followed up with an incident report within 48 hours.

2.4 Work by Others

The following associated work will be completed by others.

- The works has been divided into seven packages.
- There are various options to conclude the project works and a combination of sub-contractors is a possibility. If this is the case it shall be necessary for all sub-contractors shall to work in the interest of all other parties.

3. SUBMITTALS

The following is a summary of the required submittal packages.
Submittals will be accepted only in full and complete packages.
Submittal packages will not be accepted with missing or incomplete items.

Item No.	Submittal Package	Timing
1	Summary of Work Schedule	With Bid
2	Health, Safety and Environmental Protection Plan	10 Days prior to Start
3	Quality Assurance and Control Plan	10 Days prior to Start
4	Qualification Form	With Bid

5	Detailed Work Schedule	10 Days prior to Start
6	Environmental Protection Plans (EPP's)	10 Days prior to Start
7	Work Procedures (WP's)	10 Days prior to Start
8	Safety Incident Reports	48 HRS post incident
9	Monitoring Reports	As Requested
10	Progress Reports	Monthly
11	3 Week Schedule Look Ahead	Weekly
12	Completion Packages	Completion
13	Closeout Documents	Completion

4. SPECIFICATION DOCUMENT LIST

Item No.	Document Name	No. of Pages
1		
2		
3		
4		

5. EXECUTION

The Work shall be performed in such a manner as to complete the Work as follows;

a) Initial Subcontract Agreement (awarded by): 25th September 2017

b) Mobilize for 9th October 2017

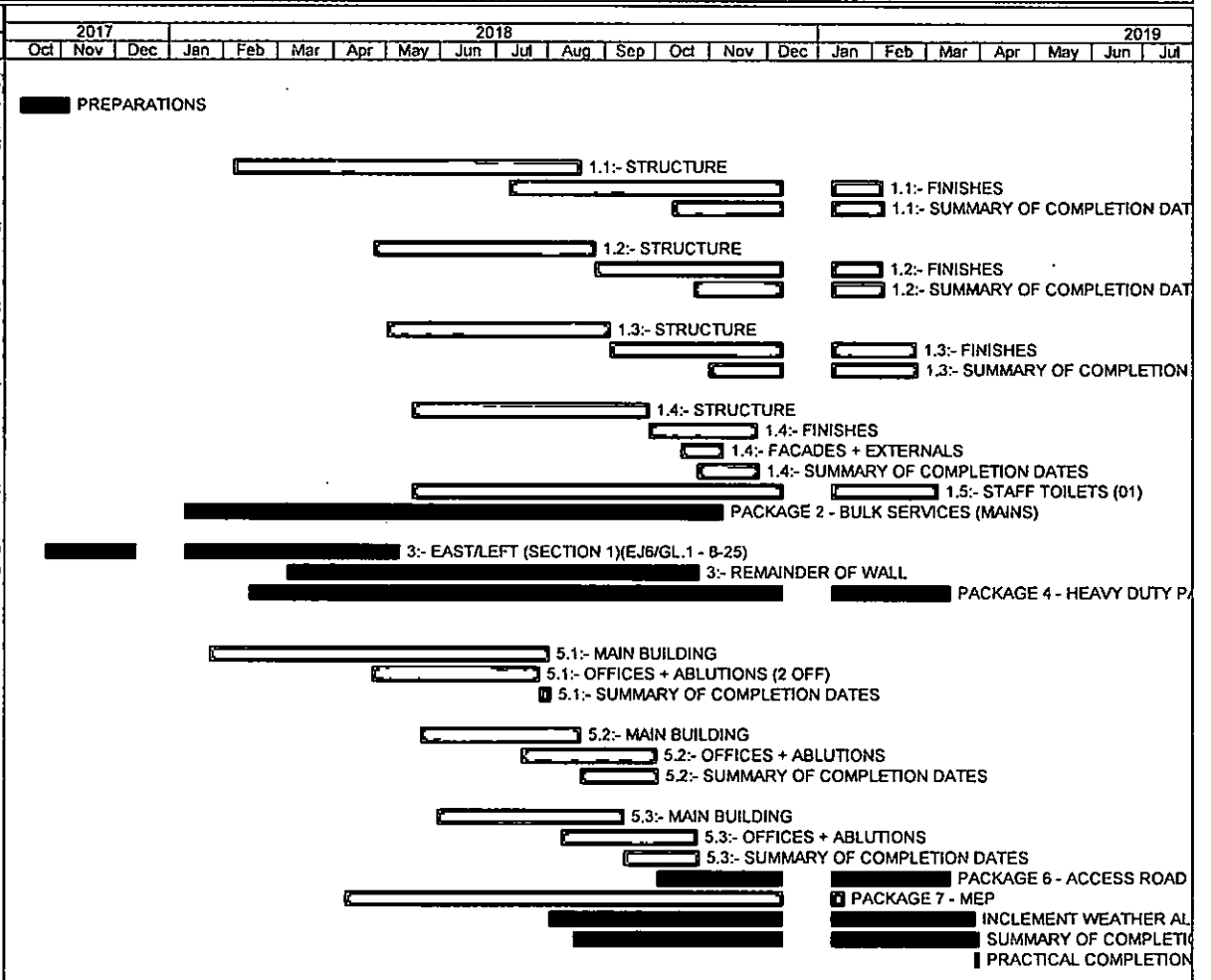
c) All work completed by 29th March 2019.

WBHO

Draft Tender Program - Rev A
Summary Barchart

KPONE UNITY TERMINAL
Practical Completion = 29 Mar 19

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
1000	KPONE UNITY TERMINAL	338	09 Oct 17	29 Mar 19	0
1002	PREPARATIONS	20	09 Oct 17	03 Nov 17	0
1008	PACKAGE 1 - BUILDINGS	255	07 Feb 18	07 Mar 19	6
1010	*1.1:- CUSTOMS HALL & GPHA OFFICES*	*235*	*07 Feb 18*	*07 Feb 19*	*6*
1012	1.1:- STRUCTURE	132	07 Feb 18	17 Aug 18	6
1108	1.1:- FINISHES	131	10 Jul 18	06 Feb 19	6
1438	1.1:- SUMMARY OF COMPLETION DATES	66	11 Oct 18	07 Feb 19	26
1452	*1.2:- BANK*	*184*	*25 Apr 18*	*07 Feb 19*	*6*
1454	1.2:- STRUCTURE	87	25 Apr 18	27 Aug 18	30
1468	1.2:- FINISHES	96	28 Aug 18	06 Feb 19	6
1598	1.2:- SUMMARY OF COMPLETION DATES	58	23 Oct 18	07 Feb 19	26
1606	*1.3:- BAR & COFFEE SHOP*	*193*	*02 May 18*	*26 Feb 19*	*6*
1608	1.3:- STRUCTURE	90	02 May 18	05 Sep 18	35
1642	1.3:- FINISHES	102	06 Sep 18	25 Feb 19	6
1824	1.3:- SUMMARY OF COMPLETION DATES	64	01 Nov 18	26 Feb 19	13
1832	*1.4:- CONTROL TOWER*	*139*	*16 May 18*	*28 Nov 18*	*57*
1834	1.4:- STRUCTURE	95	16 May 18	27 Sep 18	57
1878	1.4:- FINISHES	43	28 Sep 18	27 Nov 18	57
1972	1.4:- FACADES + EXTERNALS	18	16 Oct 18	08 Nov 18	70
1982	1.4:- SUMMARY OF COMPLETION DATES	25	25 Oct 18	28 Nov 18	57
1994	*1.5:- STAFF TOILETS (01)*	*190*	*16 May 18*	*07 Mar 19*	*6*
2136	PACKAGE 2 - BULK SERVICES (MAINS)	210	10 Jan 18	08 Nov 18	0
2144	PACKAGE 3 - RETAINING WALL	237	23 Oct 17	25 Oct 18	0
2146	*3:- EAST/LEFT (SECTION 1)(EJ6/GL.1 - B-25)*	*117*	*23 Oct 17*	*08 May 18*	*0*
2162	*3:- REMAINDER OF WALL*	*162*	*07 Mar 18*	*25 Oct 18*	*0*
2176	PACKAGE 4 - HEAVY DUTY PAVEMENT	253	16 Feb 18	14 Mar 19	0
2194	PACKAGE 5 - PRE-FAB STEEL BUILDINGS	190	24 Jan 18	25 Oct 18	9
2196	*5.1:- CONTAINER FREIGHT STATION*	*131*	*24 Jan 18*	*02 Aug 18*	*9*
2198	5.1:- MAIN BUILDING	130	24 Jan 18	01 Aug 18	9
2274	5.1:- OFFICES + ABLUTIONS (2 OFF)	66	24 Apr 18	26 Jul 18	144
2386	5.1:- SUMMARY OF COMPLETION DATES	5	27 Jul 18	02 Aug 18	140
2394	*5.2:- FIRE BAY*	*95*	*21 May 18*	*02 Oct 18*	*81*
2396	5.2:- MAIN BUILDING	64	21 May 18	17 Aug 18	81
2468	5.2:- OFFICES + ABLUTIONS	54	17 Jul 18	01 Oct 18	98
2580	5.2:- SUMMARY OF COMPLETION DATES	31	20 Aug 18	02 Oct 18	98
2588	*5.3:- MECHANICAL WORKSHOP*	*106*	*30 May 18*	*25 Oct 18*	*81*
2590	5.3:- MAIN BUILDING	77	30 May 18	13 Sep 18	81
2664	5.3:- OFFICES + ABLUTIONS	54	09 Aug 18	24 Oct 18	81
2776	5.3:- SUMMARY OF COMPLETION DATES	29	14 Sep 18	25 Oct 18	81
2784	PACKAGE 6 - ACCESS ROAD	98	02 Oct 18	14 Mar 19	0
2804	PACKAGE 7 - MEP	179	09 Apr 18	15 Jan 19	13
2808	INCLEMENT WEATHER ALLOWANCE	150	02 Aug 18	28 Mar 19	0
2832	SUMMARY OF COMPLETION DATES	141	16 Aug 18	29 Mar 19	0
2856	PRACTICAL COMPLETION	1	29 Mar 19	29 Mar 19	0



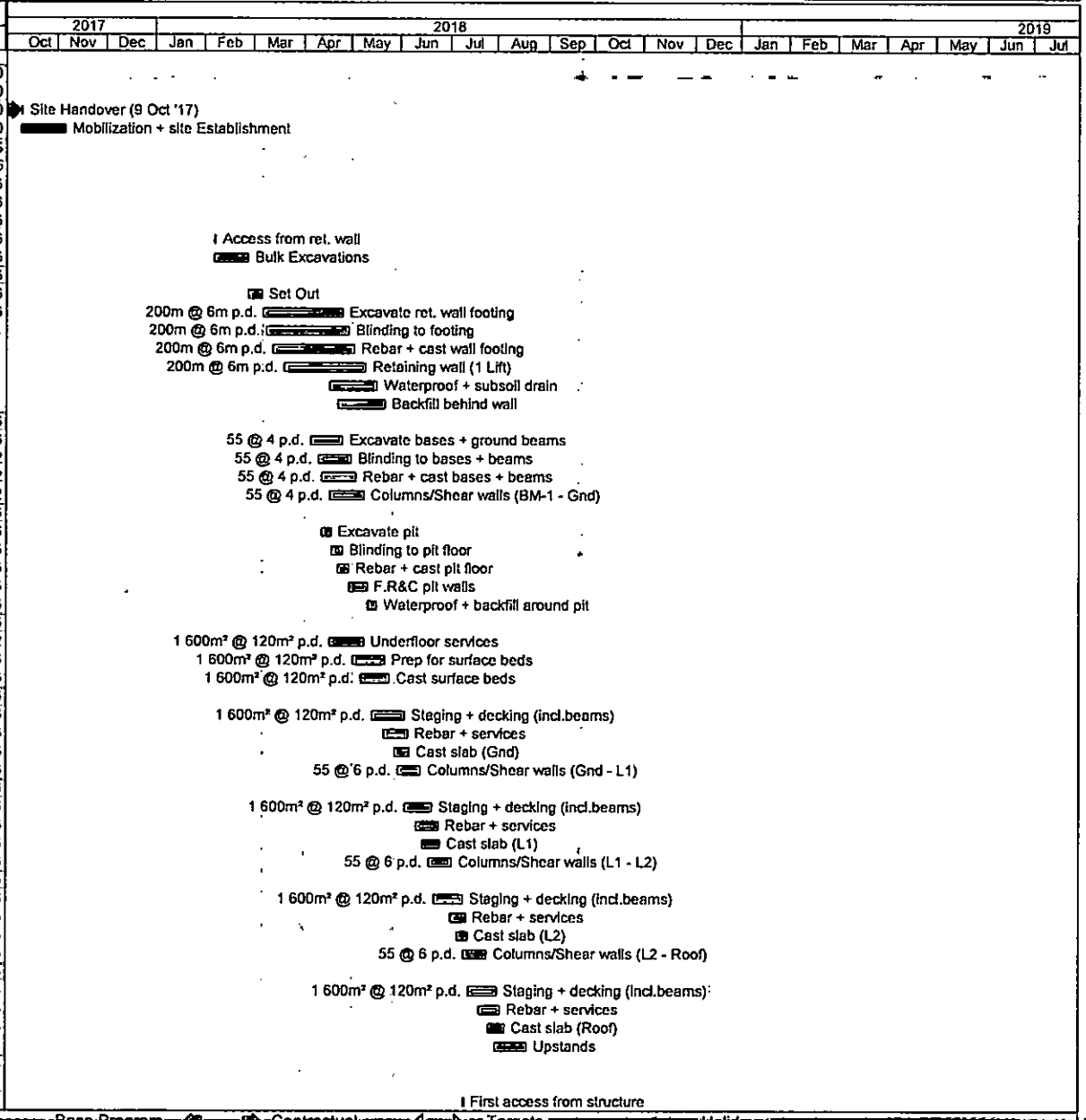
Legend | Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

WBHO

Draft Tender Program - Rev A
Detail Barchart

KPONE UNITY TERMINAL
Practical Completion = 29 Mar 19

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
1000	KPONE UNITY TERMINAL	338	09 Oct 17	29 Mar 19	0
1002	PREPARATIONS	20	09 Oct 17	03 Nov 17	0
1004	Site Handover (9 Oct '17)	1	09 Oct 17	09 Oct 17	0
1006	Mobilization + site Establishment	20	09 Oct 17	03 Nov 17	0
1008	PACKAGE 1 - BUILDINGS	255	07 Feb 18	07 Mar 19	6
1010	*1.1:- CUSTOMS HALL & GPHA OFFICES*	*235*	*07 Feb 18*	*07 Feb 19*	*6*
1012	1.1:- STRUCTURE	132	07 Feb 18	17 Aug 18	6
1014	1.1:- BASEMENT -1	72	07 Feb 18	24 May 18	6
1016	BM-1:- BULK EXCAVATIONS	15	07 Feb 18	27 Feb 18	6
1018	Access from ret. wall	1	07 Feb 18	07 Feb 18	6
1020	Bulk Excavations	15	07 Feb 18	27 Feb 18	6
1022	BM-1:- RET. WALLS	54	28 Feb 18	21 May 18	6
1024	Set Out	3	28 Feb 18	02 Mar 18	6
1026	Excavate ret. wall footing	34	07 Mar 18	25 Apr 18	6
1028	Blinding to footing	34	09 Mar 18	27 Apr 18	11
1030	Rebar + cast wall footing	34	13 Mar 18	02 May 18	11
1032	Retaining wall (1 Lift)	34	20 Mar 18	09 May 18	11
1034	Waterproof + subsoil drain	20	18 Apr 18	16 May 18	191
1036	Backfill behind wall	20	23 Apr 18	21 May 18	191
1038	BM-1:- BASES + COLUMNS + WALLS	22	06 Apr 18	08 May 18	6
1040	Excavate bases + ground beams	14	06 Apr 18	25 Apr 18	6
1042	Blinding to bases + beams	14	11 Apr 18	30 Apr 18	12
1044	Rebar + cast bases + beams	14	13 Apr 18	03 May 18	12
1046	Columns/Shear walls (BM-1 - Gnd)	14	18 Apr 18	08 May 18	12
1048	BM-1:- CORE PIT	23	13 Apr 18	16 May 18	6
1050	Excavate pit	4	13 Apr 18	18 Apr 18	6
1052	Blinding to pit floor	5	19 Apr 18	25 Apr 18	6
1054	Rebar + cast pit floor	5	23 Apr 18	27 Apr 18	6
1056	F.R&C pit walls	8	30 Apr 18	10 May 18	6
1058	Waterproof + backfill around pit	4	11 May 18	16 May 18	6
1060	BM-1:- SURFACE BED	26	18 Apr 18	24 May 18	6
1062	Underfloor services	14	18 Apr 18	08 May 18	12
1064	Prep for surface beds	14	02 May 18	21 May 18	6
1066	Cast surface beds	14	07 May 18	24 May 18	6
1068	1.1:- GROUND FLOOR	22	14 May 18	13 Jun 18	6
1070	Staging + decking (incl.beams)	14	14 May 18	01 Jun 18	6
1072	Rebar + services	11	21 May 18	05 Jun 18	6
1074	Cast slab (Gnd)	8	28 May 18	06 Jun 18	6
1076	Columns/Shear walls (Gnd - L1)	11	30 May 18	13 Jun 18	6
1078	1.1:- FIRST FLOOR - LEVEL 1	21	04 Jun 18	02 Jul 18	6
1080	Staging + decking (incl.beams)	13	04 Jun 18	20 Jun 18	6
1082	Rebar + services	10	11 Jun 18	22 Jun 18	6
1084	Cast slab (L1)	7	15 Jun 18	25 Jun 18	6
1086	Columns/Shear walls (L1 - L2)	10	19 Jun 18	02 Jul 18	6
1088	1.1:- SECOND FLOOR - LEVEL 2	23	22 Jun 18	24 Jul 18	6
1090	Staging + decking (incl.beams)	12	22 Jun 18	09 Jul 18	6
1092	Rebar + services	8	02 Jul 18	11 Jul 18	6
1094	Cast slab (L2)	5	06 Jul 18	12 Jul 18	6
1096	Columns/Shear walls (L2 - Roof)	11	10 Jul 18	24 Jul 18	6
1098	1.1:- ROOF LEVEL	26	13 Jul 18	17 Aug 18	6
1100	Staging + decking (incl.beams)	13	13 Jul 18	31 Jul 18	6
1102	Rebar + services	10	20 Jul 18	02 Aug 18	6
1104	Cast slab (Roof)	7	26 Jul 18	03 Aug 18	6
1106	Upstands	15	30 Jul 18	17 Aug 18	54
1108	1.1:- FINISHES	131	10 Jul 18	06 Feb 19	6
1110	1.1:- BASEMENT -1	66	10 Jul 18	10 Oct 18	91
1112	First access from structure	1	10 Jul 18	10 Jul 18	91



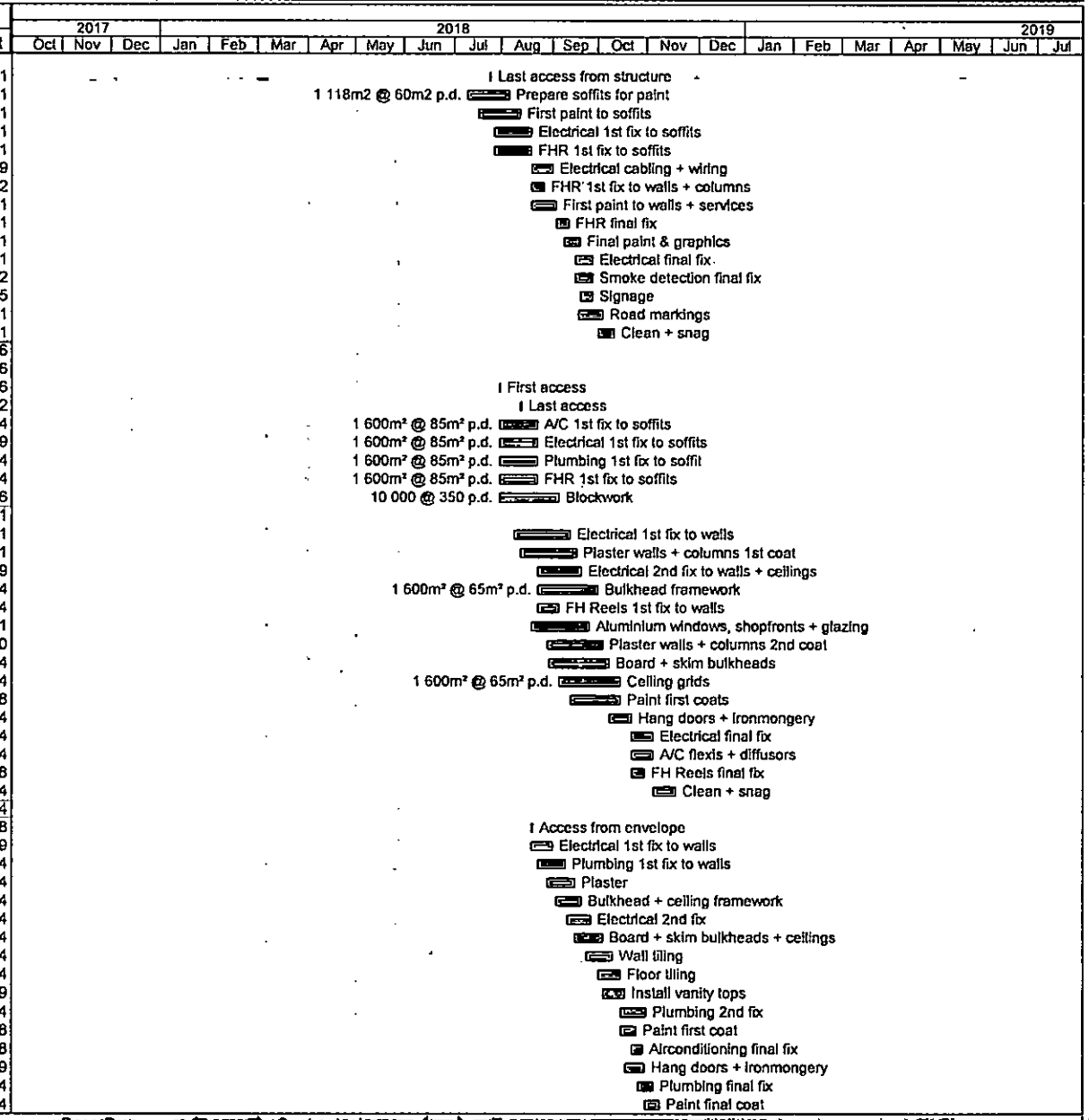
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

WBHO

Draft Tender Program - Rev A
Detail Barchart

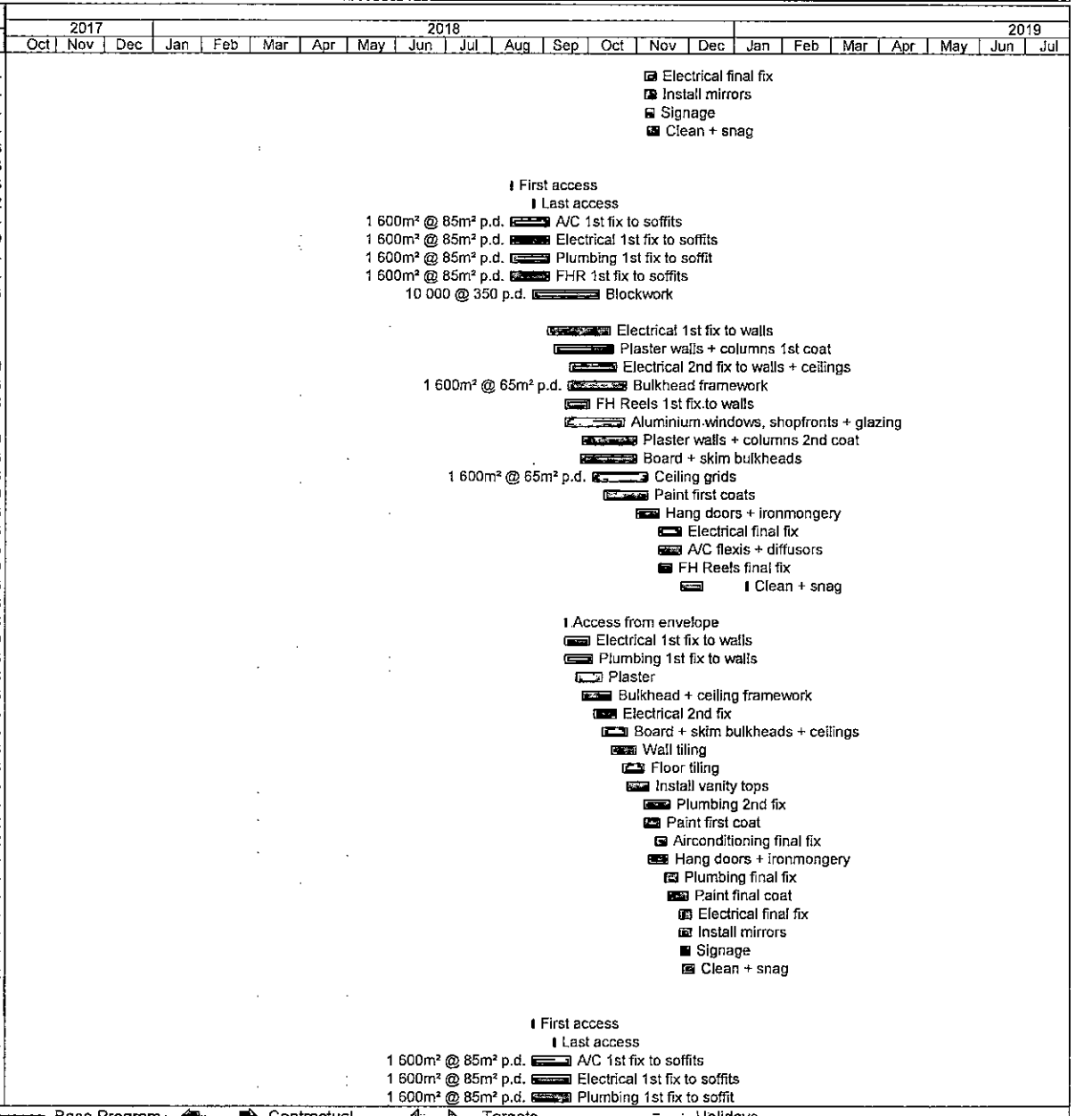
KPONE UNITY TERMINAL
Practical Completion = 29 Mar 19

Activity Nº	Activity Description	Durn	Current Start	Current Finish	Float
1114	Last access from structure	1	24 Jul 18	24 Jul 18	91
1116	Prepare soffits for paint	19	10 Jul 18	03 Aug 18	91
1118	First paint to soffits	19	17 Jul 18	10 Aug 18	91
1120	Electrical 1st fix to soffits	16	27 Jul 18	17 Aug 18	91
1122	FHR 1st fix to soffits	16	27 Jul 18	17 Aug 18	91
1124	Electrical cabling + wiring	10	20 Aug 18	31 Aug 18	99
1126	FHR 1st fix to walls + columns	6	20 Aug 18	27 Aug 18	92
1128	First paint to walls + services	12	20 Aug 18	04 Sep 18	91
1130	FHR final fix	6	05 Sep 18	12 Sep 18	91
1132	Final paint & graphics	8	10 Sep 18	19 Sep 18	91
1134	Electrical final fix	8	17 Sep 18	27 Sep 18	91
1136	Smoke detection final fix	8	17 Sep 18	27 Sep 18	92
1138	Signage	5	20 Sep 18	27 Sep 18	95
1140	Road markings	10	19 Sep 18	03 Oct 18	91
1142	Clean + snag	8	01 Oct 18	10 Oct 18	91
1144	1.1:- GROUND FLOOR	78	30 Jul 18	16 Nov 18	6
1146	GND:- WET TRADES + FIRST FIXES	29	30 Jul 18	06 Sep 18	6
1148	First access	1	30 Jul 18	30 Jul 18	6
1150	Last access	1	13 Aug 18	13 Aug 18	12
1152	A/C 1st fix to soffits	19	30 Jul 18	23 Aug 18	44
1154	Electrical 1st fix to soffits	19	30 Jul 18	23 Aug 18	49
1156	Plumbing 1st fix to soffit	19	30 Jul 18	23 Aug 18	44
1158	FHR 1st fix to soffits	19	30 Jul 18	23 Aug 18	44
1160	Blockwork	29	30 Jul 18	06 Sep 18	6
1162	GND:- OFFICE AREAS	71	09 Aug 18	16 Nov 18	31
1164	Electrical 1st fix to walls	26	09 Aug 18	13 Sep 18	31
1166	Plaster walls + columns 1st coat	26	13 Aug 18	17 Sep 18	31
1168	Electrical 2nd fix to walls + ceilings	20	24 Aug 18	20 Sep 18	69
1170	Bulkhead framework	25	24 Aug 18	28 Sep 18	64
1172	FH Reels 1st fix to walls	10	24 Aug 18	06 Sep 18	64
1174	Aluminium windows, shopfronts + glazing	26	20 Aug 18	25 Sep 18	31
1176	Plaster walls + columns 2nd coat	24	30 Aug 18	03 Oct 18	70
1178	Board + skim bulkheads	25	31 Aug 18	05 Oct 18	64
1180	Ceiling grids	25	07 Sep 18	12 Oct 18	64
1182	Paint first coats	20	14 Sep 18	12 Oct 18	68
1184	Hang doors + ironmongery	10	08 Oct 18	19 Oct 18	64
1186	Electrical final fix	10	22 Oct 18	02 Nov 18	64
1188	A/C flexis + diffusors	10	22 Oct 18	02 Nov 18	64
1190	FH Reels final fix	6	22 Oct 18	29 Oct 18	68
1192	Clean + snag	10	05 Nov 18	16 Nov 18	64
1194	GND:- ABLUTION + SERVICES	62	20 Aug 18	14 Nov 18	64
1196	Access from envelope	1	20 Aug 18	20 Aug 18	68
1198	Electrical 1st fix to walls	10	20 Aug 18	31 Aug 18	69
1200	Plumbing 1st fix to walls	12	24 Aug 18	10 Sep 18	64
1202	Plaster	12	30 Aug 18	14 Sep 18	64
1204	Bulkhead + ceiling framework	12	05 Sep 18	20 Sep 18	64
1206	Electrical 2nd fix	10	12 Sep 18	26 Sep 18	64
1208	Board + skim bulkheads + ceilings	12	17 Sep 18	03 Oct 18	64
1210	Wall tiling	12	24 Sep 18	09 Oct 18	64
1212	Floor tiling	10	01 Oct 18	12 Oct 18	64
1214	Install vanity tops	10	04 Oct 18	17 Oct 18	69
1216	Plumbing 2nd fix	12	15 Oct 18	30 Oct 18	64
1218	Paint first coat	8	15 Oct 18	24 Oct 18	68
1220	Airconditioning final fix	5	22 Oct 18	26 Oct 18	68
1222	Hang doors + ironmongery	8	18 Oct 18	29 Oct 18	69
1224	Plumbing final fix	6	26 Oct 18	02 Nov 18	64
1226	Paint final coat	8	30 Oct 18	08 Nov 18	64



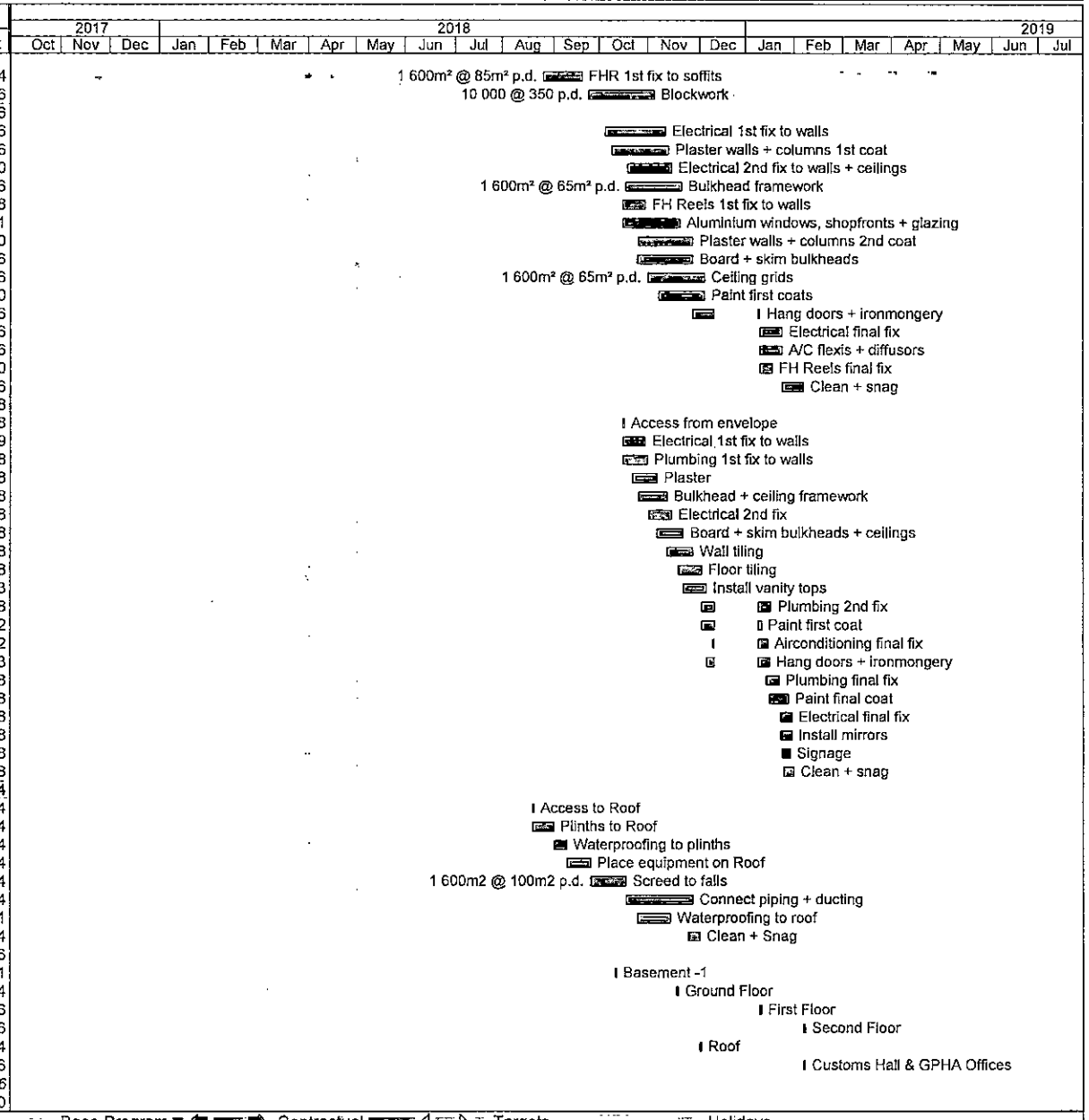
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
1228	Electrical final fix	5	06 Nov 18	12 Nov 18	64
1230	Install mirrors	5	06 Nov 18	12 Nov 18	64
1232	Signage	3	07 Nov 18	09 Nov 18	64
1234	Clean + snag	5	08 Nov 18	14 Nov 18	64
1236	1.1:- FIRST FLOOR - LEVEL 1	87	13 Aug 18	09 Jan 19	6
1238	1st:- WET TRADES + FIRST FIXES	39	13 Aug 18	05 Oct 18	6
1240	First access	1	13 Aug 18	13 Aug 18	16
1242	Last access	1	27 Aug 18	27 Aug 18	22
1244	A/C 1st fix to soffits	19	13 Aug 18	06 Sep 18	44
1246	Electrical 1st fix to soffits	19	13 Aug 18	06 Sep 18	49
1248	Plumbing 1st fix to soffit	19	13 Aug 18	06 Sep 18	44
1250	FHR 1st fix to soffits	19	13 Aug 18	06 Sep 18	44
1252	Blockwork	29	27 Aug 18	05 Oct 18	6
1254	1st:- OFFICE AREAS	69	06 Sep 18	09 Jan 19	31
1256	Electrical 1st fix to walls	26	06 Sep 18	12 Oct 18	31
1258	Plaster walls + columns 1st coat	26	10 Sep 18	16 Oct 18	31
1260	Electrical 2nd fix to walls + ceilings	20	20 Sep 18	18 Oct 18	50
1262	Bulkhead framework	25	19 Sep 18	24 Oct 18	46
1264	FH Reels 1st fix to walls	10	17 Sep 18	01 Oct 18	48
1266	Aluminium windows, shopfronts + glazing	26	17 Sep 18	23 Oct 18	31
1268	Plaster walls + columns 2nd coat	24	28 Sep 18	31 Oct 18	50
1270	Board + skim bulkheads	25	27 Sep 18	31 Oct 18	46
1272	Ceiling grids	25	04 Oct 18	07 Nov 18	46
1274	Paint first coats	20	11 Oct 18	07 Nov 18	50
1276	Hang doors + ironmongery	10	01 Nov 18	14 Nov 18	46
1278	Electrical final fix	10	15 Nov 18	28 Nov 18	46
1280	A/C flexis + diffusors	10	15 Nov 18	28 Nov 18	46
1282	FH Reels final fix	6	15 Nov 18	22 Nov 18	50
1284	Clean + snag	10	29 Nov 18	09 Jan 19	46
1286	1st:- ABLUTION + SERVICES	58	17 Sep 18	06 Dec 18	48
1288	Access from envelope	1	17 Sep 18	17 Sep 18	48
1290	Electrical 1st fix to walls	10	17 Sep 18	01 Oct 18	49
1292	Plumbing 1st fix to walls	12	17 Sep 18	03 Oct 18	48
1294	Plaster	12	24 Sep 18	09 Oct 18	48
1296	Bulkhead + ceiling framework	12	28 Sep 18	15 Oct 18	48
1298	Electrical 2nd fix	10	05 Oct 18	18 Oct 18	48
1300	Board + skim bulkheads + ceilings	12	10 Oct 18	25 Oct 18	48
1302	Wall tiling	12	16 Oct 18	31 Oct 18	48
1304	Floor tiling	10	23 Oct 18	05 Nov 18	48
1306	Install vanity tops	10	26 Oct 18	08 Nov 18	53
1308	Plumbing 2nd fix	12	06 Nov 18	21 Nov 18	48
1310	Paint first coat	8	06 Nov 18	15 Nov 18	52
1312	Airconditioning final fix	5	13 Nov 18	19 Nov 18	52
1314	Hang doors + ironmongery	8	09 Nov 18	20 Nov 18	53
1316	Plumbing final fix	6	19 Nov 18	26 Nov 18	48
1318	Paint final coat	8	21 Nov 18	30 Nov 18	48
1320	Electrical final fix	5	28 Nov 18	04 Dec 18	48
1322	Install mirrors	5	28 Nov 18	04 Dec 18	48
1324	Signage	3	29 Nov 18	03 Dec 18	48
1326	Clean + snag	5	30 Nov 18	06 Dec 18	48
1328	1.1:- SECOND FLOOR - LEVEL 2	97	27 Aug 18	05 Feb 19	6
1330	2nd:- WET TRADES + FIRST FIXES	49	27 Aug 18	02 Nov 18	6
1332	First access	1	27 Aug 18	27 Aug 18	26
1334	Last access	1	10 Sep 18	10 Sep 18	32
1336	A/C 1st fix to soffits	19	27 Aug 18	20 Sep 18	44
1338	Electrical 1st fix to soffits	19	27 Aug 18	20 Sep 18	49
1340	Plumbing 1st fix to soffit	19	27 Aug 18	20 Sep 18	44



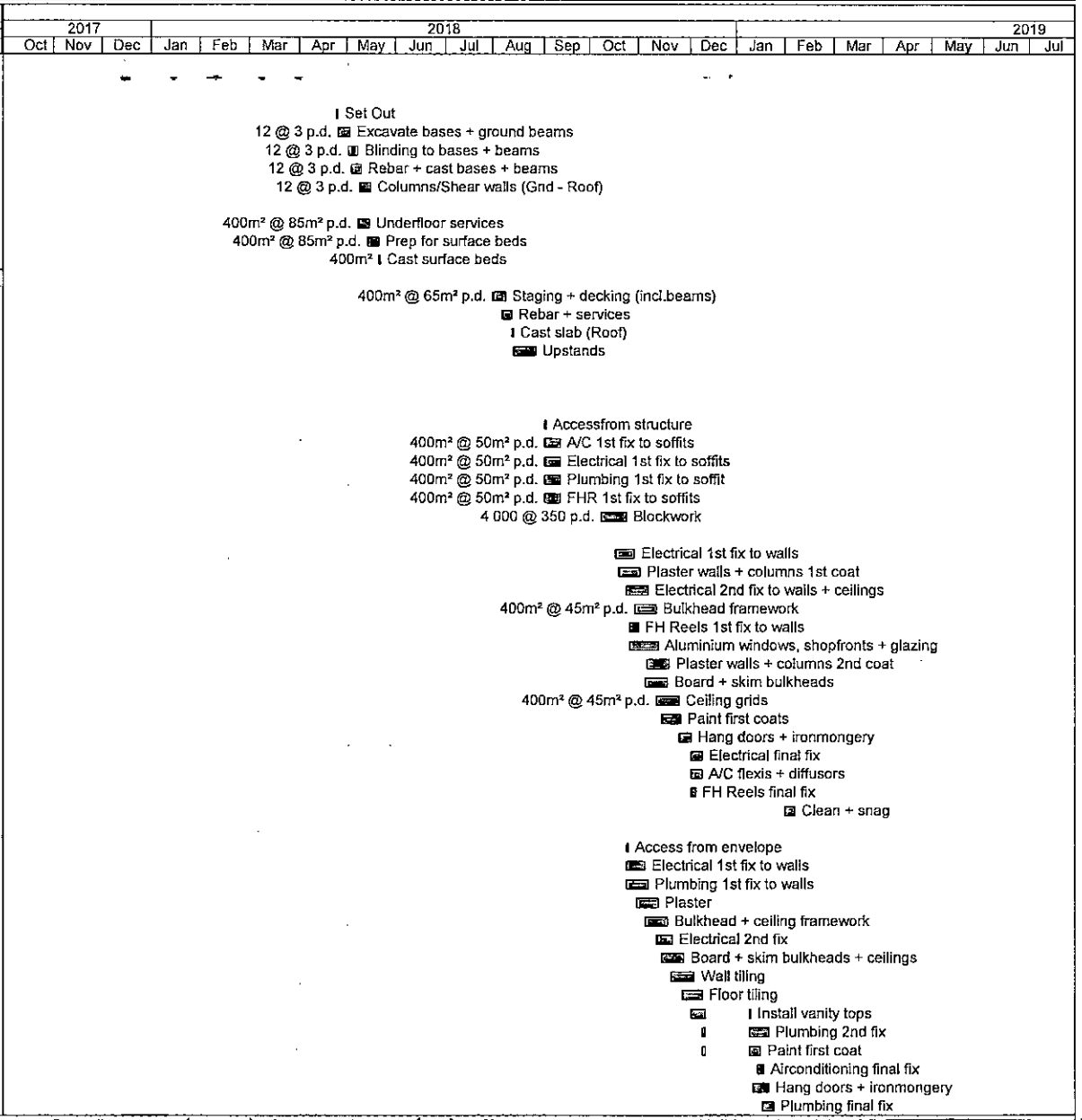
Legend: Non-critical · Critical · Overrun · Base Program · Contractual · Targets · Holidays

Activity Nº	Activity Description	Durn	Current Start	Current Finish	Float
1342	FHR 1st fix to soffits	19	27 Aug 18	20 Sep 18	44
1344	Blockwork	29	25 Sep 18	02 Nov 18	6
1346	2nd:- OFFICE AREAS	69	05 Oct 18	06 Feb 19	26
1348	Electrical 1st fix to walls	26	05 Oct 18	09 Nov 18	26
1350	Plaster walls + columns 1st coat	26	09 Oct 18	13 Nov 18	26
1352	Electrical 2nd fix to walls + ceilings	20	19 Oct 18	15 Nov 18	30
1354	Bulkhead framework	25	18 Oct 18	21 Nov 18	26
1356	FH Reels 1st fix to walls	10	16 Oct 18	29 Oct 18	28
1358	Aluminium windows, shopfronts + glazing	26	16 Oct 18	20 Nov 18	31
1360	Plaster walls + columns 2nd coat	24	26 Oct 18	28 Nov 18	30
1362	Board + skim bulkheads	25	25 Oct 18	28 Nov 18	26
1364	Ceiling grids	25	01 Nov 18	05 Dec 18	26
1366	Paint first coats	20	08 Nov 18	05 Dec 18	30
1368	Hang doors + ironmongery	10	29 Nov 18	09 Jan 19	26
1370	Electrical final fix	10	10 Jan 19	23 Jan 19	26
1372	A/C flexis + diffusors	10	10 Jan 19	23 Jan 19	26
1374	FH Reels final fix	6	10 Jan 19	17 Jan 19	30
1376	Clean + snag	10	24 Jan 19	06 Feb 19	26
1378	2nd:- ABLUTION + SERVICES	58	16 Oct 18	31 Jan 19	28
1380	Access from envelope	1	16 Oct 18	16 Oct 18	28
1382	Electrical 1st fix to walls	10	16 Oct 18	29 Oct 18	29
1384	Plumbing 1st fix to walls	12	16 Oct 18	31 Oct 18	28
1386	Plaster	12	22 Oct 18	06 Nov 18	28
1388	Bulkhead + ceiling framework	12	26 Oct 18	12 Nov 18	28
1390	Electrical 2nd fix	10	02 Nov 18	15 Nov 18	28
1392	Board + skim bulkheads + ceilings	12	07 Nov 18	22 Nov 18	28
1394	Wall tiling	12	13 Nov 18	28 Nov 18	28
1396	Floor tiling	10	20 Nov 18	03 Dec 18	28
1398	Install vanity tops	10	23 Nov 18	06 Dec 18	33
1400	Plumbing 2nd fix	12	04 Dec 18	16 Jan 19	28
1402	Paint first coat	8	04 Dec 18	10 Jan 19	32
1404	Airconditioning final fix	5	11 Dec 18	14 Jan 19	32
1406	Hang doors + ironmongery	8	07 Dec 18	15 Jan 19	33
1408	Plumbing final fix	6	14 Jan 19	21 Jan 19	28
1410	Paint final coat	8	16 Jan 19	25 Jan 19	28
1412	Electrical final fix	5	23 Jan 19	29 Jan 19	28
1414	Install mirrors	5	23 Jan 19	29 Jan 19	28
1416	Signage	3	24 Jan 19	28 Jan 19	28
1418	Clean + snag	5	25 Jan 19	31 Jan 19	28
1420	1.1:- ROOF LEVEL	74	20 Aug 18	30 Nov 18	54
1422	Access to Roof	1	20 Aug 18	20 Aug 18	54
1424	Plinths to Roof	10	20 Aug 18	31 Aug 18	54
1426	Waterproofing to plinths	6	03 Sep 18	10 Sep 18	54
1428	Place equipment on Roof	10	11 Sep 18	25 Sep 18	54
1430	Screed to falls	16	26 Sep 18	17 Oct 18	54
1432	Connect piping + ducting	30	18 Oct 18	28 Nov 18	54
1434	Waterproofing to roof	15	25 Oct 18	14 Nov 18	61
1436	Clean + Snag	5	26 Nov 18	30 Nov 18	54
1438	1.1:- SUMMARY OF COMPLETION DATES	66	11 Oct 18	07 Feb 19	26
1440	Basement -1	1	11 Oct 18	11 Oct 18	91
1442	Ground Floor	1	19 Nov 18	19 Nov 18	64
1444	First Floor	1	10 Jan 19	10 Jan 19	46
1446	Second Floor	1	07 Feb 19	07 Feb 19	26
1448	Roof	1	03 Dec 18	03 Dec 18	54
1450	Customs Hall & GPHA Offices	1	07 Feb 19	07 Feb 19	26
1452	*1.2:- BANK*	*184*	*25 Apr 18*	*07 Feb 19*	*6*
1454	1.2:- STRUCTURE	87	25 Apr 18	27 Aug 18	30



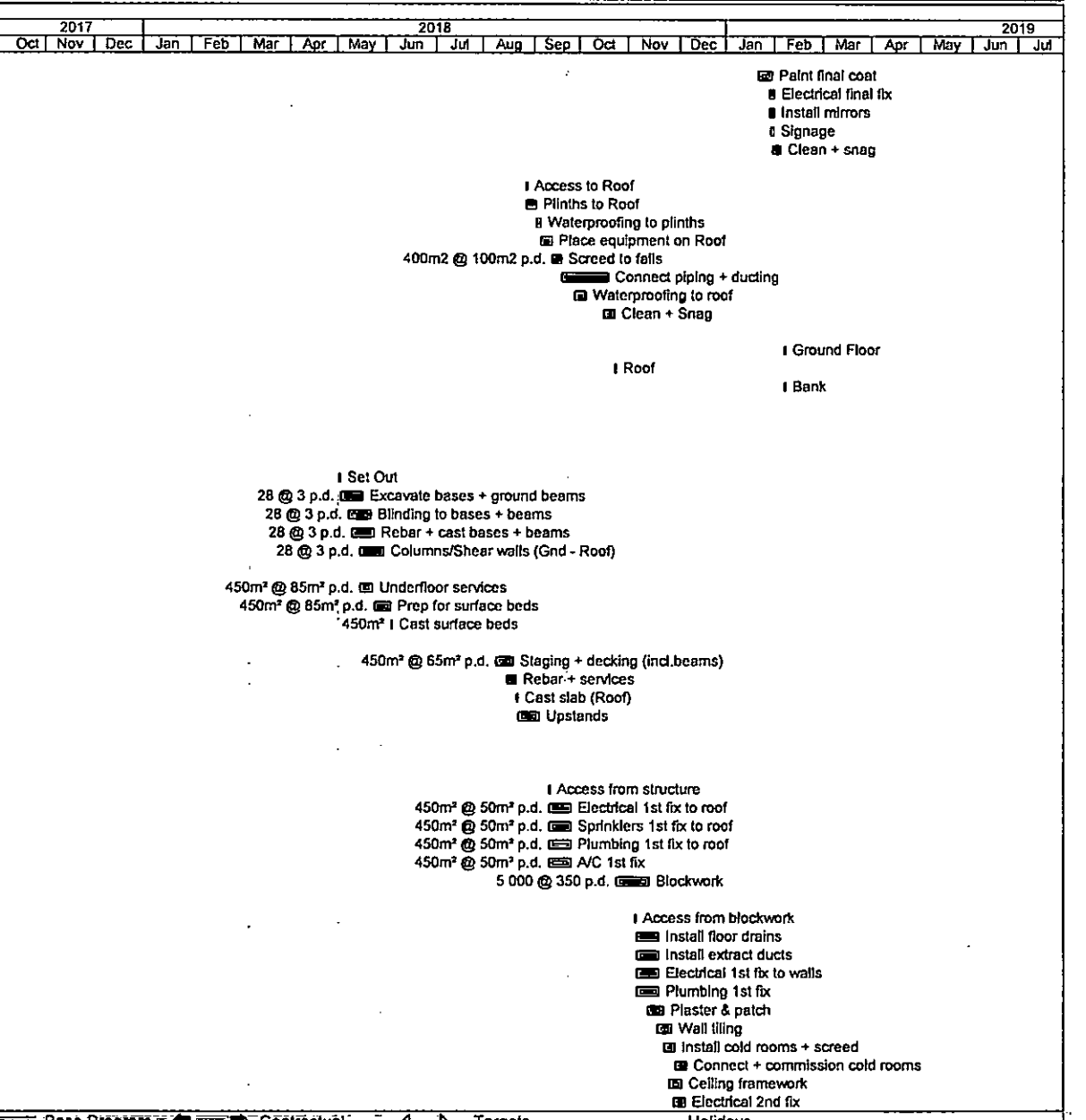
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
1456	1.2:- GROUND FLOOR	18	25 Apr 18	21 May 18	80
1458	Gnd:- BASES + COLUMNS + WALLS	14	25 Apr 18	15 May 18	80
1460	Set Out	1	25 Apr 18	25 Apr 18	80
1462	Excavate bases + ground beams	4	26 Apr 18	02 May 18	80
1464	Blinding to bases + beams	4	02 May 18	07 May 18	80
1466	Rebar + cast bases + beams	4	04 May 18	09 May 18	80
1468	Columns/Shear walls (Gnd - Roof)	5	09 May 18	15 May 18	80
1470	Gnd:- SURFACE BED	10	08 May 18	21 May 18	80
1472	Underfloor services	5	08 May 18	14 May 18	81
1474	Prep for surface beds	5	14 May 18	18 May 18	80
1476	Cast surface beds	1	21 May 18	21 May 18	80
1478	1.2:- ROOF	19	01 Aug 18	27 Aug 18	30
1480	Staging + decking (incl.beams)	6	01 Aug 18	08 Aug 18	30
1482	Rebar + services	4	07 Aug 18	10 Aug 18	30
1484	Cast slab (Roof)	1	13 Aug 18	13 Aug 18	30
1486	Upstands	10	14 Aug 18	27 Aug 18	83
1488	1.2:- FINISHES	96	28 Aug 18	06 Feb 19	6
1490	1.2:- GROUND FLOOR	92	03 Sep 18	06 Feb 19	6
1492	GND:- WET,TRADES + FIRST FIXES	36	03 Sep 18	23 Oct 18	6
1494	Accessfrom structure	1	03 Sep 18	03 Sep 18	30
1496	A/C 1st fix to soffits	8	03 Sep 18	12 Sep 18	75
1498	Electrical 1st fix to soffits	8	03 Sep 18	12 Sep 18	80
1500	Plumbing 1st fix to soffit	8	03 Sep 18	12 Sep 18	54
1502	FHR 1st fix to soffits	8	03 Sep 18	12 Sep 18	75
1504	Blockwork	12	08 Oct 18	23 Oct 18	6
1506	GND:- OFFICE AREAS	61	17 Oct 18	06 Feb 19	26
1508	Electrical 1st fix to walls	8	17 Oct 18	26 Oct 18	44
1510	Plaster walls + columns 1st coat	10	19 Oct 18	01 Nov 18	44
1512	Electrical 2nd fix to walls + ceilings	10	24 Oct 18	06 Nov 18	52
1514	Bulkhead framework	10	29 Oct 18	09 Nov 18	44
1516	FH Reels 1st fix to walls	4	26 Oct 18	31 Oct 18	51
1518	Aluminium windows, shopfronts + glazing	12	26 Oct 18	12 Nov 18	47
1520	Plaster walls + columns 2nd coat	10	06 Nov 18	19 Nov 18	47
1522	Board + skim bulkheads	10	05 Nov 18	16 Nov 18	44
1524	Ceiling grids	10	12 Nov 18	23 Nov 18	44
1526	Paint first coats	8	15 Nov 18	26 Nov 18	47
1528	Hang doors + ironmongery	5	26 Nov 18	30 Nov 18	44
1530	Electrical final fix	5	03 Dec 18	07 Dec 18	44
1532	A/C flexis + diffusors	5	03 Dec 18	07 Dec 18	44
1534	FH Reels final fix	3	03 Dec 18	05 Dec 18	46
1536	Clean + snag	5	31 Jan 19	06 Feb 19	26
1538	GND:- ABLUTION + SERVICES	54	24 Oct 18	04 Feb 19	26
1540	Access from envelope	1	24 Oct 18	24 Oct 18	26
1542	Electrical 1st fix to walls	8	24 Oct 18	02 Nov 18	27
1544	Plumbing 1st fix to walls	10	24 Oct 18	06 Nov 18	26
1546	Plaster	10	30 Oct 18	12 Nov 18	26
1548	Bulkhead + ceiling framework	10	05 Nov 18	16 Nov 18	26
1550	Electrical 2nd fix	8	12 Nov 18	21 Nov 18	26
1552	Board + skim bulkheads + ceilings	10	15 Nov 18	28 Nov 18	26
1554	Wall tiling	10	21 Nov 18	04 Dec 18	26
1556	Floor tiling	8	28 Nov 18	07 Dec 18	26
1558	Install vanity tops	8	03 Dec 18	09 Jan 19	29
1560	Plumbing 2nd fix	10	10 Dec 18	18 Jan 19	26
1562	Paint first coat	7	10 Dec 18	15 Jan 19	29
1564	Airconditioning final fix	4	14 Jan 19	17 Jan 19	29
1566	Hang doors + ironmongery	6	11 Jan 19	18 Jan 19	29
1568	Plumbing final fix	5	17 Jan 19	23 Jan 19	26



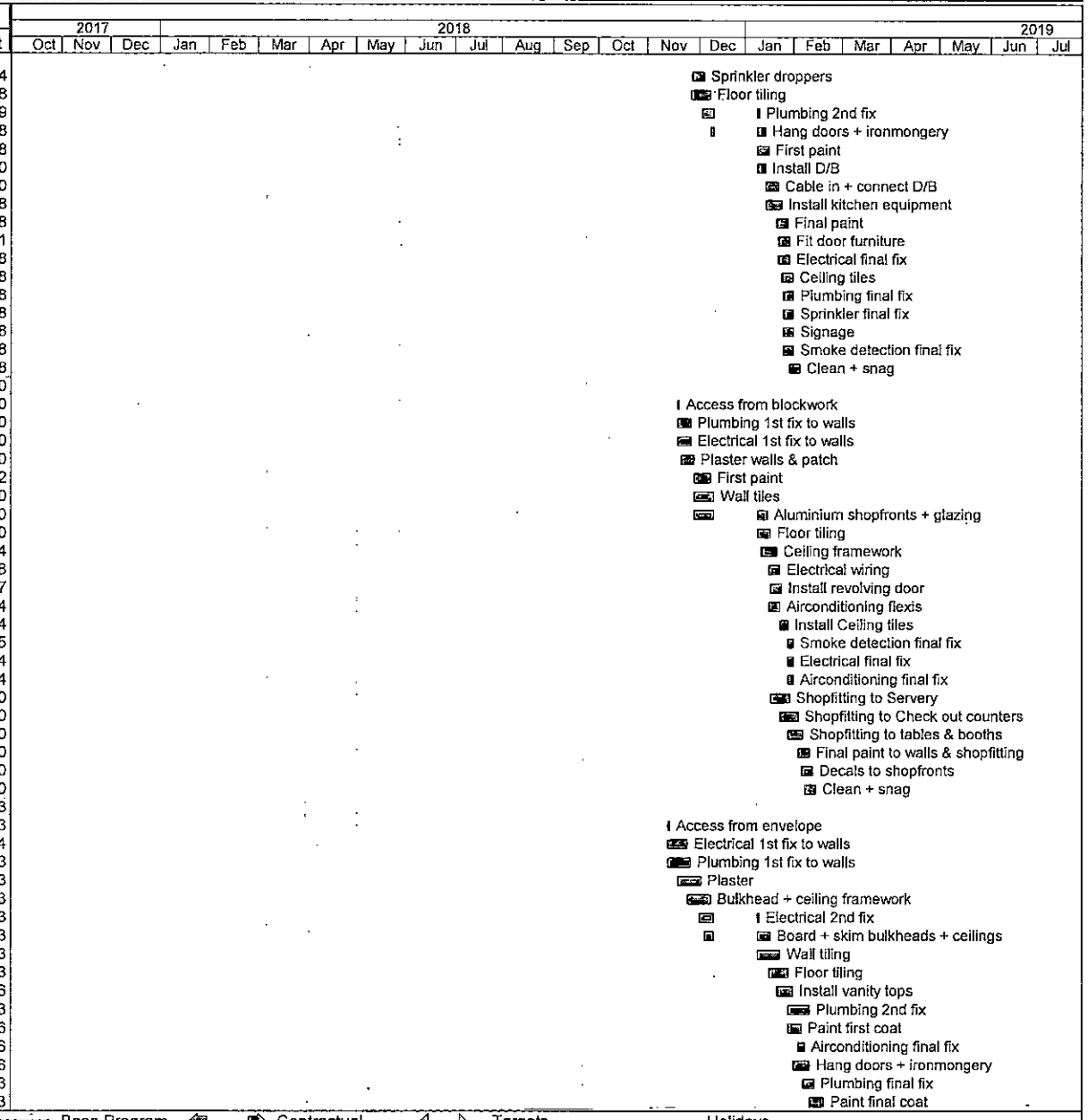
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity Nº	Activity Description	Dum	Current Start	Current Finish	Float
1570	Paint final coat	7	21 Jan 19	29 Jan 19	26
1572	Electrical final fix	4	28 Jan 19	31 Jan 19	26
1574	Install mirrors	4	28 Jan 19	31 Jan 19	26
1576	Signage	2	29 Jan 19	30 Jan 19	26
1578	Clean + snag	4	30 Jan 19	04 Feb 19	26
1580	1.2:- ROOF	39	28 Aug 18	22 Oct 18	83
1582	Access to Roof	1	28 Aug 18	28 Aug 18	83
1584	Plinths to Roof	5	28 Aug 18	03 Sep 18	83
1586	Waterproofing to plinths	3	04 Sep 18	06 Sep 18	83
1588	Place equipment on Roof	5	07 Sep 18	13 Sep 18	83
1590	Screed to falls	4	14 Sep 18	19 Sep 18	83
1592	Connect piping + ducting	20	20 Sep 18	18 Oct 18	83
1594	Waterproofing to roof	5	28 Sep 18	04 Oct 18	90
1596	Clean + Snag	5	16 Oct 18	22 Oct 18	83
1598	1.2:- SUMMARY OF COMPLETION DATES	58	23 Oct 18	07 Feb 19	26
1600	Ground Floor	1	07 Feb 19	07 Feb 19	26
1602	Roof	1	23 Oct 18	23 Oct 18	83
1604	Bank	1	07 Feb 19	07 Feb 19	26
1606	*1.3:- BAR & COFFEE SHOP*	*193*	*02 May 18*	*26 Feb 19*	6
1608	1.3:- STRUCTURE	90	02 May 18	05 Sep 18	35
1610	1.3:- GROUND FLOOR	23	02 May 18	04 Jun 18	81
1612	Gnd:- BASES + COLUMNS + WALLS	19	02 May 18	29 May 18	81
1614	Set Out	1	02 May 18	02 May 18	81
1616	Excavate bases + ground beams	10	03 May 18	16 May 18	81
1618	Blinding to bases + beams	10	08 May 18	21 May 18	82
1620	Rebar + cast bases + beams	10	10 May 18	23 May 18	82
1622	Columns/Shear walls (Gnd - Roof)	10	15 May 18	29 May 18	82
1624	Gnd:- SURFACE BED	14	15 May 18	04 Jun 18	82
1626	Underfloor services	6	15 May 18	22 May 18	86
1628	Prep for surface beds	6	24 May 18	01 Jun 18	82
1630	Cast surface beds	1	04 Jun 18	04 Jun 18	82
1632	1.3:- ROOF	20	09 Aug 18	05 Sep 18	35
1634	Staging + decking (incl.beams)	7	09 Aug 18	17 Aug 18	35
1636	Rebar + services	4	16 Aug 18	21 Aug 18	35
1638	Cast slab (Roof)	1	22 Aug 18	22 Aug 18	35
1640	Upstands	10	23 Aug 18	05 Sep 18	76
1642	1.3:- FINISHES	102	06 Sep 18	25 Feb 19	6
1644	1.3:- GROUND FLOOR	98	12 Sep 18	25 Feb 19	6
1646	GND:- WET TRADES + FIRST FIXES	44	12 Sep 18	13 Nov 18	6
1648	Access from structure	1	12 Sep 18	12 Sep 18	35
1650	Electrical 1st fix to roof	9	12 Sep 18	25 Sep 18	75
1652	Sprinklers 1st fix to roof	9	12 Sep 18	25 Sep 18	75
1654	Plumbing 1st fix to roof	9	12 Sep 18	25 Sep 18	75
1656	A/C 1st fix	9	12 Sep 18	25 Sep 18	75
1658	Blockwork	15	24 Oct 18	13 Nov 18	6
1660	GND:- KITCHEN	46	05 Nov 18	04 Feb 19	20
1662	Access from blockwork	1	05 Nov 18	05 Nov 18	20
1664	Install floor drains	10	06 Nov 18	19 Nov 18	34
1666	Install extract ducts	10	06 Nov 18	19 Nov 18	41
1668	Electrical 1st fix to walls	10	06 Nov 18	19 Nov 18	20
1670	Plumbing 1st fix	10	06 Nov 18	19 Nov 18	20
1672	Plaster & patch	8	13 Nov 18	22 Nov 18	28
1674	Wall tiling	7	19 Nov 18	27 Nov 18	28
1676	Install cold rooms + screed	5	23 Nov 18	29 Nov 18	30
1678	Connect + commission cold rooms	5	30 Nov 18	06 Dec 18	39
1680	Ceiling framework	6	26 Nov 18	03 Dec 18	32
1682	Electrical 2nd fix	5	29 Nov 18	05 Dec 18	32



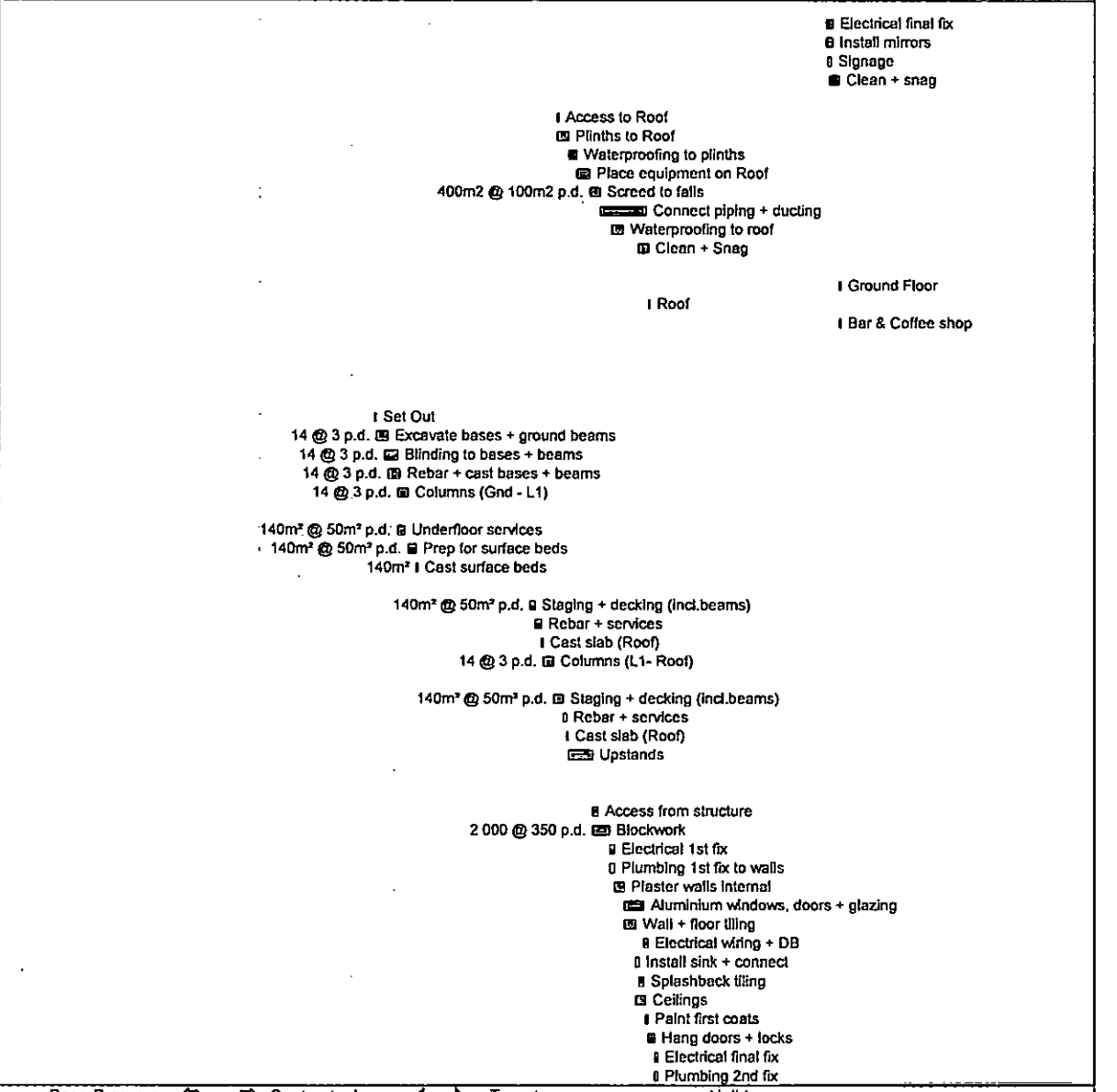
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
1684	Sprinkler droppers	5	29 Nov 18	05 Dec 18	44
1686	Floor tiling	8	28 Nov 18	07 Dec 18	28
1688	Plumbing 2nd fix	6	05 Dec 18	09 Jan 19	39
1690	Hang doors + ironmongery	5	10 Dec 18	11 Jan 19	28
1692	First paint	5	09 Jan 19	15 Jan 19	28
1694	Install D/B	3	09 Jan 19	11 Jan 19	30
1696	Cable in + connect D/B	6	14 Jan 19	21 Jan 19	30
1698	Install kitchen equipment	8	14 Jan 19	23 Jan 19	28
1700	Final paint	5	21 Jan 19	25 Jan 19	28
1702	Fit door furniture	5	22 Jan 19	28 Jan 19	31
1704	Electrical final fix	5	22 Jan 19	28 Jan 19	28
1706	Ceiling tiles	5	24 Jan 19	30 Jan 19	28
1708	Plumbing final fix	5	25 Jan 19	31 Jan 19	28
1710	Sprinkler final fix	5	25 Jan 19	31 Jan 19	28
1712	Signage	5	25 Jan 19	31 Jan 19	28
1714	Smoke detection final fix	5	25 Jan 19	31 Jan 19	28
1716	Clean + snag	5	29 Jan 19	04 Feb 19	28
1718	GND:- CANTEEN + SERVERY	43	20 Nov 18	14 Feb 19	20
1720	Access from blockwork	1	20 Nov 18	20 Nov 18	20
1722	Plumbing 1st fix to walls	6	20 Nov 18	27 Nov 18	20
1724	Electrical 1st fix to walls	6	20 Nov 18	27 Nov 18	20
1726	Plaster walls & patch	6	22 Nov 18	29 Nov 18	20
1728	First paint	6	30 Nov 18	07 Dec 18	32
1730	Wall tiles	8	30 Nov 18	11 Dec 18	20
1732	Aluminium shopfronts + glazing	12	30 Nov 18	14 Jan 19	20
1734	Floor tiling	6	09 Jan 19	16 Jan 19	20
1736	Ceiling framework	6	11 Jan 19	18 Jan 19	24
1738	Electrical wiring	5	16 Jan 19	22 Jan 19	28
1740	Install revolving door	5	17 Jan 19	23 Jan 19	27
1742	Airconditioning flexis	5	16 Jan 19	22 Jan 19	24
1744	Install Ceiling tiles	3	23 Jan 19	25 Jan 19	24
1746	Smoke detection final fix	4	28 Jan 19	31 Jan 19	25
1748	Electrical final fix	4	28 Jan 19	31 Jan 19	24
1750	Airconditioning final fix	4	28 Jan 19	31 Jan 19	24
1752	Shopfitting to Servery	8	17 Jan 19	28 Jan 19	20
1754	Shopfitting to Check out counters	8	23 Jan 19	01 Feb 19	20
1756	Shopfitting to tables & booths	8	28 Jan 19	06 Feb 19	20
1758	Final paint to walls & shopfitting	5	04 Feb 19	08 Feb 19	20
1760	Decals to shopfronts	5	06 Feb 19	12 Feb 19	20
1762	Clean + snag	5	08 Feb 19	14 Feb 19	20
1764	GND:- ABLUTION + SERVICES	54	14 Nov 18	25 Feb 19	13
1766	Access from envelope	1	14 Nov 18	14 Nov 18	13
1768	Electrical 1st fix to walls	8	14 Nov 18	23 Nov 18	14
1770	Plumbing 1st fix to walls	10	14 Nov 18	27 Nov 18	13
1772	Plaster	10	20 Nov 18	03 Dec 18	13
1774	Bulkhead + ceiling framework	10	26 Nov 18	07 Dec 18	13
1776	Electrical 2nd fix	8	03 Dec 18	09 Jan 19	13
1778	Board + skim bulkheads + ceilings	10	06 Dec 18	16 Jan 19	13
1780	Wall tiling	10	09 Jan 19	22 Jan 19	13
1782	Floor tiling	8	16 Jan 19	25 Jan 19	13
1784	Install vanity tops	8	21 Jan 19	30 Jan 19	16
1786	Plumbing 2nd fix	10	28 Jan 19	08 Feb 19	13
1788	Paint first coat	7	28 Jan 19	05 Feb 19	16
1790	Airconditioning final fix	4	04 Feb 19	07 Feb 19	16
1792	Hang doors + ironmongery	6	01 Feb 19	08 Feb 19	16
1794	Plumbing final fix	5	07 Feb 19	13 Feb 19	13
1796	Paint final coat	7	11 Feb 19	19 Feb 19	13



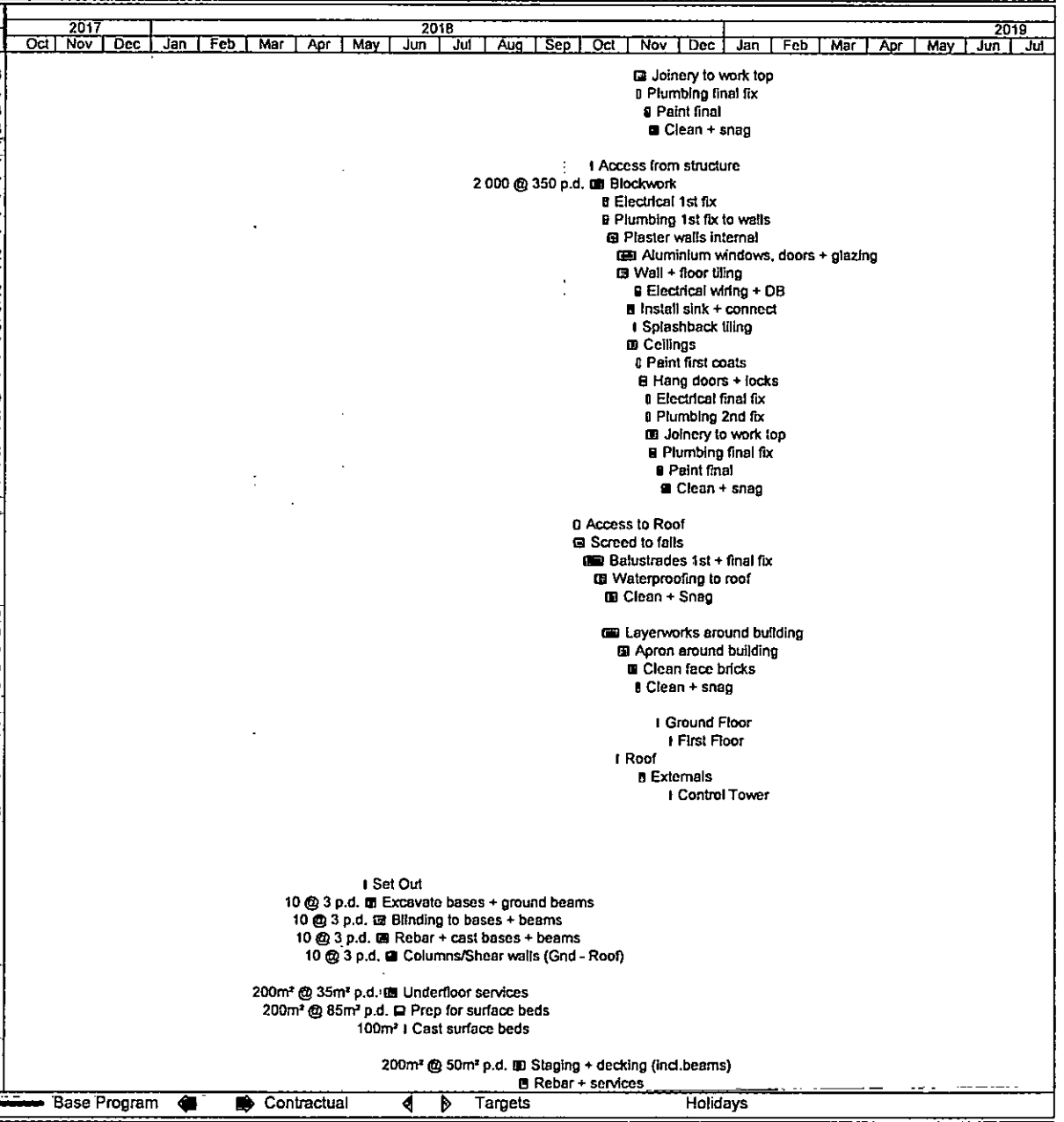
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity Nº	Activity Description	Durn	Current Start	Current Finish	Float
1798	Electrical final fix	4	18 Feb 19	21 Feb 19	13
1800	Install mirrors	4	18 Feb 19	21 Feb 19	13
1802	Signage	2	19 Feb 19	20 Feb 19	13
1804	Clean + snag	4	20 Feb 19	25 Feb 19	13
1806	1.3:- ROOF	39	06 Sep 18	31 Oct 18	76
1808	Access to Roof	1	06 Sep 18	06 Sep 18	76
1810	Plinths to Roof	5	06 Sep 18	12 Sep 18	76
1812	Waterproofing to plinths	3	13 Sep 18	17 Sep 18	76
1814	Place equipment on Roof	5	18 Sep 18	25 Sep 18	76
1816	Screed to falls	4	26 Sep 18	01 Oct 18	76
1818	Connect piping + ducting	20	02 Oct 18	29 Oct 18	76
1820	Waterproofing to roof	5	09 Oct 18	15 Oct 18	83
1822	Clean + Snag	5	25 Oct 18	31 Oct 18	76
1824	1.3:- SUMMARY OF COMPLETION DATES	64	01 Nov 18	26 Feb 19	13
1826	Ground Floor	1	26 Feb 19	26 Feb 19	13
1828	Roof	1	01 Nov 18	01 Nov 18	76
1830	Bar & Coffee shop	1	26 Feb 19	26 Feb 19	13
1832	*1.4:- CONTROL TOWER*	*139*	*16 May 18*	*28 Nov 18*	*57*
1834	1.4:- STRUCTURE	95	16 May 18	27 Sep 18	57
1836	1.4:- GROUND FLOOR	18	16 May 18	11 Jun 18	81
1838	Gnd:- BASES + COLUMNS	14	16 May 18	05 Jun 18	81
1840	Set Out	1	16 May 18	16 May 18	81
1842	Excavate bases + ground beams	5	17 May 18	23 May 18	81
1844	Blinding to bases + beams	5	22 May 18	29 May 18	106
1846	Rebar + cast bases + beams	5	24 May 18	31 May 18	106
1848	Columns (Gnd - L1)	5	30 May 18	05 Jun 18	106
1850	Gnd:- SURFACE BED	9	30 May 18	11 Jun 18	106
1852	Underfloor services	3	30 May 18	01 Jun 18	108
1854	Prep for surface beds	3	06 Jun 18	08 Jun 18	106
1856	Cast surface beds	1	11 Jun 18	11 Jun 18	106
1858	1.4:- LEVEL 1	11	20 Aug 18	03 Sep 18	57
1860	Staging + decking (incl.beams)	3	20 Aug 18	22 Aug 18	57
1862	Rebar + services	2	23 Aug 18	24 Aug 18	57
1864	Cast slab (Roof)	1	27 Aug 18	27 Aug 18	57
1866	Columns (L1- Roof)	5	28 Aug 18	03 Sep 18	57
1868	1.4:- ROOF	17	04 Sep 18	27 Sep 18	57
1870	Staging + decking (incl.beams)	4	04 Sep 18	07 Sep 18	57
1872	Rebar + services	2	10 Sep 18	11 Sep 18	57
1874	Cast slab (Roof)	1	12 Sep 18	12 Sep 18	57
1876	Upstands	10	13 Sep 18	27 Sep 18	81
1878	1.4:- FINISHES	43	28 Sep 18	27 Nov 18	57
1880	1.4:- GROUND FLOOR	37	28 Sep 18	19 Nov 18	57
1882	Access from structure	1	28 Sep 18	28 Sep 18	57
1884	Blockwork	6	28 Sep 18	05 Oct 18	57
1886	Electrical 1st fix	3	08 Oct 18	10 Oct 18	63
1888	Plumbing 1st fix to walls	3	08 Oct 18	10 Oct 18	63
1890	Plaster walls internal	4	11 Oct 18	16 Oct 18	63
1892	Aluminium windows, doors + glazing	8	17 Oct 18	26 Oct 18	68
1894	Wall + floor tiling	5	17 Oct 18	23 Oct 18	63
1896	Electrical wiring + DB	3	29 Oct 18	31 Oct 18	68
1898	Install sink + connect	2	24 Oct 18	25 Oct 18	71
1900	Splashback tiling	1	26 Oct 18	26 Oct 18	71
1902	Ceilings	4	24 Oct 18	29 Oct 18	63
1904	Paint first coats	2	30 Oct 18	31 Oct 18	63
1906	Hang doors + locks	2	01 Nov 18	02 Nov 18	63
1908	Electrical final fix	2	05 Nov 18	06 Nov 18	66
1910	Plumbing 2nd fix	2	05 Nov 18	06 Nov 18	64



Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
1912	Joinery to work top	5	05 Nov 18	09 Nov 18	63
1914	Plumbing final fix	2	07 Nov 18	08 Nov 18	64
1916	Paint final	3	12 Nov 18	14 Nov 18	63
1918	Clean + snag	3	15 Nov 18	19 Nov 18	63
1920	1.4:- FIRST FLOOR	37	08 Oct 18	27 Nov 18	57
1922	Access from structure	1	08 Oct 18	08 Oct 18	57
1924	Blockwork	6	08 Oct 18	15 Oct 18	57
1926	Electrical 1st fix	3	16 Oct 18	18 Oct 18	57
1928	Plumbing 1st fix to walls	3	16 Oct 18	18 Oct 18	57
1930	Plaster walls internal	4	19 Oct 18	24 Oct 18	57
1932	Aluminium windows, doors + glazing	8	25 Oct 18	05 Nov 18	62
1934	Wall + floor tiling	5	25 Oct 18	31 Oct 18	57
1936	Electrical wiring + DB	3	06 Nov 18	08 Nov 18	62
1938	Install sink + connect	2	01 Nov 18	02 Nov 18	65
1940	Splashback tiling	1	05 Nov 18	05 Nov 18	65
1942	Ceilings	4	01 Nov 18	06 Nov 18	57
1944	Paint first coats	2	07 Nov 18	08 Nov 18	57
1946	Hang doors + locks	2	09 Nov 18	12 Nov 18	57
1948	Electrical final fix	2	13 Nov 18	14 Nov 18	60
1950	Plumbing 2nd fix	2	13 Nov 18	14 Nov 18	58
1952	Joinery to work top	5	13 Nov 18	19 Nov 18	57
1954	Plumbing final fix	2	15 Nov 18	16 Nov 18	58
1956	Paint final	3	20 Nov 18	22 Nov 18	57
1958	Clean + snag	3	23 Nov 18	27 Nov 18	57
1960	1.4:- ROOF	19	28 Sep 18	24 Oct 18	81
1962	Access to Roof	1	28 Sep 18	28 Sep 18	81
1964	Screed to falls	4	28 Sep 18	03 Oct 18	81
1966	Balustrades 1st + final fix	8	04 Oct 18	15 Oct 18	81
1968	Waterproofing to roof	5	11 Oct 18	17 Oct 18	81
1970	Clean + Snag	5	18 Oct 18	24 Oct 18	81
1972	1.4:- FACADES + EXTERNALS	18	16 Oct 18	08 Nov 18	70
1974	Layerworks around building	8	16 Oct 18	25 Oct 18	70
1976	Apron around building	5	26 Oct 18	01 Nov 18	70
1978	Clean face bricks	3	02 Nov 18	06 Nov 18	70
1980	Clean + snag	2	07 Nov 18	08 Nov 18	70
1982	1.4:- SUMMARY OF COMPLETION DATES	25	25 Oct 18	28 Nov 18	57
1984	Ground Floor	1	20 Nov 18	20 Nov 18	63
1986	First Floor	1	28 Nov 18	28 Nov 18	57
1988	Roof	1	25 Oct 18	25 Oct 18	81
1990	Externals	1	09 Nov 18	09 Nov 18	70
1992	Control Tower	1	28 Nov 18	28 Nov 18	57
1994	*1.5:- STAFF TOILETS (01)*	*190*	*16 May 18*	*07 Mar 19*	*6*
1996	1.5:- STRUCTURE	85	16 May 18	12 Sep 18	45
1998	1.5:- GROUND FLOOR	18	16 May 18	11 Jun 18	94
2000	Gnd:- BASES + COLUMNS + WALLS	14	16 May 18	05 Jun 18	94
2002	Set Out	1	16 May 18	16 May 18	94
2004	Excavate bases + ground beams	4	17 May 18	22 May 18	94
2006	Blinding to bases + beams	4	22 May 18	28 May 18	94
2008	Rebar + cast bases + beams	4	24 May 18	30 May 18	94
2010	Columns/Shear walls (Gnd - Roof)	5	30 May 18	05 Jun 18	94
2012	Gnd:- SURFACE BED	10	29 May 18	11 Jun 18	94
2014	Underfloor services	6	29 May 18	05 Jun 18	94
2016	Prep for surface beds	4	05 Jun 18	08 Jun 18	94
2018	Cast surface beds	1	11 Jun 18	11 Jun 18	94
2020	1.5:- ROOF	18	20 Aug 18	12 Sep 18	45
2022	Staging + decking (incl.beams)	5	20 Aug 18	24 Aug 18	45
2024	Rebar + services	3	24 Aug 18	28 Aug 18	45



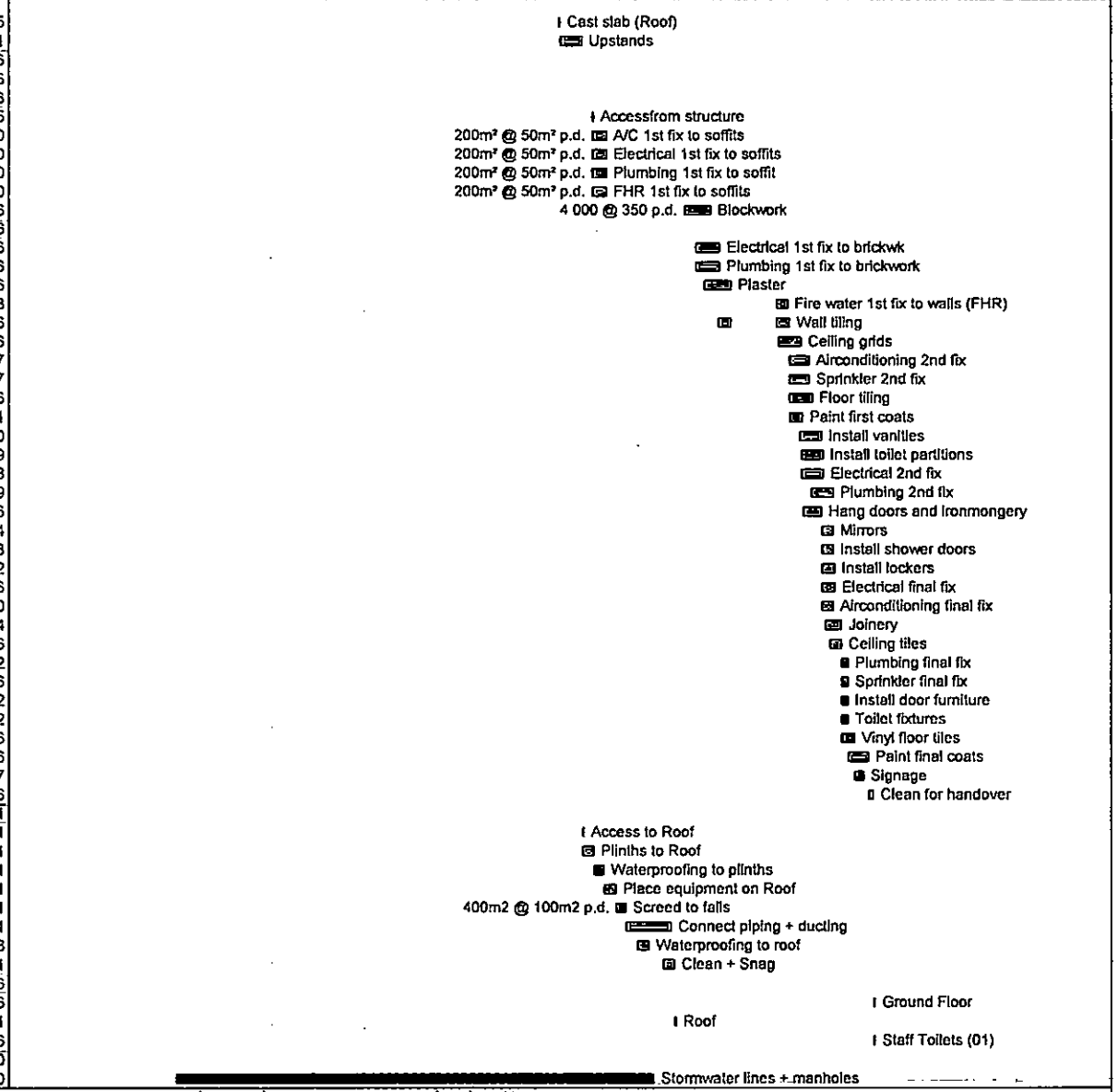
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

WBHO

Draft Tender Program - Rev A
Detail Barchart

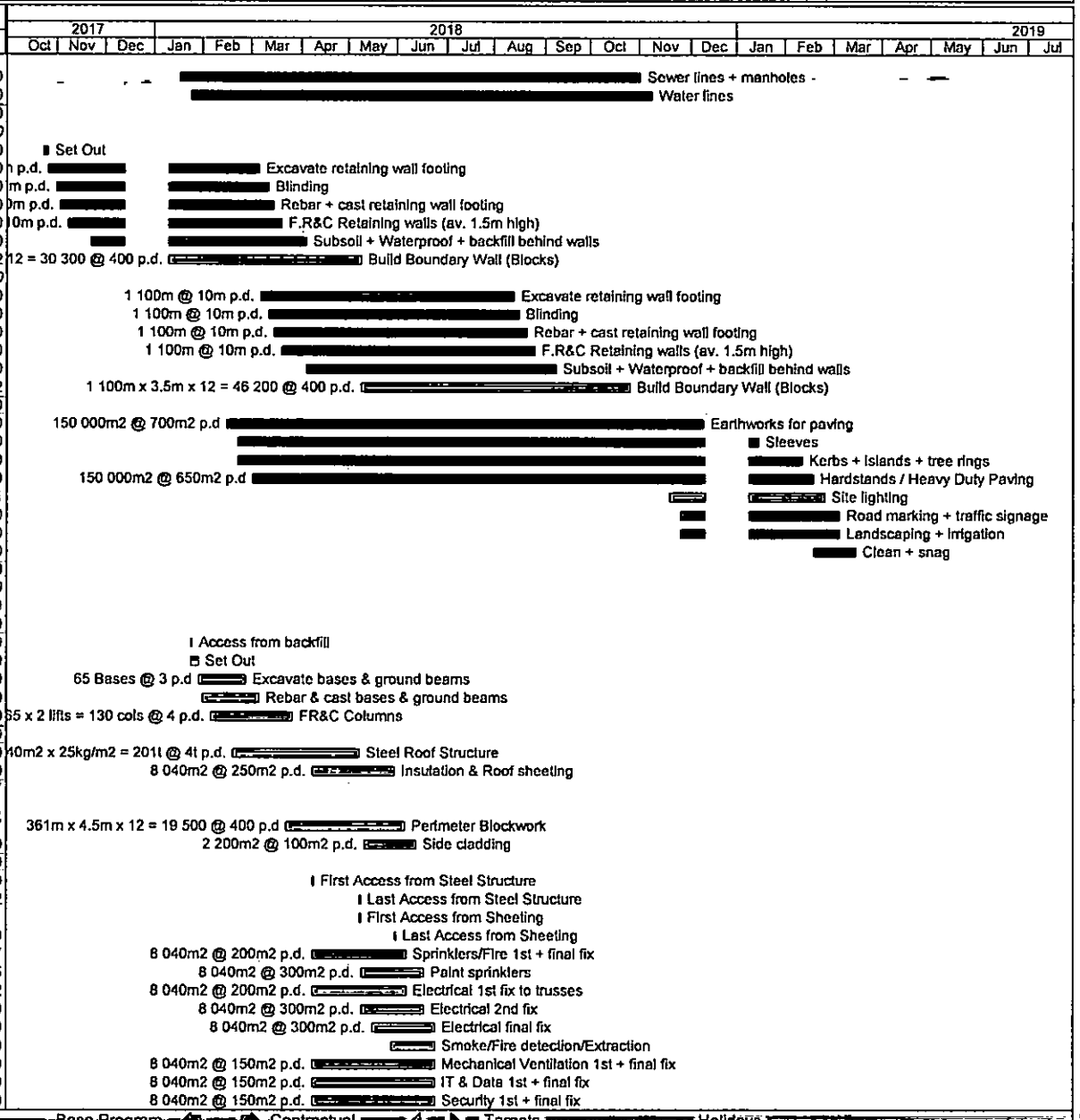
KPONE UNITY TERMINAL
Practical Completion = 29 Mar 19

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
2026	Cast slab (Roof)	1	29 Aug 18	29 Aug 18	45
2028	Upstands	10	30 Aug 18	12 Sep 18	71
2030	1.5:- FINISHES	104	13 Sep 18	06 Mar 19	6
2032	1.5:- GROUND FLOOR	100	19 Sep 18	06 Mar 19	6
2034	GND:- WET TRADES + FIRST FIXES	51	19 Sep 18	29 Nov 18	6
2036	Accessfrom structure	1	19 Sep 18	19 Sep 18	45
2038	A/C 1st fix to soffits	6	19 Sep 18	27 Sep 18	60
2040	Electrical 1st fix to soffits	6	19 Sep 18	27 Sep 18	60
2042	Plumbing 1st fix to soffit	6	19 Sep 18	27 Sep 18	60
2044	FHR 1st fix to soffits	6	19 Sep 18	27 Sep 18	60
2046	Blockwork	12	14 Nov 18	29 Nov 18	6
2048	GND:- ABLUTIONS/TOILETS	56	21 Nov 18	06 Mar 19	6
2050	Electrical 1st fix to brickwk	10	21 Nov 18	04 Dec 18	6
2052	Plumbing 1st fix to brickwork	10	21 Nov 18	04 Dec 18	6
2054	Plaster	12	26 Nov 18	11 Dec 18	6
2056	Fire water 1st fix to walls (FHR)	5	09 Jan 19	15 Jan 19	13
2058	Wall tiling	12	04 Dec 18	16 Jan 19	6
2060	Ceiling grids	10	10 Jan 19	23 Jan 19	6
2062	Airconditioning 2nd fix	8	17 Jan 19	28 Jan 19	17
2064	Sprinkler 2nd fix	8	17 Jan 19	28 Jan 19	17
2066	Floor tiling	10	17 Jan 19	30 Jan 19	6
2068	Paint first coats	6	17 Jan 19	24 Jan 19	11
2070	Install vanities	10	23 Jan 19	05 Feb 19	10
2072	Install toilet partitions	10	24 Jan 19	06 Feb 19	9
2074	Electrical 2nd fix	10	24 Jan 19	06 Feb 19	8
2076	Plumbing 2nd fix	10	30 Jan 19	12 Feb 19	9
2078	Hang doors and ironmongery	8	25 Jan 19	05 Feb 19	6
2080	Mirrors	5	06 Feb 19	12 Feb 19	14
2082	Install shower doors	5	06 Feb 19	12 Feb 19	13
2084	Install lockers	6	06 Feb 19	13 Feb 19	12
2086	Electrical final fix	6	06 Feb 19	13 Feb 19	6
2088	Airconditioning final fix	5	06 Feb 19	12 Feb 19	20
2090	Joinery	6	08 Feb 19	15 Feb 19	14
2092	Ceiling tiles	5	11 Feb 19	15 Feb 19	6
2094	Plumbing final fix	4	18 Feb 19	21 Feb 19	12
2096	Sprinkler final fix	4	18 Feb 19	21 Feb 19	6
2098	Install door furniture	4	18 Feb 19	21 Feb 19	12
2100	Toilet fixtures	4	18 Feb 19	21 Feb 19	12
2102	Vinyl floor tiles	6	18 Feb 19	25 Feb 19	6
2104	Paint final coats	6	22 Feb 19	01 Mar 19	6
2106	Signage	3	26 Feb 19	28 Feb 19	7
2108	Clean for handover	3	04 Mar 19	06 Mar 19	6
2110	1.5:- ROOF	39	13 Sep 18	07 Nov 18	71
2112	Access to Roof	1	13 Sep 18	13 Sep 18	71
2114	Plinths to Roof	5	13 Sep 18	19 Sep 18	71
2116	Waterproofing to plinths	3	20 Sep 18	25 Sep 18	71
2118	Place equipment on Roof	5	26 Sep 18	02 Oct 18	71
2120	Screed to falls	4	03 Oct 18	08 Oct 18	71
2122	Connect piping + ducting	20	09 Oct 18	05 Nov 18	71
2124	Waterproofing to roof	5	16 Oct 18	22 Oct 18	78
2126	Clean + Snag	5	01 Nov 18	07 Nov 18	71
2128	1.5:- SUMMARY OF COMPLETION DATES	66	08 Nov 18	07 Mar 19	6
2130	Ground Floor	1	07 Mar 19	07 Mar 19	6
2132	Roof	1	08 Nov 18	08 Nov 18	71
2134	Staff Toilets (01)	1	07 Mar 19	07 Mar 19	6
2136	PACKAGE 2 - BULK SERVICES (MAINS)	210	10 Jan 18	08 Nov 18	0
2138	Stormwater lines + manholes	200	10 Jan 18	25 Oct 18	0



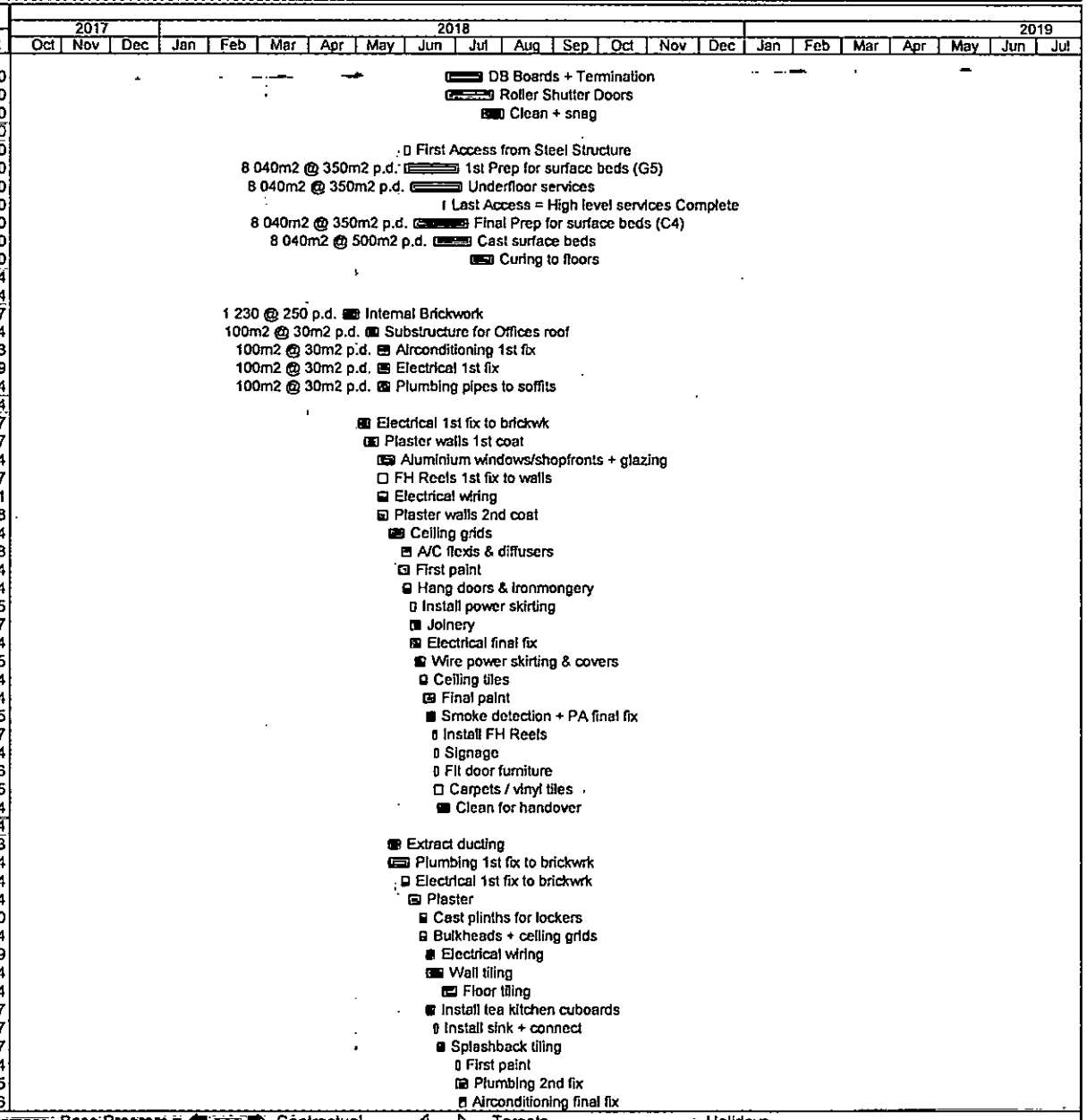
Legend | Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity Nº	Activity Description	Dum	Current Start	Current Finish	Float
2140	Sewer lines + manholes	200	17 Jan 18	01 Nov 18	0
2142	Water lines	200	24 Jan 18	08 Nov 18	0
2144	PACKAGE 3 - RETAINING WALL	237	23 Oct 17	25 Oct 18	0
2146	*3:- EAST/LEFT (SECTION 1)(EJ6/GL 1 - 8-25)*	*117*	*23 Oct 17*	*08 May 18*	*0*
2148	Set Out	3	23 Oct 17	25 Oct 17	0
2150	Excavate retaining wall footing	72	26 Oct 17	02 Mar 18	0
2152	Blinding	72	31 Oct 17	09 Mar 18	0
2154	Rebar + cast retaining wall footing	72	03 Nov 17	14 Mar 18	0
2156	F.R&C Retaining walls (av. 1.5m high)	72	08 Nov 17	19 Mar 18	0
2158	Subsoil + Waterproof + backfill behind walls	72	22 Nov 17	04 Apr 18	0
2160	Build Boundary Wall (Blocks)	80	10 Jan 18	08 May 18	22
2162	*3:- REMAINDER OF WALL*	*162*	*07 Mar 18*	*25 Oct 18*	*0*
2164	Excavate retaining wall footing	110	07 Mar 18	13 Aug 18	0
2166	Blinding	110	12 Mar 18	16 Aug 18	0
2168	Rebar + cast retaining wall footing	110	15 Mar 18	21 Aug 18	0
2170	F.R&C Retaining walls (av. 1.5m high)	110	20 Mar 18	24 Aug 18	0
2172	Subsoil + Waterproof + backfill behind walls	110	05 Apr 18	07 Sep 18	0
2174	Build Boundary Wall (Blocks)	120	09 May 18	25 Oct 18	22
2176	PACKAGE 4 - HEAVY DUTY PAVEMENT	253	16 Feb 18	14 Mar 19	0
2178	Earthworks for paving	205	16 Feb 18	10 Dec 18	0
2180	Sleeves	205	23 Feb 18	14 Jan 19	0
2182	Kerbs + islands + tree rings	225	23 Feb 18	11 Feb 19	0
2184	Hardstands / Heavy Duty Paving	225	02 Mar 18	18 Feb 19	0
2186	Site lighting	50	20 Nov 18	25 Feb 19	1
2188	Road marking + traffic signage	50	27 Nov 18	04 Mar 19	0
2190	Landscaping + irrigation	50	27 Nov 18	04 Mar 19	0
2192	Clean + snag	18	19 Feb 19	14 Mar 19	0
2194	PACKAGE 5 - PRE-FAB STEEL BUILDINGS	190	24 Jan 18	25 Oct 18	9
2196	*5.1:- CONTAINER FREIGHT STATION*	*131*	*24 Jan 18*	*02 Aug 18*	*9*
2198	5.1:- MAIN BUILDING	130	24 Jan 18	01 Aug 18	9
2200	MB : CONCRETE COLUMNS	42	24 Jan 18	26 Mar 18	9
2202	Access from backfill	1	24 Jan 18	24 Jan 18	9
2204	Set Out	3	24 Jan 18	26 Jan 18	9
2206	Excavate bases & ground beams	22	29 Jan 18	27 Feb 18	9
2208	Rebar & cast bases & ground beams	22	01 Feb 18	02 Mar 18	140
2210	FR&C Columns	33	06 Feb 18	26 Mar 18	140
2212	MB : STEEL ROOF STRUCTURE	65	20 Feb 18	29 May 18	140
2214	Steel Roof Structure	50	20 Feb 18	07 May 18	140
2216	Insulation & Roof sheeting	35	09 Apr 18	29 May 18	140
2218	MB : PERIMETER BLOCKWORK & SIDE CLADDING	54	23 Mar 18	12 Jun 18	147
2220	Perimeter Blockwork	49	23 Mar 18	05 Jun 18	147
2222	Side cladding	22	11 May 18	12 Jun 18	150
2224	MB : WAREHOUSE SERVICES FINISHES	81	09 Apr 18	01 Aug 18	140
2226	First Access from Steel Structure	1	09 Apr 18	09 Apr 18	140
2228	Last Access from Steel Structure	1	08 May 18	08 May 18	142
2230	First Access from Sheeting	1	08 May 18	08 May 18	141
2232	Last Access from Sheeting	1	30 May 18	30 May 18	140
2234	Sprinklers/Fire 1st + final fix	41	09 Apr 18	06 Jun 18	147
2236	Paint sprinklers	27	09 May 18	15 Jun 18	145
2238	Electrical 1st fix to trusses	41	09 Apr 18	06 Jun 18	142
2240	Electrical 2nd fix	27	09 May 18	15 Jun 18	140
2242	Electrical final fix	27	16 May 18	22 Jun 18	140
2244	Smoke/Fire detection/Extraction	20	28 May 18	22 Jun 18	140
2246	Mechanical Ventilation 1st + final fix	53	09 Apr 18	22 Jun 18	140
2248	IT & Data 1st + final fix	53	09 Apr 18	22 Jun 18	140
2250	Security 1st + final fix	53	09 Apr 18	22 Jun 18	140



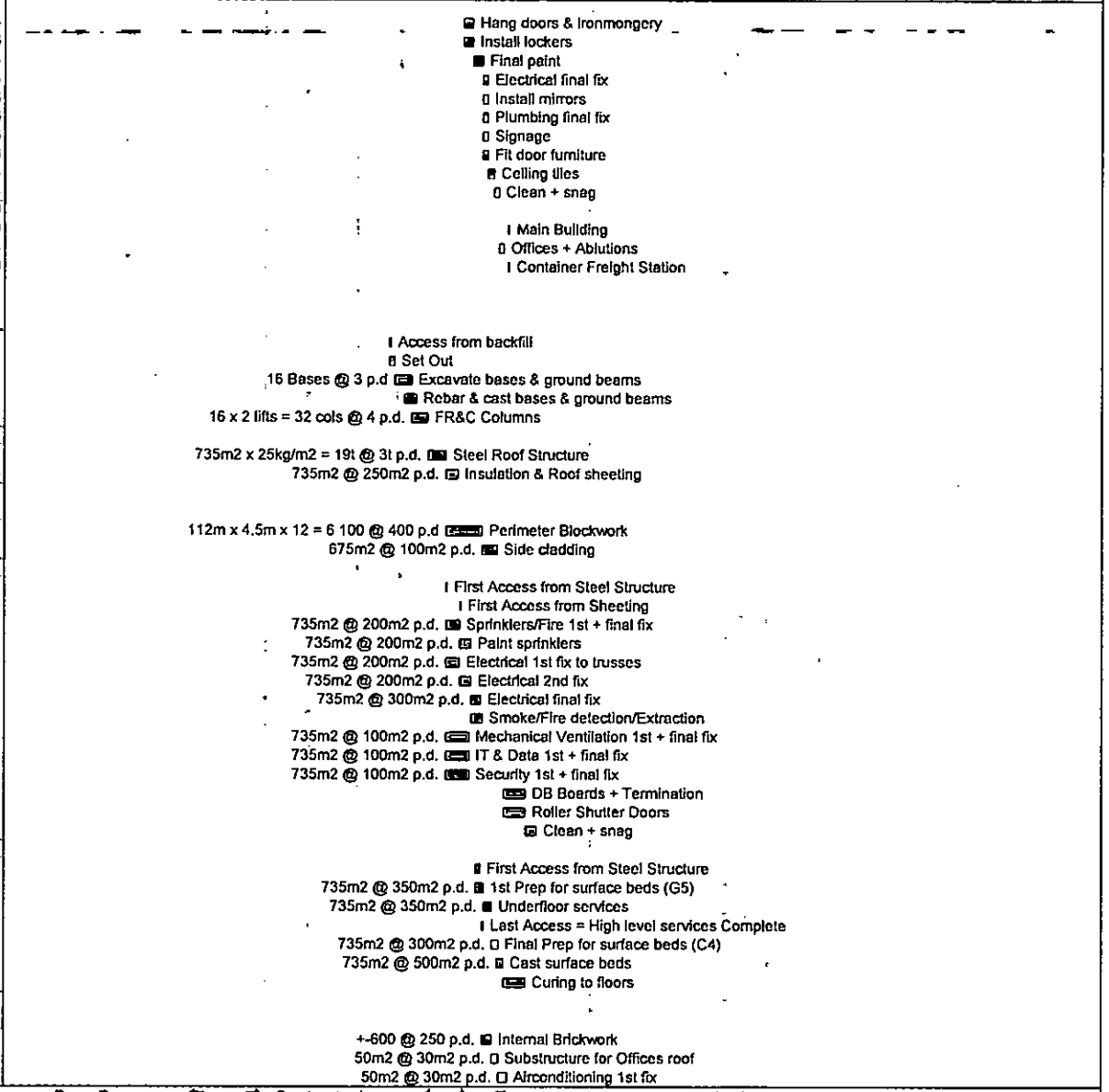
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
2252	DB Boards + Termination	16	27 Jun 18	18 Jul 18	140
2254	Roller Shutter Doors	21	27 Jun 18	25 Jul 18	140
2256	Clean + snag	10	19 Jul 18	01 Aug 18	140
2258	MB : SURFACE BEDS	39	01 Jun 18	25 Jul 18	140
2260	First Access from Steel Structure	1	01 Jun 18	01 Jun 18	140
2262	1st Prep for surface beds (G5)	23	01 Jun 18	03 Jul 18	140
2264	Underfloor services	23	05 Jun 18	05 Jul 18	140
2266	Last Access = High level services Complete	1	25 Jun 18	25 Jun 18	140
2268	Final Prep for surface beds (C4)	23	07 Jun 18	09 Jul 18	140
2270	Cast surface beds	17	19 Jun 18	11 Jul 18	140
2272	Curing to floors	10	12 Jul 18	25 Jul 18	140
2274	5.1:- OFFICES + ABLUTIONS (2 OFF)	66	24 Apr 18	26 Jul 18	144
2276	OFFICES:- AREA WET TRADES + 1ST FIXES	19	24 Apr 18	21 May 18	144
2278	Internal Brickwork	6	24 Apr 18	02 May 18	147
2280	Substructure for Offices roof	5	08 May 18	14 May 18	144
2282	Airconditioning 1st fix	5	15 May 18	21 May 18	153
2284	Electrical 1st fix	5	15 May 18	21 May 18	149
2286	Plumbing pipes to soffits	5	15 May 18	21 May 18	144
2288	OFFICES:- OFFICE AREAS	40	03 May 18	28 Jun 18	164
2290	Electrical 1st fix to brickwk	5	03 May 18	09 May 18	167
2292	Plaster walls 1st coat	6	07 May 18	14 May 18	167
2294	Aluminium windows/shopfronts + glazing	8	15 May 18	24 May 18	164
2296	FH Reels 1st fix to walls	4	15 May 18	18 May 18	187
2298	Electrical wiring	4	15 May 18	18 May 18	181
2300	Plaster walls 2nd coat	4	15 May 18	18 May 18	168
2302	Ceiling grids	6	22 May 18	30 May 18	164
2304	A/C flexis & diffusers	4	30 May 18	04 Jun 18	168
2306	First paint	5	28 May 18	01 Jun 18	164
2308	Hang doors & ironmongery	3	31 May 18	04 Jun 18	164
2310	Install power skirting	3	05 Jun 18	07 Jun 18	165
2312	Joinery	4	05 Jun 18	08 Jun 18	167
2314	Electrical final fix	4	05 Jun 18	08 Jun 18	164
2316	Wire power skirting & covers	4	08 Jun 18	13 Jun 18	165
2318	Ceiling tiles	4	11 Jun 18	14 Jun 18	164
2320	Final paint	5	13 Jun 18	19 Jun 18	164
2322	Smoke detection + PA final fix	3	15 Jun 18	19 Jun 18	165
2324	Install FH Reels	2	19 Jun 18	20 Jun 18	167
2326	Signage	2	20 Jun 18	21 Jun 18	164
2328	Fit door furniture	2	20 Jun 18	21 Jun 18	166
2330	Carpets / vinyl tiles	3	20 Jun 18	22 Jun 18	165
2332	Clean for handover	5	22 Jun 18	28 Jun 18	164
2334	OFFICES:- TOILETS + TEA KITCHEN	47	22 May 18	26 Jul 18	144
2336	Extract ducting	4	22 May 18	28 May 18	153
2338	Plumbing 1st fix to brickwrk	8	22 May 18	01 Jun 18	144
2340	Electrical 1st fix to brickwrk	3	30 May 18	01 Jun 18	144
2342	Plaster	5	04 Jun 18	08 Jun 18	144
2344	Cast plinths for lockers	4	11 Jun 18	14 Jun 18	150
2346	Bulkheads + ceiling grids	4	11 Jun 18	14 Jun 18	144
2348	Electrical wiring	3	15 Jun 18	19 Jun 18	159
2350	Wall tiling	6	15 Jun 18	22 Jun 18	144
2352	Floor tiling	6	25 Jun 18	02 Jul 18	144
2354	Install tea kitchen cuboards	3	15 Jun 18	19 Jun 18	157
2356	Install sink + connect	2	20 Jun 18	21 Jun 18	157
2358	Splashback tiling	2	22 Jun 18	25 Jun 18	157
2360	First paint	2	03 Jul 18	04 Jul 18	144
2362	Plumbing 2nd fix	5	03 Jul 18	09 Jul 18	145
2364	Airconditioning final fix	2	05 Jul 18	06 Jul 18	146



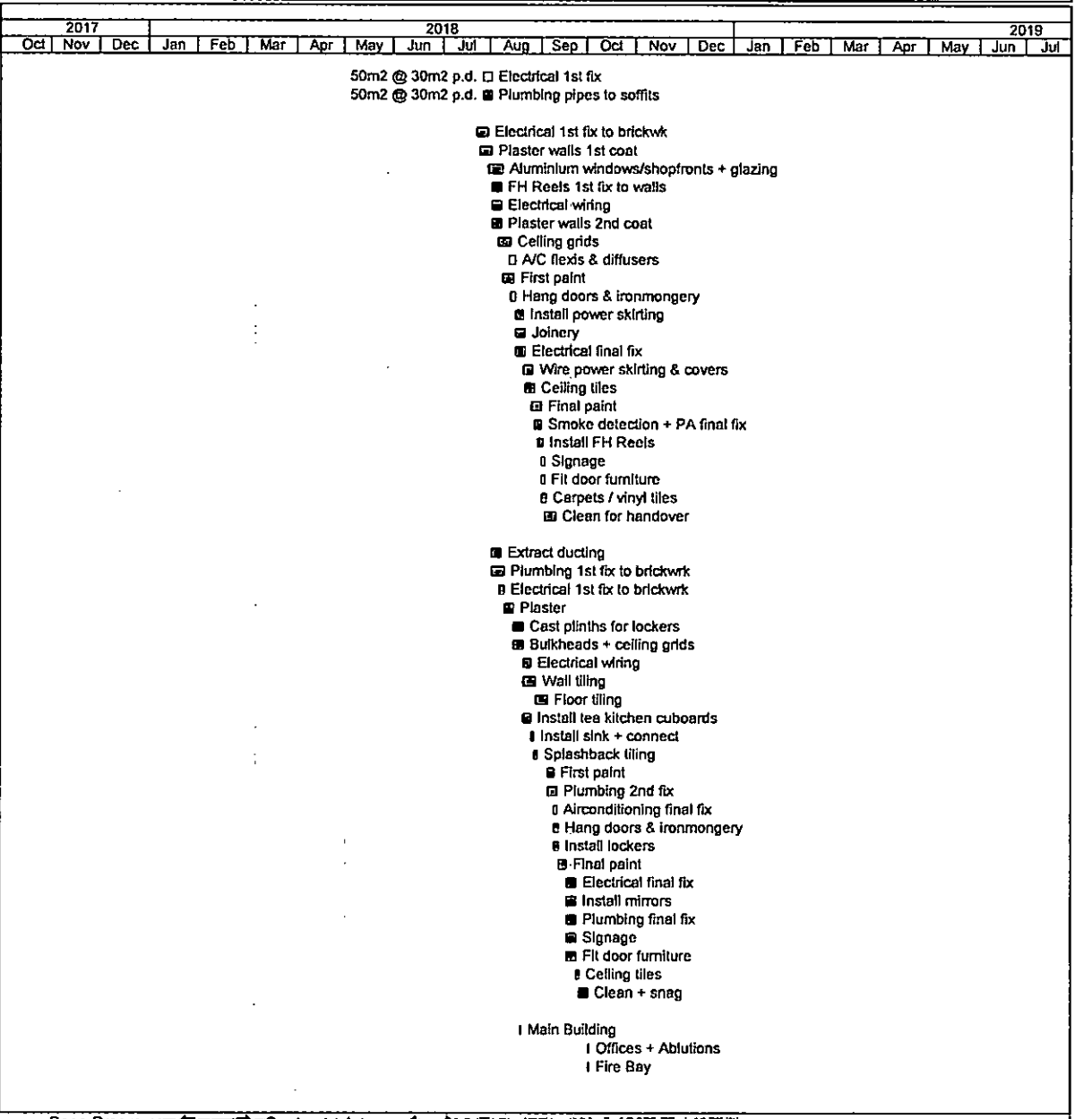
Legend | Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity Nº	Activity Description	Durn	Current Start	Current Finish	Float
2366	Hang doors & ironmongery	4	05 Jul 18	10 Jul 18	144
2368	Install lockers	4	05 Jul 18	10 Jul 18	146
2370	Final paint	4	11 Jul 18	16 Jul 18	144
2372	Electrical final fix	3	17 Jul 18	19 Jul 18	144
2374	Install mirrors	3	17 Jul 18	19 Jul 18	146
2376	Plumbing final fix	3	17 Jul 18	19 Jul 18	146
2378	Signage	3	17 Jul 18	19 Jul 18	146
2380	Fit door furniture	3	17 Jul 18	19 Jul 18	146
2382	Ceiling tiles	2	20 Jul 18	23 Jul 18	144
2384	Clean + snag	3	24 Jul 18	26 Jul 18	144
2386	5.1:- SUMMARY OF COMPLETION DATES	5	27 Jul 18	02 Aug 18	140
2388	Main Building	1	02 Aug 18	02 Aug 18	140
2390	Offices + Ablutions	1	27 Jul 18	27 Jul 18	144
2392	Container Freight Station	1	02 Aug 18	02 Aug 18	140
2394	*5.2:- FIRE BAY*	*95*	*21 May 18*	*02 Oct 18*	*81*
2396	5.2:- MAIN BUILDING	64	21 May 18	17 Aug 18	81
2398	MB : CONCRETE COLUMNS	17	21 May 18	13 Jun 18	81
2400	Access from backfill	1	21 May 18	21 May 18	81
2402	Set Out	3	21 May 18	23 May 18	81
2404	Excavate bases & ground beams	6	24 May 18	01 Jun 18	81
2406	Rebar & cast bases & ground beams	6	30 May 18	06 Jun 18	81
2408	FR&C Columns	8	04 Jun 18	13 Jun 18	81
2410	MB : STEEL ROOF STRUCTURE	12	14 Jun 18	29 Jun 18	81
2412	Steel Roof Structure	7	14 Jun 18	22 Jun 18	81
2414	Insulation & Roof sheeting	5	25 Jun 18	29 Jun 18	113
2416	MB : PERIMETER BLOCKWORK & SIDE CLADDING	23	25 Jun 18	25 Jul 18	81
2418	Perimeter Blockwork	16	25 Jun 18	16 Jul 18	81
2420	Side cladding	7	17 Jul 18	25 Jul 18	128
2422	MB : WAREHOUSE SERVICES FINISHES	40	25 Jun 18	17 Aug 18	112
2424	First Access from Steel Structure	1	25 Jun 18	25 Jun 18	131
2426	First Access from Sheeting	1	03 Jul 18	03 Jul 18	112
2428	Sprinklers/Fire 1st + final fix	6	25 Jun 18	02 Jul 18	136
2430	Paint sprinklers	5	03 Jul 18	09 Jul 18	136
2432	Electrical 1st fix to trusses	6	25 Jun 18	02 Jul 18	131
2434	Electrical 2nd fix	5	03 Jul 18	09 Jul 18	131
2436	Electrical final fix	4	10 Jul 18	13 Jul 18	132
2438	Smoke/Fire detection/Extraction	5	10 Jul 18	16 Jul 18	131
2440	Mechanical Ventilation 1st + final fix	10	25 Jun 18	06 Jul 18	137
2442	IT & Data 1st + final fix	10	25 Jun 18	06 Jul 18	137
2444	Security 1st + final fix	10	25 Jun 18	06 Jul 18	137
2446	DB Boards + Termination	10	30 Jul 18	10 Aug 18	128
2448	Roller Shutter Doors	10	30 Jul 18	10 Aug 18	128
2450	Clean + snag	5	13 Aug 18	17 Aug 18	128
2452	MB : SURFACE BEDS	21	13 Jul 18	10 Aug 18	128
2454	First Access from Steel Structure	1	13 Jul 18	13 Jul 18	128
2456	1st Prep for surface beds (G5)	3	13 Jul 18	17 Jul 18	128
2458	Underfloor services	3	18 Jul 18	20 Jul 18	128
2460	Last Access = High level services Complete	1	17 Jul 18	17 Jul 18	131
2462	Final Prep for surface beds (C4)	4	23 Jul 18	26 Jul 18	128
2464	Cast surface beds	2	26 Jul 18	27 Jul 18	128
2466	Curing to floors	10	30 Jul 18	10 Aug 18	128
2468	5.2:- OFFICES + ABLUTIONS	54	17 Jul 18	01 Oct 18	98
2470	OFFICES:- AREA WET TRADES + 1ST FIXES	12	17 Jul 18	01 Aug 18	98
2472	Internal Brickwork	4	17 Jul 18	20 Jul 18	98
2474	Substructure for Offices roof	4	23 Jul 18	26 Jul 18	98
2476	Airconditioning 1st fix	4	27 Jul 18	01 Aug 18	104



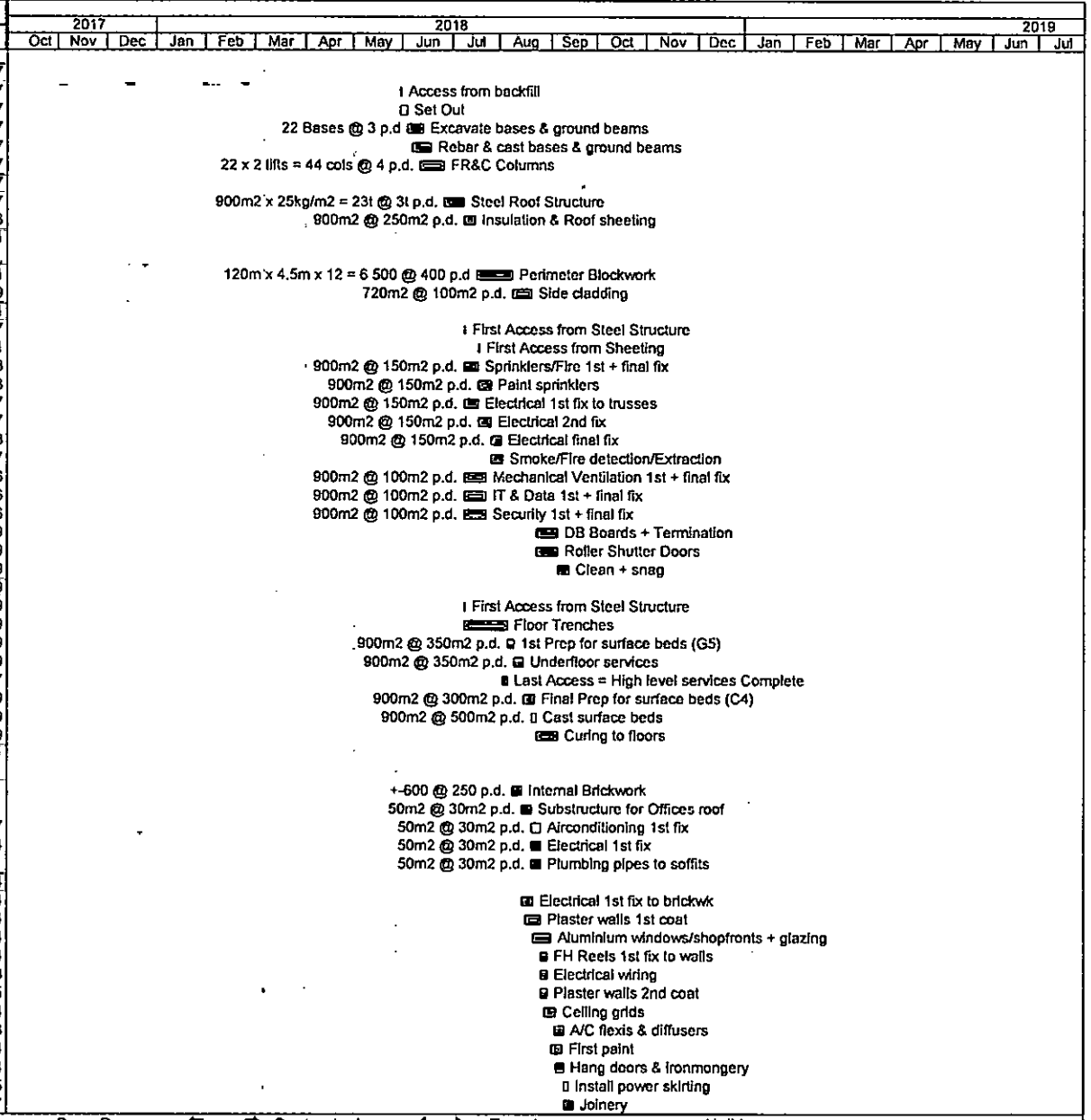
Legend: Non-critical | Critical | Overrun | Base-Program | Contractual | Targets | Holidays

Activity Nº	Activity Description	Durn	Current Start	Current Finish	Float
2478	Electrical 1st fix	4	27 Jul 18	01 Aug 18	101
2480	Plumbing pipes to soffits	4	27 Jul 18	01 Aug 18	98
2482	OFFICES:- OFFICE AREAS	37	23 Jul 18	11 Sep 18	111
2484	Electrical 1st fix to brickwk	5	23 Jul 18	27 Jul 18	111
2486	Plaster walls 1st coat	6	25 Jul 18	01 Aug 18	111
2488	Aluminium windows/shopfronts + glazing	8	30 Jul 18	08 Aug 18	111
2490	FH Reels 1st fix to walls	4	02 Aug 18	07 Aug 18	131
2492	Electrical wiring	4	02 Aug 18	07 Aug 18	125
2494	Plaster walls 2nd coat	4	02 Aug 18	07 Aug 18	112
2496	Ceiling grids	6	06 Aug 18	13 Aug 18	111
2498	A/C flexis & diffusers	4	13 Aug 18	16 Aug 18	115
2500	First paint	5	09 Aug 18	15 Aug 18	111
2502	Hang doors & ironmongery	3	14 Aug 18	16 Aug 18	111
2504	Install power skirting	3	17 Aug 18	21 Aug 18	112
2506	Joinery	4	17 Aug 18	22 Aug 18	114
2508	Electrical final fix	4	17 Aug 18	22 Aug 18	111
2510	Wire power skirting & covers	4	22 Aug 18	27 Aug 18	112
2512	Ceiling tiles	4	23 Aug 18	28 Aug 18	111
2514	Final paint	5	27 Aug 18	31 Aug 18	111
2516	Smoke detection + PA final fix	3	29 Aug 18	31 Aug 18	112
2518	Install FH Reels	2	31 Aug 18	03 Sep 18	114
2520	Signage	2	03 Sep 18	04 Sep 18	111
2522	Fit door furniture	2	03 Sep 18	04 Sep 18	113
2524	Carpets / vinyl tiles	3	03 Sep 18	05 Sep 18	112
2526	Clean for handover	5	05 Sep 18	11 Sep 18	111
2528	OFFICES:- TOILETS + TEA KITCHEN	42	02 Aug 18	01 Oct 18	98
2530	Extract ducting	4	02 Aug 18	07 Aug 18	104
2532	Plumbing 1st fix to brickwrk	6	02 Aug 18	09 Aug 18	98
2534	Electrical 1st fix to brickwrk	3	07 Aug 18	09 Aug 18	98
2536	Plaster	4	10 Aug 18	15 Aug 18	98
2538	Cast plinths for lockers	4	16 Aug 18	21 Aug 18	104
2540	Bulkheads + ceiling grids	4	16 Aug 18	21 Aug 18	98
2542	Electrical wiring	3	22 Aug 18	24 Aug 18	112
2544	Wall tiling	6	22 Aug 18	29 Aug 18	98
2546	Floor tiling	6	30 Aug 18	06 Sep 18	98
2548	Install tea kitchen cuboards	3	22 Aug 18	24 Aug 18	109
2550	Install sink + connect	2	27 Aug 18	28 Aug 18	109
2552	Splashback tiling	2	29 Aug 18	30 Aug 18	109
2554	First paint	2	07 Sep 18	10 Sep 18	98
2556	Plumbing 2nd fix	4	07 Sep 18	12 Sep 18	99
2558	Airconditioning final fix	2	11 Sep 18	12 Sep 18	99
2560	Hang doors & ironmongery	3	11 Sep 18	13 Sep 18	98
2562	Install lockers	3	11 Sep 18	13 Sep 18	99
2564	Final paint	3	14 Sep 18	18 Sep 18	98
2566	Electrical final fix	3	19 Sep 18	24 Sep 18	98
2568	Install mirrors	3	19 Sep 18	24 Sep 18	100
2570	Plumbing final fix	3	19 Sep 18	24 Sep 18	100
2572	Signage	3	19 Sep 18	24 Sep 18	100
2574	Fit door furniture	3	19 Sep 18	24 Sep 18	100
2576	Ceiling tiles	2	25 Sep 18	26 Sep 18	98
2578	Clean + snag	3	27 Sep 18	01 Oct 18	98
2580	5.2:- SUMMARY OF COMPLETION DATES	31	20 Aug 18	02 Oct 18	98
2582	Main Building	1	20 Aug 18	20 Aug 18	128
2584	Offices + Ablutions	1	02 Oct 18	02 Oct 18	98
2586	Fire Bay	1	02 Oct 18	02 Oct 18	98
2588	*5.3:- MECHANICAL WORKSHOP*	*106*	*30 May 18*	*25 Oct 18*	*81*
2590	5.3:- MAIN BUILDING	77	30 May 18	13 Sep 18	81



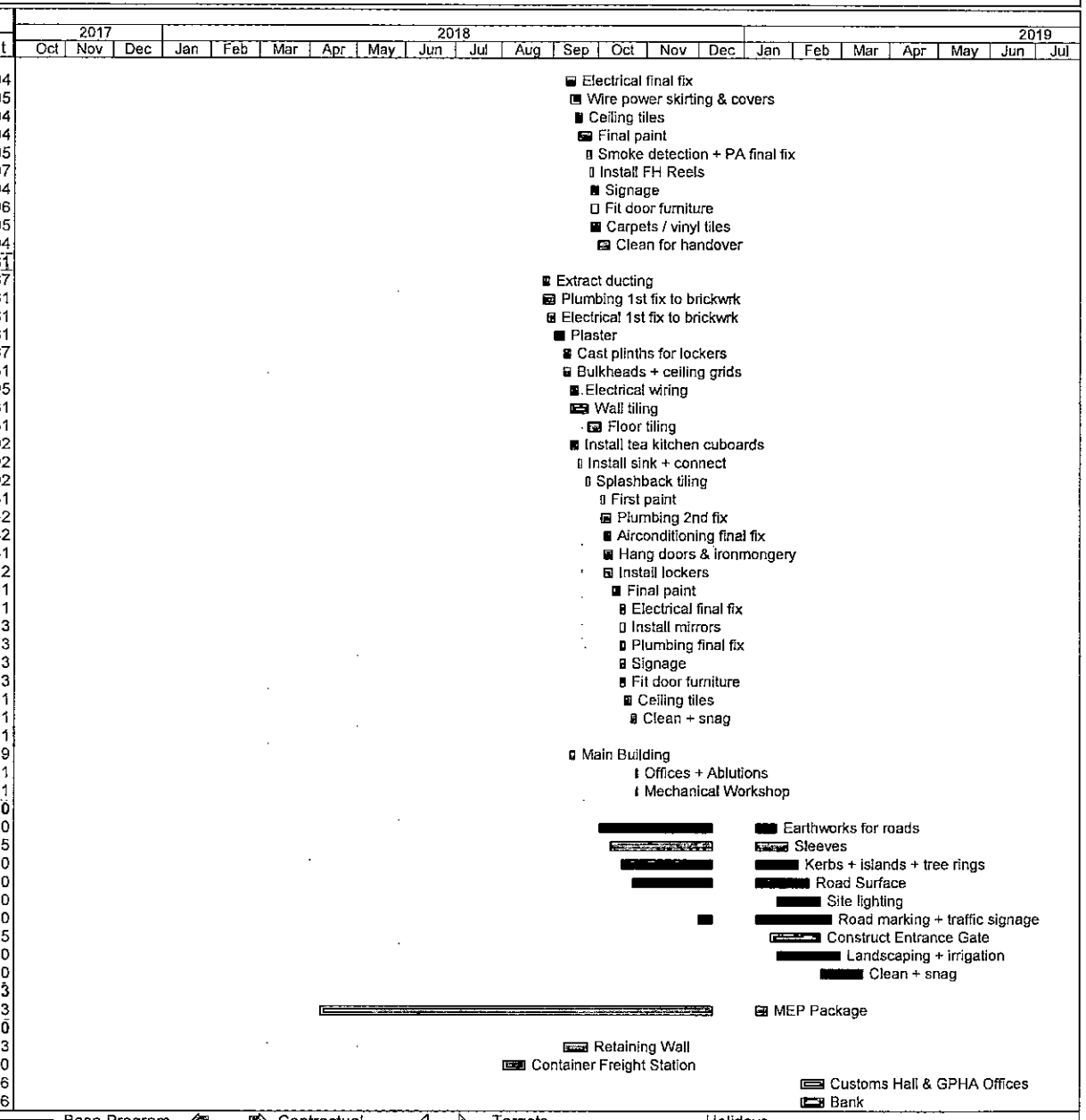
Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity Nº	Activity Description	Dur	Current Start	Current Finish	Float
2592	MB : CONCRETE COLUMNS	20	30 May 18	26 Jun 18	87
2594	Access from backfill	1	30 May 18	30 May 18	87
2596	Set Out	3	30 May 18	01 Jun 18	87
2598	Excavate bases & ground beams	8	04 Jun 18	13 Jun 18	87
2600	Rebar & cast bases & ground beams	8	07 Jun 18	18 Jun 18	87
2602	FR&C Columns	11	12 Jun 18	26 Jun 18	87
2604	MB : STEEL ROOF STRUCTURE	13	27 Jun 18	13 Jul 18	87
2606	Steel Roof Structure	8	27 Jun 18	06 Jul 18	87
2608	Insulation & Roof sheeting	5	09 Jul 18	13 Jul 18	103
2610	MB : PERIMETER BLOCKWORK & SIDE CLADDING	25	17 Jul 18	20 Aug 18	81
2612	Perimeter Blockwork	17	17 Jul 18	08 Aug 18	81
2614	Side cladding	8	09 Aug 18	20 Aug 18	109
2616	MB : WAREHOUSE SERVICES FINISHES	49	09 Jul 18	13 Sep 18	101
2618	First Access from Steel Structure	1	09 Jul 18	09 Jul 18	117
2620	First Access from Sheeting	1	18 Jul 18	18 Jul 18	101
2622	Sprinklers/Fire 1st + final fix	7	09 Jul 18	17 Jul 18	123
2624	Paint sprinklers	6	18 Jul 18	25 Jul 18	123
2626	Electrical 1st fix to trusses	7	09 Jul 18	17 Jul 18	117
2628	Electrical 2nd fix	6	18 Jul 18	25 Jul 18	117
2630	Electrical final fix	5	26 Jul 18	01 Aug 18	118
2632	Smoke/Fire detection/Extraction	6	26 Jul 18	02 Aug 18	117
2634	Mechanical Ventilation 1st + final fix	10	09 Jul 18	20 Jul 18	126
2636	IT & Data 1st + final fix	10	09 Jul 18	20 Jul 18	126
2638	Security 1st + final fix	10	09 Jul 18	20 Jul 18	126
2640	DB Boards + Termination	10	24 Aug 18	06 Sep 18	109
2642	Roller Shutter Doors	10	24 Aug 18	06 Sep 18	109
2644	Clean + snag	5	07 Sep 18	13 Sep 18	109
2646	MB : SURFACE BEDS	44	09 Jul 18	06 Sep 18	109
2648	First Access from Steel Structure	1	09 Jul 18	09 Jul 18	109
2650	Floor Trenches	20	09 Jul 18	03 Aug 18	109
2652	1st Prep for surface beds (G5)	4	06 Aug 18	09 Aug 18	109
2654	Underfloor services	4	10 Aug 18	15 Aug 18	109
2656	Last Access = High level services Complete	1	03 Aug 18	03 Aug 18	117
2658	Final Prep for surface beds (C4)	5	16 Aug 18	22 Aug 18	109
2660	Cast surface beds	3	21 Aug 18	23 Aug 18	109
2662	Curing to floors	10	24 Aug 18	06 Sep 18	109
2664	5.3:- OFFICES + ABLUTIONS	54	09 Aug 18	24 Oct 18	81
2666	OFFICES:- AREA WET TRADES + 1ST FIXES	12	09 Aug 18	24 Aug 18	81
2668	Internal Brickwork	4	09 Aug 18	14 Aug 18	81
2670	Substructure for Offices roof	4	15 Aug 18	20 Aug 18	81
2672	Airconditioning 1st fix	4	21 Aug 18	24 Aug 18	87
2674	Electrical 1st fix	4	21 Aug 18	24 Aug 18	84
2676	Plumbing pipes to soffits	4	21 Aug 18	24 Aug 18	81
2678	OFFICES:- OFFICE AREAS	37	15 Aug 18	05 Oct 18	94
2680	Electrical 1st fix to brickwk	5	15 Aug 18	21 Aug 18	94
2682	Plaster walls 1st coat	6	17 Aug 18	24 Aug 18	94
2684	Aluminium windows/shopfronts + glazing	8	22 Aug 18	31 Aug 18	94
2686	FH Reels 1st fix to walls	4	27 Aug 18	30 Aug 18	114
2688	Electrical wiring	4	27 Aug 18	30 Aug 18	108
2690	Plaster walls 2nd coat	4	27 Aug 18	30 Aug 18	95
2692	Ceiling grids	6	29 Aug 18	05 Sep 18	94
2694	A/C flexis & diffusers	4	05 Sep 18	10 Sep 18	98
2696	First paint	5	03 Sep 18	07 Sep 18	94
2698	Hang doors & ironmongery	3	06 Sep 18	10 Sep 18	94
2700	Install power skirting	3	11 Sep 18	13 Sep 18	95
2702	Joinery	4	11 Sep 18	14 Sep 18	97



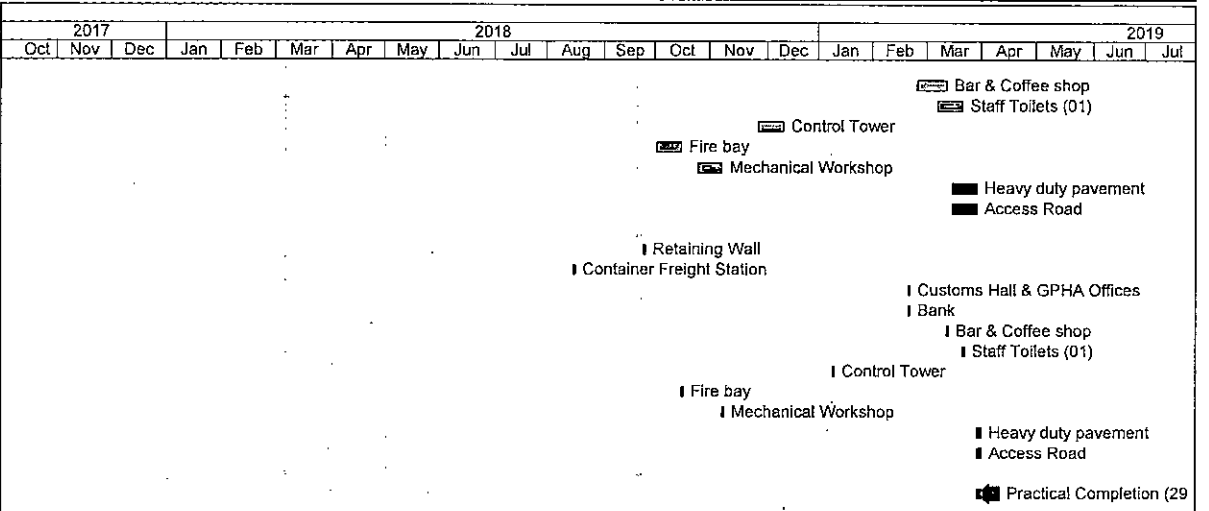
Legend: Non-critical, Critical, Overrun, Base Program, Contractual, Targets, Holidays

Activity Nº	Activity Description	Durn	Current Start	Current Finish	Float
2704	Electrical final fix	4	11 Sep 18	14 Sep 18	94
2706	Wire power skirting & covers	4	14 Sep 18	19 Sep 18	95
2708	Ceiling tiles	4	17 Sep 18	20 Sep 18	94
2710	Final paint	5	19 Sep 18	26 Sep 18	94
2712	Smoke detection + PA final fix	3	24 Sep 18	26 Sep 18	95
2714	Install FH Reels	2	26 Sep 18	27 Sep 18	97
2716	Signage	2	27 Sep 18	28 Sep 18	94
2718	Fit door furniture	2	27 Sep 18	28 Sep 18	96
2720	Carpets / vinyl tiles	3	27 Sep 18	01 Oct 18	95
2722	Clean for handover	5	01 Oct 18	05 Oct 18	94
2724	OFFICES:- TOILETS + TEA KITCHEN	42	27 Aug 18	24 Oct 18	81
2726	Extract ducting	4	27 Aug 18	30 Aug 18	87
2728	Plumbing 1st fix to brickwrk	6	27 Aug 18	03 Sep 18	81
2730	Electrical 1st fix to brickwrk	3	30 Aug 18	03 Sep 18	81
2732	Plaster	4	04 Sep 18	07 Sep 18	81
2734	Cast plinths for lockers	4	10 Sep 18	13 Sep 18	87
2736	Bulkheads + ceiling grids	4	10 Sep 18	13 Sep 18	81
2738	Electrical wiring	3	14 Sep 18	18 Sep 18	95
2740	Wall tiling	6	14 Sep 18	24 Sep 18	81
2742	Floor tiling	6	25 Sep 18	02 Oct 18	81
2744	Install tea kitchen cuboards	3	14 Sep 18	18 Sep 18	92
2746	Install sink + connect	2	19 Sep 18	20 Sep 18	92
2748	Splashback tiling	2	24 Sep 18	25 Sep 18	92
2750	First paint	2	03 Oct 18	04 Oct 18	81
2752	Plumbing 2nd fix	4	03 Oct 18	08 Oct 18	82
2754	Airconditioning final fix	2	05 Oct 18	08 Oct 18	82
2756	Hang doors & ironmongery	3	05 Oct 18	09 Oct 18	81
2758	Install lockers	3	05 Oct 18	09 Oct 18	82
2760	Final paint	3	10 Oct 18	12 Oct 18	81
2762	Electrical final fix	3	15 Oct 18	17 Oct 18	81
2764	Install mirrors	3	15 Oct 18	17 Oct 18	83
2766	Plumbing final fix	3	15 Oct 18	17 Oct 18	83
2768	Signage	3	15 Oct 18	17 Oct 18	83
2770	Fit door furniture	3	15 Oct 18	17 Oct 18	83
2772	Ceiling tiles	2	18 Oct 18	19 Oct 18	81
2774	Clean + snag	3	22 Oct 18	24 Oct 18	81
2776	5.3:- SUMMARY OF COMPLETION DATES	29	14 Sep 18	25 Oct 18	81
2778	Main Building	1	14 Sep 18	14 Sep 18	109
2780	Offices + Ablutions	1	25 Oct 18	25 Oct 18	81
2782	Mechanical Workshop	1	25 Oct 18	25 Oct 18	81
2784	**PACKAGE 6 - ACCESS ROAD**	**98**	**02 Oct 18**	**14 Mar 19**	**0**
2786	Earthworks for roads	60	02 Oct 18	21 Jan 19	0
2788	Sleeves	60	09 Oct 18	28 Jan 19	5
2790	Kerbs + islands + tree rings	60	16 Oct 18	04 Feb 19	0
2792	Road Surface	60	23 Oct 18	11 Feb 19	0
2794	Site lighting	20	22 Jan 19	18 Feb 19	0
2796	Road marking + traffic signage	41	03 Dec 18	25 Feb 19	0
2798	Construct Entrance Gate	22	18 Jan 19	18 Feb 19	5
2800	Landscaping + irrigation	28	22 Jan 19	28 Feb 19	0
2802	Clean + snag	18	19 Feb 19	14 Mar 19	0
2804	**PACKAGE 7 - MEP**	**179**	**09 Apr 18**	**15 Jan 19**	**13**
2806	MEP Package	179	09 Apr 18	15 Jan 19	13
2808	**INCLEMENT WEATHER ALLOWANCE**	**150**	**02 Aug 18**	**28 Mar 19**	**0**
2810	Retaining Wall	10	10 Sep 18	24 Sep 18	113
2812	Container Freight Station	10	02 Aug 18	15 Aug 18	140
2814	Customs Hall & GPHA Offices	10	07 Feb 19	20 Feb 19	26
2816	Bank	10	07 Feb 19	20 Feb 19	26

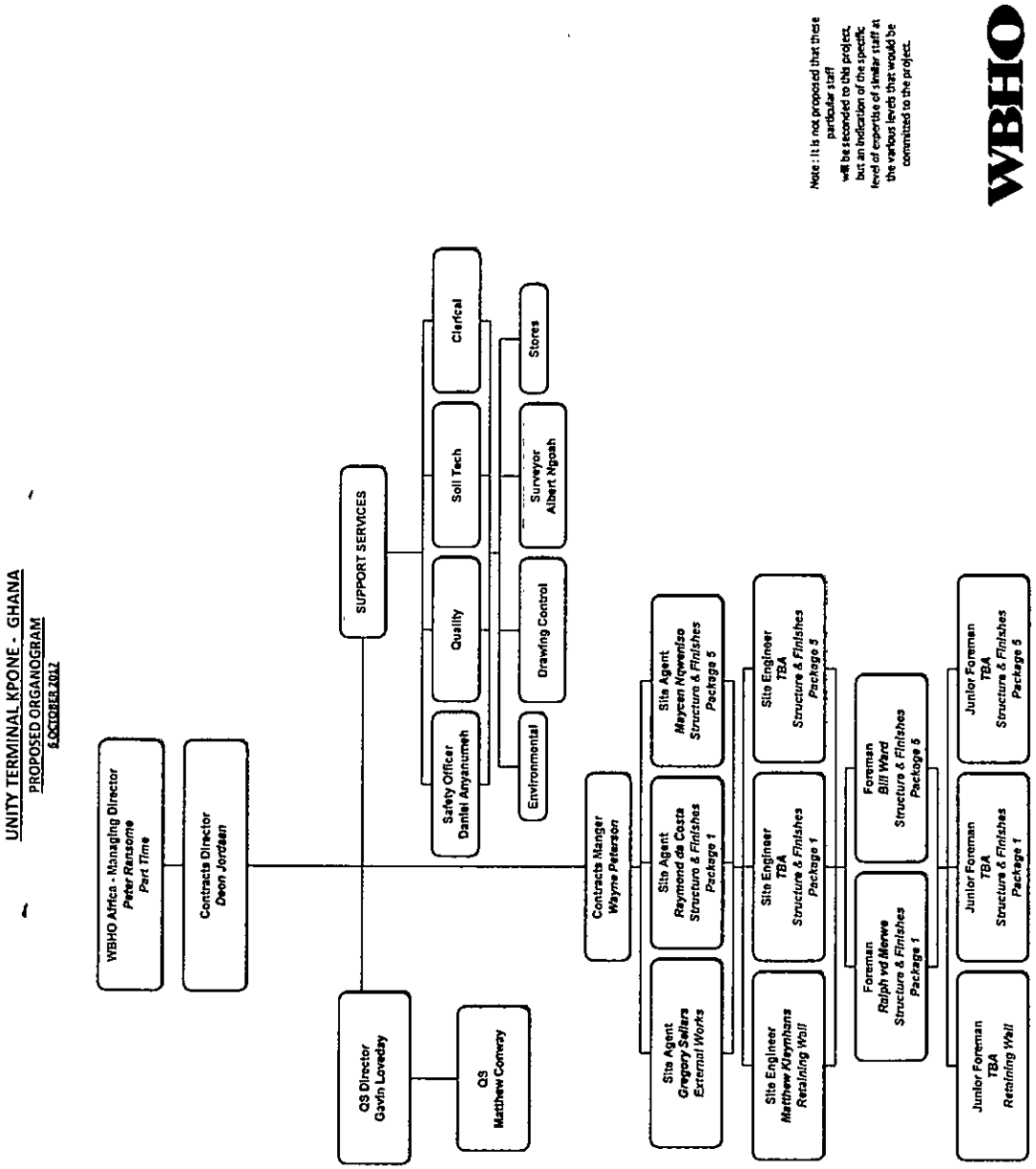


Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays

Activity N°	Activity Description	Durn	Current Start	Current Finish	Float
2818	Bar & Coffee shop	10	26 Feb 19	11 Mar 19	13
2820	Staff Toilets (01)	10	07 Mar 19	20 Mar 19	6
2822	Control Tower	10	28 Nov 18	11 Dec 18	57
2824	Fire bay	10	02 Oct 18	15 Oct 18	98
2826	Mechanical Workshop	10	25 Oct 18	07 Nov 18	81
2828	Heavy duty pavement	10	15 Mar 19	28 Mar 19	0
2830	Access Road	10	15 Mar 19	28 Mar 19	0
2832	**SUMMARY OF COMPLETION DATES**	**141**	**16 Aug 18**	**29 Mar 19**	**0**
2834	Retaining Wall	1	25 Sep 18	25 Sep 18	113
2836	Container Freight Station	1	16 Aug 18	16 Aug 18	140
2838	Customs Hall & GPHA Offices	1	21 Feb 19	21 Feb 19	26
2840	Bank	1	21 Feb 19	21 Feb 19	26
2842	Bar & Coffee shop	1	12 Mar 19	12 Mar 19	13
2844	Staff Toilets (01)	1	21 Mar 19	21 Mar 19	6
2846	Control Tower	1	09 Jan 19	09 Jan 19	57
2848	Fire bay	1	16 Oct 18	16 Oct 18	98
2850	Mechanical Workshop	1	08 Nov 18	08 Nov 18	81
2852	Heavy duty pavement	1	29 Mar 19	29 Mar 19	0
2854	Access Road	1	29 Mar 19	29 Mar 19	0
2856	**PRACTICAL COMPLETION**	**1**	**29 Mar 19**	**29 Mar 19**	**0**
2858	Practical Completion (29 Mar '19)	1	29 Mar 19	29 Mar 19	0



Legend: Non-critical | Critical | Overrun | Base Program | Contractual | Targets | Holidays



Note : It is not proposed that these particular staff will be seconded to this project, but an indication of the specific level of expertise of similar staff at the various levels that would be committed to the project.

WBHO

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CURRICULUM VITAE

PERSONAL INFORMATION	NAME:	**Peter Charles Ransome**		
	PRESENT POSITION:	Special Projects & Cross-Border Contracts Director	IDENTITY NO:	651121 5152 083
	NATIONALITY:	South African	DATE OF BIRTH:	21 November 1965
	MARITAL STATUS:	Married	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	B.Sc. Civil Engineering	Krugersdorp High School	1983 : Matric
	LANGUAGES:	English, Afrikaans	Wits Technikon	1985: T1 Civil Engineering
	YEARS IN CONSTRUCTION:	29 Years	University of Witwatersrand	1988: B.Sc. Civil Engineering + Pr Eng
	YEARS WITH WBHO:	26 Years	(UNISA)	2001 : B Com

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2017 – 2018	Contracts Director	Takoradi Mall – Ghana	US$ 25m
2016 – 2018	Contracts Director	Standard Chartered Bank Office Ghana	US$ 53m
2015 – 2016	Contracts Director	Alvanti Place Office High Rise Ghana	US$ 30m
2015	Contracts Director	Accra Mall Extensions Ghana	US$ 10m
2015 – 2016	Contracts Director	Pemba Retail – Mozambique	US$ 19m
2014 – 2017	Contracts Director	Kumasi City Mall – Ghana	US$50m
2014 - 2015	Contracts Director	Achimota Retail Centre	US$ 33m
2014 - 2016	Contracts Director	STATS SA	R1 485m
2012-2014	Contracts Director	West Hills Malls – Ghana	R490m
2005 - 2012	Managing Director	REINFORCING & MESH SOLUTIONS / VSL POST-TENSIONING (WBHO ASSOCIATE)	+/-R600m pa

YEAR	POSITION	DESCRIPTION	VALUE Millions
2005 - 2012	Managing Director	Kusile Power Station	+/-R600m pa
2005 - 2012	Managing Director	Project Lion Smelter Ph 1 and 2	+/-R600m pa
2005 - 2012	Managing Director	Gautrain Viaduct Erection (JV with VSL Australia)	+/-R600m pa
2005 - 2012	Managing Director	Peter Mokaba Stadium	+/-R600m pa
2005 - 2012	Managing Director	Cape Town Stadium	+/-R600m pa
2005 - 2012	Managing Director	Moses Mahbida Stadium	+/-R600m pa
2005 - 2012	Managing Director	Sandton City Extensions	+/-R600m pa
2005 - 2012	Managing Director	Greenstone Shopping Centre	+/-R600m pa
2005 - 2012	Managing Director	Morningside Shopping Centre	+/-R600m pa
2005 - 2012	Managing Director	Norwood Shopping Centre	+/-R600m pa
2005 - 2012	Managing Director	Kolonade Shopping Centre	+/-R600m pa
2005 - 2012	Managing Director	Clearwater Mall	+/-R600m pa
2005 - 2012	Managing Director	Cape Gate Shopping Centre	+/-R600m pa
2005 - 2012	Managing Director	Mall of the North	+/-R600m pa
2005 - 2012	Managing Director	Montana Shopping Centre	+/-R600m pa
2005 - 2012	Managing Director	Rosebank - The Zone	+/-R600m pa
2005 - 2012	Managing Director	Greenstone Mall	+/-R600m pa
2005 - 2012	Managing Director	Menlyn Parkade	+/-R600m pa
2005 - 2012	Managing Director	Kings Mall	+/-R600m pa
2005 - 2012	Managing Director	Langeberg Mall	+/-R600m pa
2005 - 2012	Managing Director	Garden Route Mall	+/-R600m pa
		WBHO CONSTRUCTION (PTY) LTD	
2005	Contracts Director	Welkom Mall	R40m
2005	Contracts Director	Gwen Lane	R70m
2003 – 2004	Contracts Director	DTI Trevenna Campus	R388m
2002	Contracts Director	Olivedale Clinic Theatre	R3m
2002	Contracts Director	Pretoria East Hospital Extensions	R36m
2002	Contracts Director	Linmed Hospital Extensions	R2m
2002	Contracts Director	Union Hospital ICU	R6m
2002	Contracts Director	Garden City Clinic Extensions	R5m
2002	Contracts Director	Park Lane Clinic Alterations	R1m
2002	Contracts Director	Unitas Hospital	R50m
2002	Contracts Director	Sunninghill Hospital	R20m
2001	Project Manager	Buhemba Mine, Tanzania	R20m
2000 – 2001	Project Manager	Emerald Safari Resort and Casino	R250m
1999 – 2000	Project Manager	Emperor's Palace Hotel, Casino and Retail	R376m
1998	Project Manager	Emerald Safari Resort and Temporary Casino	R45m
1998	Project Manager	Gracelands Hotel, Casino and Golf Course, Secunda	R94m
1997	Project Manager	Grand Palm Resort	
1995 – 1997	Estimator	Head Office Tendering / Planning	
1994	Central Planner	Columbus Stainless Steel Plant	R75m
1993 – 1994	Site Agent	Le Touessrok Hotel, Mauritius	R42m

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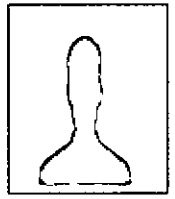
YEAR	POSITION	DESCRIPTION	VALUE Millions
1993 – 1994	Estimator	Head Office Tendering / Planning	
1993	Site Agent	Agora Shopping Centre	R7m
1992 - 1993	Site Agent	Fourways Shopping Centre	R18m
1992	Site Agent	Bristol Myers Factory and Office Block	R13m
1991	Site Engineer	Carousel Sun, Babelegi	R140m
1990	Site Engineer	Glaxo Pharmaceutical Facility	R65m
1989	Junior Site Engineer	Various Site Work in London	R8m
1988	Student	Rand Water Workshops and Stores, Zwartkoppies	R11m
1987	Student	Johannesburg Stock Exchange	R32m
1986	Student	Rand Water Filter Beds, Vereeniging	R11m

CURRICULUM VITAE



PERSONAL INFORMATION	NAME:	**Deon Jordaan**		
	PRESENT POSITION:	Contracts Director	IDENTITY NO:	660918 5209 089
	NATIONALITY:	RSA	DATE OF BIRTH:	18-09-1966
	MARITAL STATUS:	Divorced	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	BSc QS	Lyttleton Manor High	Matric
	LANGUAGES:	Afrikaans English	University of Pretoria	BSc QS
	YEARS IN CONSTRUCTION:	30 Years	Additional :	Various Contract, Technical and Software
	YEARS WITH WBHO:	1 Year		

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2017 - 2018	Contracts Director	Takoradi Mall - Ghana	US$ 25m
2017	Contracts Director	Standard Chartered Bank Office Ghana	US$ 53m
		PREVIOUS EMPLOYMENT	
2010-2017	Managing Director	Tri-Star Construction	R 950 mil
1996 - 2010	Managing Director	Stabilid Construction	R 1,5 bil

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CURRICULUM VITAE

PERSONAL INFORMATION	NAME:	**Gavin Loveday**		
	PRESENT POSITION:	QS Director	IDENTITY NO:	6307015045084
	NATIONALITY:	British	DATE OF BIRTH:	01 July 1963
	MARITAL STATUS:	Married	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	N.H. DIP. Building Surveying	Northview High School	1980 : Matric
	LANGUAGES:	English	Witwatersrand Technikon	1982 – 1986: N.H. DIP. Building Surveying
	YEARS IN CONSTRUCTION:	30 Years	YEARS WITH WBHO:	28 Years

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2017 – 2018	QS Director	Takoradi Mall – Ghana	US$ 25m
2015 - 2016	QS Director	Loftus Park	R713m
2016 – 2018	QS Director	Standard Chartered Bank Office Ghana	US$ 53m
2015 – 2016	QS Director	Alvanti Place Office High Rise Ghana	US$ 30m
2014 – 2017	QS Director	Kumasi City Mall – Ghana	US$ 50m
2014 - 2015	QS Director	Achimota Retail Centre Ghana	US$ 33m
2013 – 2016	QS Director	Mall Of Africa	R2 220m
2013 – 2014	QS Director	Heidelberg Mall	R379m
2012 - 2014	QS Director	Rosebank Mall Redevelopment	R600m
2012 - 2014	QS Director	West Hills Mall – Ghana	R490m
2012 – 2013	QS Director	Fluxmans Offices	R133m
2011 – 2012	QS Director	Middelburg Mall	R380m
2010 - 2012	QS Director	Nicolway Shopping Centre	R285m
2009 - 2011	QS Director	Mall of the North, Polokwane	R734m
2008 - 2010	QS Director	1 Station Place	R415m

YEAR	POSITION	DESCRIPTION	VALUE Millions
2008 – 2009	QS Director	Morningside Shopping Centre	R149m
2006 - 2008	QS Director	Fairlands Office Block	R815m
2006 – 2007	QS Director	Highveld Mall, Witbank	R450m
2005	QS Director	Garden Route Mall, George	R130m
2005	QS Director	Paarl Mall	R178m
2003 - 2004	QS Director	Dept. of Trade and Industry Campus, Pretoria	R388m
2003	QS Director	Kasane Lodge, Botswana	Pula 12m
2002 - 2003	QS Director	Hillside Expansion Project, Richards Bay	R92m
2001 - 2002	QS Director	Mozal Expansion Project, Mozambique	R90m
	QS Director	Orapa Secondary Primary Crusher, Botswana	Pula 42m
2000	QS Director	Imax Theatre, Hyde Park	R16m
	QS Director	Princess Place Retail Centre, Roodepoort	R85m
1999	QS Director	Liberty Life Office Block, Eastgate	R22m
1998 - 1999	QS Director	Norwich Lakeside Mall, Benoni	R250m
1997	QS Director	Leopard Creek Lodges	R30m
1996	QS Director	Alusaf Substation Extensions	R5m
1996	QS Director	Leopard Creek Golf Estate	R45m
1995	QS Director	Westgate Hyperama and Parkade	R30m
	QS Director	Eskom Hector Substation	R25m
1994	QS Director	Alusaf Main Substation	R30m
1993 - 1994	QS Director	Alusaf Bake Furnaces	R30m
1993	QS Director	Sechold House Office Block	R3m
1992 - 1993	QS Director	Office Block Randburg	R20m
	QS Director	Clinic - Bagleyston	R3m
	QS Director	Factory - Dormas	R1.5m
1990 - 1992	Q.S.	SA Breweries, Packline 11 & 12	R40m
1989	Snags Supervisor	Anglo Alpha	
	Q.S.	Unilever Ext	R2.5m
	Q.S.	SL25 Pumpstation	R1.2m
	Q.S.	Geduld Pump Station	
1987 - 1988		Army	
1986	Assist Q.S.	S.A.B. Isando offices Tendering	
	Q.S.	Benrose upgrade Q.S.	
1985	Surveying	Boksburg Fire Station	R2.5m
	Supervisor /	3 Rivers Shopping Centre	
	Trainee Q.S.	Benrose upgrade	
1984	Assist Q.S.	Mogwase Textiles	
	Foreman	Building Foreman – AECI Mankwe	
1983	Trainess Q.S.	Buying, estimating, Ceit Building + Snag lists / extras various jobs	

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CURRICULUM VITAE

PERSONAL INFORMATION	NAME:	Matthew Conway		
	PRESENT POSITION:	Quantity Surveyor	IDENTITY NO:	8708025049081
	NATIONALITY:	South African	DATE OF BIRTH:	1987-08-02
	MARITAL STATUS:	Single	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	BSc QS Hons	St Dunstan's College	Matriculated 2005
	LANGUAGES:	English	University of Witwatersrand	BSc QSS 2009-2011 BSc QS Hons 2012
	YEARS IN CONSTRUCTION:	4 Years		
	YEARS WITH WBHO:	4 Years		

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2016 – 2017	Quantity Surveyor	Thavhani Mall	R624m
2014 – 2017	Jnr QS	Mall Of Africa	R2 220m
2013 - 2014	Jnr QS	Fluxmans Offices	R133m
2013	Jnr QS	Rosebank Mall Redevelopment	R600m

CURRICULUM VITAE

PERSONAL INFORMATION

NAME:	**Daniel Tettey Anyanumeh**		
PRESENT POSITION:	HSE Officer	IDENTITY NO:	WBHOACB113
NATIONALITY:	Ghanaian	DATE OF BIRTH:	11TH April 1975
MARITAL STATUS:	Married	YEARS IN CONSTRUCTION:	13 Years
LANGUAGES:	English, Krobo, Twi And Ga	YEARS WITH WBHO:	4 Years

EDUCATION AND QUALIFICATIONS:

Qualifications:

- Safety Management
- Occupational Health Safety & Environment
- Occupational Health and Safety Certificate
- Construction Technician Certificate Iii
- Senior Secondary School Certificate.

Education:

Kaneshie SEC. TECH. SCH.	3years + SSSCE (1995)
Accra Polytechnic	3years + CTC III (2003)
Ghana Red Cross Society.	First Aid Certificate For Drivers (2016).
University Of Mines And Technology.	Safety Management (2015).
Logos Business School.	Occupational Health, Safety & Environment Management Certificate (2015).
Ghana Red Cross Society.	First Aid Certificate For Drivers (2012).
St. John Ghana.	First Aid At Work Certificate (2012).
Institute Of Commercial Management (ICM).	Occupational Health And Safety Management Certificate (2010).
National First Aid And Ambulance Drivers Training Centre (NAFAAD).	Automated Exernal Defibrillator Certificate (2010). First Aid Certificate (2010). Cardio Pulmonary Resuscitation Certificate (2010).

WBHO	Curriculum Vitae Template	Doc No.	TEN C-B 016
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EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD.	
2016 – 2017	HSE Officer	Kumasi City Mall	US$ 50m
2015 – 2016	HSE Officer	Alvanti Place Project. (Bulk Earthworks).	US$ 1.8m
2015	HSE Officer	Achimota Retail Centre	US$ 33m
2013-2015	HSE Officer	West Hills Mall – Ghana	R490m
		PREVIOUS EMPLOYMENT	
Feb 2013 – Aug 2013	HSLP Officer	M. Barbisotti And Sons Limited (Mbs) La Beach Towers.	
Feb 2012 – Feb 2013	HSLP Officer	M. Barbisotti And Sons Limited (Mbs) Newmont Gold Mines – Akyem Project.	
Jun 2008 – Feb 2012	Safety Officer	Ghana And Italy 5 Stars Hotel Deveelopment (G&I 5* Hotel); Movenpick Ambassador Hotel.	
Mar 2007 – Jun 2008	Site Engineer	Sierra Construction Limited; Simulator Building For Ghana Airforce Base.	
Jul 2005 – Dec 2006	Site Supervisor	Sequential J/A Construction; Africa Concrete Product (Acp) Estates At Pokuase.	
Sep 2004 – Jul 2005	Safety Officer	Bet Ghana Limited.	
Nov 2003 – Aug 2004	TUTOR	National Service; Lakanti L/A J.S.S. Jasikan District.	

CURRICULUM VITAE

PERSONAL INFORMATION	NAME:	**Wayne Mark Peterson**		
	PRESENT POSITION:	Contracts Manager	IDENTITY NO:	690620 5043 088
	NATIONALITY:	South African	DATE OF BIRTH:	20 June 1969
	MARITAL STATUS:	Single	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	B.Sc. Building Science	Florida Park High School	1986 : Matric
	LANGUAGES:	English, Afrikaans	University of Witwatersrand	1991 : B.Sc. Building Science
	YEARS IN CONSTRUCTION:	26 Years		
	YEARS WITH WBHO:	26 Years		

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2017	Contracts Manager	Time Square at Menlyn Maine	R1 826m
2014 – 2016	Contract Manager	Mall Of Africa	R2 220m
2012 - 2014	Contract Manager	Rosebank Mall Redevelopment	R600m
2012 - 2013	Contract Manager	Dihlabeng Retail Centre, Bethlehem	R208m
2009 – 2011	Contract Manager	Sandton City Revamp	R523m
2007 – 2009	Contract Manager	Peter Mokaba Stadium, Polokwane	R1,210m
2006 - 2007	Contract Manager	Menlyn Parkade	R100m
2005 – 2006	Senior Site Agent	Greenstone Shopping Centre	R536m

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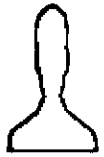
YEAR	POSITION	DESCRIPTION	VALUE Millions
2005	Senior Site Agent	Riverside Mall Extensions, Nelspruit	R104m
2004	Senior Site Agent	Clearwater Mall, Roodepoort	R331m
2003 – 2004	Senior Site Agent	DTI Campus	R388m
2002 – 2003	Senior Site Agent	Meerhof Dairy, Restaurant and Shops	R14m
2001 – 2002	Senior Site Agent	SA Chrome Horizon Project Civils	R50m
2001	Senior Site Agent	Emerald Casino Phase 2	R200m
1999 – 2000	Site Agent	Mimosa Shopping Centre, Bloemfontein	R146m
1998 – 1999	Site Agent	Zambezi Sewage Treatment Works	R23m
1997	Site Agent	Saldanha Steel Direct Reduction Iron Plant	R65m
	Site Agent	Saldanha Air Separation Plant	R7,7m
	Site Agent	Saldanha Steel Corex Plant	R60m
1996	Site Agent	Leopard Creek Golf Estate Maintenance Centre Clubhouse	R20m
1995	Section Engineer	Montana Shopping Centre	R62m
	Section Engineer	Cresta Shopping Centre Extensions	R60m
1994	Section Engineer	The Boardwalk Shopping Centre	R42m
	Section Engineer	Alusaf Aluminium Bake Furnace	R27m
1993	Section Engineer	Cresta Shopping Centre	R24m
1991 – 1992	Section Engineer	SA Breweries Extensions, Alrode	R60m

CURRICULUM VITAE



PERSONAL INFORMATION	NAME:	Gregory Sellers		
	PRESENT POSITION:	Site Agent	IDENTITY NO:	8810195090083
	NATIONALITY:	South African	DATE OF BIRTH:	19 October 1988
	MARITAL STATUS:	Single	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	Engineer Diploma	Afrikaans Hoerskool Germiston	Matric 2007
	LANGUAGES:	English Afrikaans	University of Johannesburg	2011 : National Diploma Civil Engineer
	YEARS IN CONSTRUCTION:	8 Years	YEARS WITH WBHO:	8 Years

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2017	Site Agent	140 West Street – JV	R583m
2017	Ass Site Agent	Time Square at Menlyn Maine	R1 826m
2015 – 2016	Site Engineer / Ass Site Agent	Mall Of Africa	R2 220m
2015	Site Engineer / Ass Site Agent	Rosebank Towers	R468m
2014	Site Engineer	Sun City Main Hotel Refurbishment	R33m
2013 – 2014	Site Engineer	Key West Shopping Centre	R160m
2012 - 2013	Student	Alexander Forbes New Offices	R613m
2011 - 2012	Student	The Podium Offices at Menlyn	R109m

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YEAR	POSITION	DESCRIPTION	VALUE Millions
2009 - 2011	Student	Lynnwood Junction, Pretoria	R471m

CURRICULUM VITAE

PERSONAL INFORMATION	NAME:	Raymond Da Costa		
	PRESENT POSITION:	Site Agent	IDENTITY NO:	8801205041083
	NATIONALITY:	South African	DATE OF BIRTH:	20 January 1988
	MARITAL STATUS:	Single	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	NDip Civil Engineering	Hillview High School	Matric
	LANGUAGES:	English	Tshwane University of Technology (TUT)	NDip Civil Engineering
	YEARS IN CONSTRUCTION:	7 Years		
	YEARS WITH WBHO:	7 Years		

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2016 – 2018	Site Agent	Time Square at Menlyn Maine	R1 826m
2014 – 2015	Site Engineer./ Assistant Site Agent	Gold Reef City Casino Expansion Phase 1	R204m
2012-2014	Site Engineer	90 Grayston Drive	R275m
2010	Student Engineer	Lynnwood Junction, Pretoria	R520m

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CURRICULUM VITAE

PERSONAL INFORMATION				
	NAME:	Maycen Ricardo Nqweniso		
	PRESENT POSITION:	Site Agent	IDENTITY NO:	9111015054089
	NATIONALITY:	South African	DATE OF BIRTH:	1 November 1991
	MARITAL STATUS:	Single	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	BSc Construction Management (Honours)	Lenasia Secondary	2009: Matric
	LANGUAGES:	Portuguese, English	University of the Witwatersrand	2011 – 2014 Honours in Construction Management
	YEARS IN CONSTRUCTION:	3 Years	YEARS WITH WBHO:	3 years

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2016 – 2017	Site Agent	Alice Lane Phase 3	R900m
2015 – 2016	Site Engineer	Mall Of Africa	R2 220m
2015	Site Engineer	Gold Reef City Casino Expansion Phase 1	R204m

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CURRICULUM VITAE

PERSONAL INFORMATION				
	NAME:	Matthew Robin Kleynhans		
	PRESENT POSITION:	Site Engineer	IDENTITY NO:	9304095019086
	NATIONALITY:	South African	DATE OF BIRTH:	09 April 1993
	MARITAL STATUS:	Single	EDUCATION AND QUALIFICATIONS:	
	QUALIFICATIONS:	• BSc Construction Studies • BSc (Hon) Construction Management	Hans Moore High School	2011 / Matric
	LANGUAGES:	English Afrikaans	University of the Witwatersrand	2012 – 2014 BSc Construction Studies
	YEARS IN CONSTRUCTION:	4 Years	University of the Witwatersrand	2015 BSc (Hon) Construction Management
	YEARS WITH WBHO:	1 Year		

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD	
2016 - 2018	Site Engineer	PWC Tower	R700m
		PREVIOUS EMPLOYMENT	
2014	Jnr Site Engineer	Vac work with Basil Read on Bruma lake rehabilitation project	
2013	Jnr Site Engineer	Vac work with Basil Read on new TWP head office at Melrose Arch	

JVDRIVER

ADDENDUM 001 TO the REQUEST FOR QUOTE (001-JVD-17)

This Addendum 001 to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. The Prime Contract stated in the Bid Data Sheet is revised to read;

   The Form of Subcontract is contained within the Bidding Documents.

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than 18th August 2017.

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this Addendum 001 document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 16/08, 2017

Company WBHO

Signature:

Print Name: Mark Smith

Designation: General Manager

Regards,

Shane Garvey
Project Manager

JVDRIVER

ADDENDUM 002 TO the REQUEST FOR QUOTE (001-JVD-17)

This **Addendum 002** to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. All information contained within **Bidders Information No. 1 issued 23rd August 2017.**

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than **5th October 2017.**

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this **Addendum 002** document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 26 September, 2017

Company WBHO Construction

Signature:

Print Name: T. Hayes

Designation: Estimator

Regards,

Shane Garvey
Project Manager

JVDRIVER

ADDENDUM 003 TO the REQUEST FOR QUOTE (001-JVD-17)

This **Addendum 003** to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. All information contained within **Bidders Information No.2 issued on 23rd August 2017.**

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than **5th October 2017.**

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this **Addendum 003** document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 26 September, 2017

Company WBHO Construction

Signature: T Hayes

Print Name: T. Hayes

Designation: Estimator

Regards,

Shane Garvey
Project Manager

JVDRIVER

ADDENDUM 004 TO the REQUEST FOR QUOTE (001-JVD-17)

This **Addendum 004** to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. All information contained within **Bidders Information No.3 issued on 23rd August 2017.**

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than **5th October 2017.**

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this **Addendum 004** document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 26 September, 2017

Company WBHO Construction

Signature: T Hayes

Print Name: T. Hayes

Designation: Estimator

Regards,

Shane Garvey
Project Manager

JVDRIVER

ADDENDUM 005 TO the REQUEST FOR QUOTE (001-JVD-17)

This **Addendum 005** to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. All information contained within **Bidders Information No.4 issued on 8th September 2017.**

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than **5th October 2017.**

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this **Addendum 005** document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 26 September 2017

Company WBHO Construction

Signature: TRHayes

Print Name: T Hayes

Designation: Estimator

Regards,

Shane Garvey
Project Manager

JVDRIVER

ADDENDUM 006 TO the REQUEST FOR QUOTE (001-JVD-17)

This **Addendum 006** to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. All information contained within **Bidders Information No.5 issued on 12th September 2017.**

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than **5th October 2017.**

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this **Addendum 006** document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 26 September 2017

Company WBHO Construction

Signature: TRHayes

Print Name: T Hayes

Designation: Estimator

Regards,

Shane Garvey
Project Manager

JVDRIVER

ADDENDUM 007 TO the REQUEST FOR QUOTE (001-JVD-17)

This **Addendum 007** to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. All information contained within **Bidders Information No.6 Issued on 20th September 2017.**

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than **5th October 2017.**

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this **Addendum 007** document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 26 September 2017

Company WBHO Construction

Signature: T Hayes

Print Name: T Hayes

Designation: Estimator

Regards,

Shane Garvey
Project Manager

JVDRIVER

ADDENDUM 008 TO the REQUEST FOR QUOTE (001-JVD-17)

This **Addendum 008** to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. All information contained within **Bidders Information No.7 Issued on 22nd September 2017.**

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than **5th October 2017.**

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this **Addendum 008** document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 26 September 2017

Company WBHO Construction

Signature: T Hayes

Print Name: T Hayes

Designation: Estimator

Regards,

Shane Garvey
Project Manager

JVDRIVER

ADDENDUM 009 TO the REQUEST FOR QUOTE (001-JVD-17)

This **Addendum 009** to the Request for Quote (001-JVD-17) is hereby issued by JV Driver Projects Inc. ("JVDP") for bidders to take into consideration in its proposal the following clarifications:

1. All information contained within **Bidders Information No.8 issued on 26th September 2017.**

Bidders are required to acknowledge receipt of this Addendum by electronic mail to sgarvey@jvdriver.com by returning a signed copy of this transmittal no later than 5th **October 2017.**

All terms and conditions of the original RFP Document (RFP: 001-JVD-17) shall remain in full force and effect unless specifically identified and modified in this **Addendum 009** document.

I hereby confirm receipt of the aforementioned addendum and will proceed accordingly.

Confirmed 26 September, 2017

Company WBHO Construction

Signature: TRHayes

Print Name: T. Hayes

Designation: Estimator

Regards,

Shane Garvey

Shane Garvey
Project Manager

Subcontractor: WBHO Construction (Pty) Ltd **Date:** 6 October 2017

Contact: The Construction of a Container Handlig and Devanning Terminal - **Telephone:** (+27) 011 321-7200

GENERAL

Complete legal name of company: WBHO Construction (Pty) Ltd

Registration No.: 1983/011953/07

Address: 53 Andries Street , Wynberg , Sandton 2090

PO BOX 531, Bergvlei, South Africa

Telephone: (+27) 011 321-7200 Fax: (+27) 011 887 -4364

Date Established: Since 1970 . WBHO Construction (PTY) Registered in 1983

Officers and Directors (Name & Title):

Please see attached Annexure A for Directors Details

SERVICES

Describe the Services your company normally provides or performs

Construction

☒	Earthwork	☒	Civil Works
☒	Structural	☐	Architectural
☐	Mechanical	☐	Piping
☐	Insulation	☐	Electrical /Instrumentation
☐	Steel Fabrication	☐	Piping Fabrication
☐	Mechanical Fabrication	☐	Module Erection
☐	Maintenance	☐	Manpower & Resources
☐	Service Work	☒	Specialty Services (Describe Below)
☒	Construction Design	☒	Other (Describe Below)

Describe any Specialty or Additional Services offered.

WBHO Construction (Pty) Ltd is a multi-disciplined construction company . The group's construction activities cover the full spectrum including Civil Engineering, Building and Roads and Earthworks related projects. WBHO also has a Projects Division which takes on PPP and EPC type work including Design and Build projects as well as Project Financed deals.

Subcontractor: WBHO Ghana Limited **Date:** 6 October 2017

Contact: The Construction of a Container Handling and Devanning Terminal **Telephone:** (+27) 011 321-7200

GENERAL

Complete legal name of company: WBHO Ghana Limited - subsidiary company registered in Ghana

Registration No.: WBHO Ghana Limited :CA16,566

Address: Plot No 73, Second Close, Airport Residential Area, Accra, Ghana

Telephone: (+27) 011 321-7200 Fax: (+27) 011 887 -4364

Date Established: WBHO Ghana Limited - Certificate to commence business: 16 Mar 2005

Officers and Directors (Name & Title):

Please see attached Annexure A for Directors Details

SERVICES

Describe the Services your company normally provides or performs

Construction

☒	Earthwork	☒	Civil Works
☒	Structural	☐	Architectural
☐	Mechanical	☐	Piping
☐	Insulation	☐	Electrical /Instrumentation
☐	Steel Fabrication	☐	Piping Fabrication
☐	Mechanical Fabrication	☐	Module Erection
☐	Maintenance	☐	Manpower & Resources
☐	Service Work	☒	Specialty Services (Describe Below)
☒	Construction Design	☒	Other (Describe Below)

Describe any Specialty or Additional Services offered.

WBHO Construction (Pty) Ltd is a multi-disciplined construction company . The group's construction activities cover the full spectrum including Civil Engineering, Building and Roads and Earthworks related projects. WBHO also has a Projects Division which takes on PPP and EPC type work including Design and Build projects as well as Project Financed deals.

List the types of work within the services you normally perform that you subcontract to others including brokers:

WBHO does all the earthworks, structure,wet-work and external roads & hardstands trades with own labour and skills. All further trades will be subcontracted.

1.0 SAFETY

The following information shall be provided to allow the assessment of subcontractor's safety commitment:

(a) A copy of Subcontractor's organization chart showing the position of personnel within the company who are:
- responsible for safety,
- responsible for the corporate safety program reporting to management
- responsible for the corporate safety program influences the construction employee.

(b) A copy of Subcontractor's corporate safety manual showing the safety philosophy, safety policy, safe work procedures and conveying management's commitment to safety.

(c) In province(s) where applicable, provide a copy of your "Certificate o Recognition (COR)" within the "Alberta Partners in Injury Reduction Program".

List your firm's Safety Performance for the five (5) most recent years.

	Current Year	Past Year	2 Yrs. Ago	3 Yrs. Ago	4 Yrs. Ago
Number of fatalities?	0	0	0	0	0
Number of lost time incidents?	0	0	1	1	0
Number of medical aid injuries?	0	1	1	1	1
Total Hours	845 673	1 739 564	3 714 070	3 629 650	1 491 879
Incident Frequency Rate	0	0	0.05	0.05	0
Injury Frequency Rate Number of Recordable Incidents x 200,000 Total Employee Hours (Yearly)					

Explanation of How to Calculate

** LTC Rate: The Lost-Time Claim (LTC Rate) is calculated by multiplying the number of lost time claims by 100 (or 200,000 hours) and dividing the result by the person-year estimate (or person-hours). The LTC rate represents the probability or risk of disabling injury or disease to a worker during a period of one year of work (actual incident risk per hours worked). This will yield the LTC rate expressed as "100 person-years worked", or as ("200,000 person hours worked").

ACTUAL RATE
LTC Rate (per 200,000 Hrs) = # of LTCs X 200,000 / person hours worked

ESTIMATED RATE
LTC Rate (per 100 Yrs) = # of LTCs X 100 / Estimated Person-years

*** Duration Rate: (Lost-Time Days) is calculated by multiplying the number of work days lost by 100 (or 200,000 hours) and dividing the result by the person-year estimate (or person-hours). This will yield the Duration Rate expressed as "days lost per 100 person-years worked" or as (200,000 person hours worked").

ACTUAL RATE
Duration Rate (per 200,000 Hrs) = # of Lost Days X 200,000 / person hours worked

ESTIMATED RATE
Duration Rate (per 100 Yrs) = # of Lost Days X 100 / Est. Person-years

Are incident and accident reports and report summaries sent to the following? How often?

		NO	YES	MONTHLY	QUARTERLY	ANNUALLY
(a)	Field Superintendent	☐	☒	☒	☐	☐
(b)	V.P. Construction	☐	☒	☒	☐	☐
(c)	President of Firm	☐	☒	☒	☐	☐

Do you hold site safety meetings for field supervisors? YES ☒ NO ☐

How often?	WEEKLY	BI-WEEKLY	MONTHLY	OTHER
	☒	☐	☐	☐

Do you conduct project safety inspections/audits? yes

(a) Audit of Corporate Management System (Safety Program) YES ☒ NO ☐

If yes, who conducts these inspections (title): Inspections are done by the Safety Officer
Audits are done by the Safety Coordinator

How often? Inspections : Weekly
Audits: Monthly

Are accident records and accident summaries kept? YES ☒ NO ☐

How often are they reported?	WEEKLY	BI-WEEKLY	MONTHLY	OTHER
	☒	☐	☐	☐

		NO	YES	MONTHLY	QUARTERLY	ANNUALLY
(a)	Accidents totalled for the entire company:	☐	☒	☒	☐	☐
(b)	Accidents totalled by project:	☐	☒	☒	☐	☐
(c)	Sub-totalled by Superintendent	☐	☒	☒	☐	☐
(d)	Total number of equipment damaged caused by Incidents/Accidents in the past year:		#11 (Minor Equipment damaged caused by Incidents / accidents.)			

List key safety personnel expected to be available for this project. Please list names and positions, for both home office and field staff, if possible.

GSS OH&S Director: George Kleinsmit
International OH&S Co-ordinator: Tito Moreira
Proposed Safety Officer Daniel Anyanumeh

Do you have an orientation program for new hires? YES ☒ NO ☐

If yes, does it include instruction on the following?

	YES	NO
Occupational Health and Safety (OH&S) Legislation:	☒	☐
Head, Eye, Hearing Protection:	☒	☐
Inspections	☒	☐
Incident Reporting	☒	☐
Respiratory Protection:	☒	☐
Fall Protection:	☒	☐
Scaffolding:	☒	☐
Security:	☒	☐
Housekeeping:	☒	☐
Fire Protection:	☒	☐
First Aid Facilities:	☒	☐
Emergency Procedures:	☒	☐
WHMIS:	☒	☐
Trenching and Excavation:	☒	☐
Signs, Barricades, Flagging:	☒	☐
Electrical Safety:	☒	☐
Rigging and Crane Safety:	☒	☐
Hazard Assessments	☒	☐
Incident Reporting:	☒	☐
Working Alone:	☒	☐
Hazardous Work:	☒	☐
Meetings:	☒	☐
Harassment:	☒	☐

Do you have an instruction program for newly hired or promoted foreman? YES ☒ NO ☐

If yes, does it include instruction on the following?

	YES	NO
OH&S Legislation Responsibilities:	☒	☐
Separate Company Safety Program Specific Responsibilities:	☒	☐
New Worker Orientation:	☒	☐
Pre job Planning:	☒	☐
Worksite Hazard Identification:	☒	☐
Safe Work Practices/Procedures:	☒	☐
Leadership for Safety Excellence:	☒	☐
Toolbox Meetings:	☒	☐
Emergency Procedures:	☒	☐
First Aid Procedures:	☒	☐
Incident Reporting Responsibilities and Accident Investigation:	☒	☐
Fire Protection and Prevention:	☒	☐

Do you hold craft "toolbox" safety meetings? YES ☒ NO ☐

If yes, how often?

- Daily: ☐
- Weekly: ☒
- Bi-Weekly: ☐
- Monthly: ☐
- Less often, as needed: ☐

Do you hold Weekly Safety meetings? YES ☒ NO ☐

If yes, who conducts them?
The Contstruction Manager

Are these meetings documented? YES ☒ NO ☐

Do you have in-house Training programs for:

		YES	NO
(a)	First Aid:	☒	☐
(b)	Workplace Hazardous Materials Information System (WHMIS):	☒	☐
(c)	Transportation of Dangerous Goods (T.D.G.):	☒	☐
(d)	Fire Prevention/Fire Extinguishers:	☒	☐
(e)	H_2S:	☒	☐
(f)	Defensive Driving:	☒	☐
(g)	Equipment Operating:	☒	☐

Do you provide employees with personal safety protection clothing, equipment (hard hats, hearing and eye protection, fire retardant coveralls, chainsaw pants)? YES ☒ NO ☐

Please list any required personal protection equipment that employees' are responsible for:
WBHO provides employees with the necessary PPE.

Does your company have a Drug and Alcohol Testing policy? YES ☒ NO ☐

	YES	NO
What Type of Testing is conducted?	☐	☐
Reasonable Cause	☒	☐
Post Incident	☒	☐
Pre Employment/Pre Access	☒	☐
Random	☒	☐

Do you have a Harassment Policy? YES ☒ NO ☐

Does your company have Canqual approval? YES ☐ NO ☒
Canqual access provided to JV Driver Projects? YES ☐ NO ☒

SAFETY INFORMATION CHECK LIST (attach the following)

- ☒ Latest WCB Employer Premium Rating Statement
- ☒ Copy(ies) of all Occupational Health and Safety "Safety Inspection Reports" (if any) for the last 3 years.
- ☒ Company Safety Manual.
- ☒ Company/Division Fall Protection Policy/procedures.
- ☒ Information on Site Superintendent, Safety Representative, etc.
- ☒ Copy(ies) of ACSA Partnership Agreement and other certificates of safety membership/affiliation.
- ☒ Sample safety inspection reports and investigation reports.

2.0 QUALITY ASSURANCE

☒ **Quality Organization**

Provide Organizational chart showing functional reporting of your quality department

☒ **Quality Manager**

Do you have a Quality Manager (or equivalent)	☒ Yes	☐ No
Have you enclosed his/her resume	☒ Yes	☐ No

☒ **Quality Program / System**

Do you have a Quality Program/System in effect?	☒ Yes	☐ No
Has an up to date Quality Manual been enclosed?	☒ Yes	☐ No
Are there QA/QC Procedures in effect?	☒ Yes	☐ No

When was the QA/QC Program initially implemented: 2004

Number of people involved in Quality: Refer to the attached Organogram under Annexure D

Has the QA/QC system been registered by any recognized authority? ☒ Yes ☐ No

Indicate the Quality Management System your Company is approved for:

☒	ISO 9001	☐	ISO 9002	☐	ISO 9003
☐	IAEA SC-QA3	☐	ANSI ABQC	☐	ASME
☐	DND	☐	MIL	☐	ABSA

Please provide date of last audit by Authority: 11 November 2016
Please provide details of the audit:
Please refer to Full report included under Annexure D

Do you use subcontractors? ☒ Yes ☐ No

If so, what processes and controls do you place on your subcontractors?
Vendor Registrations , Approved Vendor Lists , Vendor Audits, Vendor Guarantees , Vendor sub-contracts. Quality Audits.

☒ Please submit a copy of your up to date QA/QC program complete with applicable certifications, accreditations, sample turnover package, sample ITP and reference list.

3.0 RESOURCES AND OPERATIONS

a) Financial

Financial Volume: Annual billings for the last three years:

2016	ZAR 9,414,796,000 (Refer to Annexure E included - Audited Financial statements)
2015	ZAR 9,787,458,000(Refer to Annexure E included - Audited Financial statements)
2014	ZAR 7,504,625,000 (Refer to Annexure E included - Audited Financial statements)

List of References

Company Bank:	Stanbic Bank Ghana Limited
Branch:	Head Office
Contact Name:	Freda Owusu
Telephone:	(233) 244 – 343 282 (233) 202 - 221 1581
Line of Credit:	n/a
Number of years with Bank:	12 years (since 2005)

If applicable, please provide other bank references on a separate sheet.

Name of Surety Company: Guarantee in Ghana will be provided by Barclays

Bonding Agency: Guarantees issued off WBHO's facility with ABSA Bank Limited

Contact: Peter Mokebe Telephone: (+27) 011 895 - 6488

Available Bonding Limits

Performance & Labour Bonds:	$ 80m	Maximum
Material Payment Bonds:	$ included	Maximum

Name of Insurance Company: Activa International Insurance Ghana

Limits of Insurance:

	Limits:	Company's Phone No.:	Policy No.:	Expiry Date:
Automobile:	Plant All Risk : US$ 1million any one item Motor Fleet: N/a Own Fleet - GHC 150 000 - Truck/ Busses GHC 75 000 LDV's	(233)302-686352	PARA1300757 C/2001/2002/009 999/05/936	30 Sept 2018
Comprehensive:		( ) -		

General Liability:	Public Liability : US$5 million each and every occurance	(233)302-686352	MM3A1302006	30 Sept 2018
Other:	Contract Works / Public Liability : US$1 million each and every occurance	(233)302-686352	CARA1300517	30 Sept 2018

Approximate contract dollar range within which you are able to bid per project (ie low to high)

Lump Sum:	US$ 4 million	to	US$ 100 million
Unit Price:	US$ 4 million	to	US$ 100 million
Cost Reimbursable	US$ 4 million	to	US$ 100 million

Largest Project Completed: Please see attached Annexure G for detailed lists

Project Name: AGA Iduapriem Greenfields USD 75.5m Division: Roads & Earthworks Contact: Nana Boateng (+233) 277 - 754 452

b) Operations

Please list the components of the Subcontract Work that you would subcontract and identify the subcontractor.

Does your company have a materials handling or materials control program? ☒ Yes ☐ No

Please include a copy of your procurement and materials management program including what procedures are in place for the receipt and handling of materials provided by Others.

c) Equipment and Facilities

Please provide a listing and description of the facilities that the company owns or proposes to use for the Subcontract Work.

Please provide a listing of Owned equipment proposed for use in the Subcontract Work.

Please provide a listing and description of any marshalling or warehouse facilities proposed for the Subcontract Work.

MAJOR JOBS IN PROGRESS

Customer/Location	Type of Work	Size $M	Customer Contact	Telephone	Fax
Standard Chartered Bank Head Office Ghana	**Building Head Office**	**$52.9m**	**RMB Westport Fatima Wadiwalla**	(+27)83-377 6721	(n/a) - email address: fatima.wadiwalla@rmbwestport.com
Ahafo Same & Subika Location: Brong Ahafo Region - Ghana	**Roads & Earthworks Civil Works**	**$17.5m**	**DRA Projects (Pty) Ltd Sybrand vd Spuy**	(+27) 011-587 0229	(n/a) - email: Sybrand.VDSpuy@DRAglobal.com
Takoradi Mall	**Building shopping Centre**	**$25m**	**Takoradi Mall Limited**	(n/a) -	(n/a) - email:richard@bovellross.com
				( ) -	( ) -

				( ) -	( ) -
				( ) -	( ) -

MAJOR JOBS UPCOMING

Customer/Location	Type of Work	Size $M	Start Date	End Date	Peak Labor Force Requirement
Tema Mall	**Retail**	**+/- US$ 25 m**	**July 2018**	+/- 20 construction months	To be determined at tender stage
Adenta Mall	**Retail**	**+/- US$ 15m (x 5)**	**March 2018**	+/- 15 construction months	To be determined at tender stage
Accra Mall II	**Retail**	**+/- US$ 18m**	**June 2018**	+/- 15 construction months	To be determined at tender stage
*** Please note this is**	**only an**	**indication of**	**the Building**	Division	Projects

STABILITY

Provide details of last five (5) most recent projects completed with contacts:

Project:	Client:	Contact:	Telephone:
Kumasi City Mall	Delico Kumasi Limited (Atterbury Properties)	Cobus van Heerden	(+27)011-463 5385 Cobus@atterbury.co.za
Accra Mall Phase 1 A and B	Accra Mall Limited	Roux Gerber	(+233)545-244 332 roux@atterbury.co.za
Achimota Retail Centre	Delico Achimota Ghana Limited (Atterbury)	Cobus van Heerden	(+27)011-463 5385 Cobus@atterbury.co.za
West Hills Mall Ghana	Delico Property Developments (Atterbury)	Cobus van Heerden	(+27)011-463 5385 Cobus@atterbury.co.za
Junction Mall	RMB Westport	Bovell Ross Project Management: Richard Bovell	(+27)012-427 2000 Richard@bovellross.com

Has your company ever failed to complete a contract awarded to you? If so please explain (attach additional information, as necessary):

NO

Has your company ever liened a project? If so please explain (attach additional information, as necessary. If more than one project please list projects and dates on separate sheet):

NO

d) Legal Actions

Are there any judgments, claims or suits pending or outstanding against your company? ☐ Yes ☒ No

If yes, please attach details.

Are you now, or have you ever been, involved in any bankruptcy or reorganization proceedings? ☐ Yes ☒ No

If yes, please attach details.

e) Labor Resources

Number of permanent employees in home office location:
Ghana: 14 (11 local, 3 Expat) - Support From WBHO Head Office - South Africa
WBHO Head Office : 282
WBHO Plant Chloorkop : 75
Botswana Office: 8
Cape Town Head Office : 25 Cape Town Plant : 18
Eastern Cape Head Office : 14
KZN Head Office : 24
Mozambique Head Office : 13

Number of permanent employees in other locations:
Ghana : 68 (43 local, 25 Expat) - Support From WBHO Head Office - South Africa
WBHO All other division : Site Based : 7 039 (Salaries & Wages)

Please describe any affiliations with labour organizations
N/A

Please list all trade agreements or labour contracts that your company or any affiliate is a signatory to (include expiry date)
N/A

f) Key Personnel

Please provide your head office and proposed organization matrix for the management of the Subcontract Work. Please include resumes and the responsibilities and duties for each key person proposed for the work.

REGISTRATION DOCUMENTS

WBHO GHANA LIMITED

No. CA-16,566

REPUBLIC OF GHANA

Certificate of Incorporation

I hereby certify that the

WBHO (GHANA) LIMITED

is this day incorporated under the Companies Code, 1963 (Act 179) and that the liability of its members is limited.

Given under my hand and official seal at Victoriaborg, Accra, this 11TH day of MARCH 2005

For: *Registrar of Companies, Ghana*

No. CA-16,566 TIN: 924-G00-0401

COMPANIES CODE, 1963

REPUBLIC OF GHANA

CERTIFICATE TO COMMENCE BUSINESS

I hereby certify that

WBHO GHANA LIMITED

having complied with the provision of Sections 27 and 28 of the Companies Code, 1963 is entitled to commence business with effect from 16th March, 2005

Given under my hand at Accra this 16th day of March, 2005

Assistant Registrar of Companies

ORIGINAL
(For Tax Payer)

REPUBLIC OF GHANA

T16/ 0031267

Date 26 / 07 / 17 (DD MM YY)

Amount Paid (GH¢) 1.00

GHANA REVENUE AUTHORITY
TAX CLEARANCE CERTIFICATE

Issuing Office LTO AHQR

Name / Address WBHO (GHANA) LTD

Occupation CONSTRUCTION File no.

Year of Assessment 2017 TIN C0002864983

In compliance with section 118 of the Internal Revenue Act, 2000 (Act 592)

WBHO (GHANA) LTD

has applied to me for a Tax Clearance Certificate for the following purpose:

TO TENDER FOR CONTRACTS ONLY

2. I confirm from the information available that:

WBHO (GHANA) LTD

a) has paid his/her/its tax liabilities up to and including the 20 17 year of assessment.

b) has paid P.A.Y.E. and other witholding Taxes up to and including JUNE

c) has submitted all tax returns up to date.

d) has registered with the Ghana Revenue Authority.

3. BELOW IS A SUMMARY OF HIS / HER / ITS TAX POSITION FOR THREE YEARS

YEAR OF ASSESSMENT	CHARGEABLE INCOME	TAX CHARGED	TAX PAID	TAX OUTSTANDING
2016	16,000,000.00	4,000,000.00	5,050,207.90	NIL
2017	27,608,000.00	6,902,000.00	9,629,822.47	NIL
2018	SELF ASSESSMENT YET TO BE SUBMITTED			

4. I therefore issue this certificate which is valid up to 30TH SEPT 2017

C M Damoah

FOR THE COMMISSIONER-GENERAL OF THE GHANA REVENUE AUTHORITY

(GEORGINA OPPONG-~~DAMOAH~~MRS)

(I.T. FORM 340)

REGISTRATION DOCUMENTS

WBHO CONSTRUCTION (PTY) LTD

FORM CM 1

REPUBLIC OF SOUTH AFRICA

COMPANIES ACT, 1973
(Section 64)

Registration No. of Company
83 11953/07

CERTIFICATE OF INCORPORATION OF A COMPANY HAVING A SHARE CAPITAL

This is to certify that
BAYLY WILSON HOLMES (PTY.) LIMITED
was this day incorporated under the Companies Act, 1973, (Act 61 of 1973), and that the Company is a company having a share capital.

Signed and sealed at Pretoria this 2 day of November One Thousand Nine Hundred and EIGHTY THREE (1983)

REGISTRAR OF COMPANIES

Seal of Companies
Registration Office.

This certificate is not valid unless sealed by the seal of the Companies Registration Office.

Republic of South Africa
Companies Act, 1973, Section 44(1)(b)

Republiek van Suid-Afrika
Maatskappywet, 1973, Artikel 44(1)(b)

Form/Vorm CM9

1996 -07- 22 Registration No. of company/Registrasienommer van maatskappy
83/11953/07

Certificate of change of name of company

Sertifikaat van verandering van naam van maatskappy

This is to certify that/Hierby word gesertifiseer dat
WILSON BAYLY HOLMES - OVCON CONSTRUCTION (PROPRIETARY) LIMITED

has changed its name by SPECIAL RESOLUTION and is now called
sy naam verander het by SPESIALE BESLUIT en nou genoem word

WBHO CONSTRUCTION (PROPRIETARY) LIMITED

and that the new name has this day been entered in the Register of Companies.
en dat die nuwe naam op hierdie dag in die Register van Maatskappye aangeteken is.

Signed and sealed at Pretoria, this/Geteken en geseël te Pretoria op hede die 17th
day of/dag van July
One Thousand Nine Hundred and/Eenduisend Negehonderd 96

Registrar of Companies/Registrateur van Maatskappye

Seal of Companies Registration Office
Seël van Registrateur van Maatskappye

Business Bank

Republic of South Africa
Companies Act, 1973, Section 44(1)(b)

Republiek van Suid-Afrika
Maatskappywet, 1973, Artikel 44(1)(b)

Form/Vorm CM9

CERTIFIED A TRUE COPY OF THE SIGNED COPY FILED IN THE REGISTRAR OF COMPANIES SOUTH AFRICA REG. NO. 83/11953/07 BERGVLEI BRANCH

Registration No. of company/Registrasienommer van maatskappy
83/11953/07

Certificate of change of name of company

Sertifikaat van verandering van naam van maatskappy

This is to certify that/Hierby word gesertifiseer dat

WILSON BAYLY HOLMES (PROPRIETARY) LIMITED

has changed its name by SPECIAL RESOLUTION and is now called
sy naam verander het by SPESIALE BESLUIT en nou genoem word

WILSON BAYLY HOLMES - OVCON CONSTRUCTION (PROPRIETARY) LTD.

and that the new name has this day been entered in the Register of Companies.
en dat die nuwe naam op hierdie dag in die Register van Maatskappye aangeteken is.

Signed and sealed at Pretoria, this/Geteken en geseël te Pretoria op hede die 2nd
day of/dag van January
One Thousand Nine Hundred and/Eenduisend Negehonderd Ninety Six

Registrar of Companies/Registrateur van Maatskappye

Certificate of change of name dated 12/12/95 herewith
Hierby sertifikaat van verandering van naam gedateer

Name of Company / Naam van maatskappy: WILSON BAYLY HOLMES - OVCON CONSTRUCTION (PTY) LTD.

Postal Address / Posadres: P.O. BOX 531, BERGVLEI, 2012

Date stamp of Registrar of Companies / Datumstempel van registrasiekantoor vir Maatskappye. Registrateur van Maatskappy: 01 - 03

REGISTRATEUR VAN MAATSKAPPYE EN VAN BESLOTE KORPORASIES

REGISTRAR OF COMPANIES

Republic of South Africa
Companies Act, 1973, Section 44(1)(b)

Republiek van Suid-Afrika
Maatskappywet, 1973, Artikel 4

Form/Vorm CM9

REGISTRATEUR VAN MAATSKAPPYE
POSBUS 429 P.O. BOX
11 -11-1983
PRETORIA
REGISTRAR OF COMPANIES

Registration No. of company/Registrasienommer van maatskappy

83/11953/07

Certificate of change of name of company

Sertifikaat van verandering van naam van maatskappy

This is to certify that/Hierby word gesertifiseer dat

BAYLY WILSON HOLMES (PROPRIETARY) LIMITED

has changed its name by SPECIAL RESOLUTION and is now called
sy naam verander het by SPESIALE BESLUIT en nou genoem word

WILSON BAYLY HOLMES (PROPRIETARY) LIMITED

and that the new name has this day been entered in the Register of Companies.
en dat die nuwe naam op hierdie dag in die Register van Maatskappye aangeteken is.

Signed and sealed at Pretoria, this/Geteken en geseël te Pretoria op hede die 11th

day of/dag van November

One Thousand Nine Hundred and/Eenduisend Negehonderd Eighty three

Registrar of Companies/Registrateur van Maatskappye

Seal of Companies Registration Office
Seël van Registrateur van Maatskappye

Certificate issued by the Commissioner of Companies & Intellectual Property Commission on Monday, May 19, 2014 at 7:51

Companies and Intellectual Property Commission
A member of the dti group

Certificate of Director Amendments

CoR 39

Registration Number: 1983 / 011953 / 07
Enterprise Name: WBHO CONSTRUCTION

ENTERPRISE INFORMATION

Registration Number	1983 / 011953 / 07
Enterprise Name	WBHO CONSTRUCTION
Enterprise Shortened Name	WBH
Enterprise Translated Name	
Registration Date	02/11/1983
Business Start Date	02/11/1983
Enterprise Type	Private Company
Enterprise Status	In Business
Financial Year End	June
Number of Directors	6
Description of Principal Business	CONSTRUCTION

Addresses	POSTAL ADDRESS	ADDRESS OF REGISTERED OFFICE
	P O BOX 531	53 ANDRIES STREET
	BERGVLEI	WYNBERG
		SANDTON
	2012	2090

DETAILS OF AUDITOR / ACCOUNTING OFFICER

Name	BDO SOUTH AFRICA INCORPORATED
Membership/Practice No	905526E
Profession	Chartered Accountants
Postal Address	PRIVATE BAG X60500 HOUGHTON 2041
Telephone Number	011 4881700
Fax Number	011 4881701
Email Address	stephen-shaw@bdo.co.za
Cell Number	
Appointment Date	01/03/2010

Physical Address
the dti Campus - Block F
77 Meintjies Street
Sunnyside 0001

Postal Address: Companies
P O Box 429
Pretoria
0001

Docex: 256
Web: www.cipc.co.za
Contact Centre: 086 100 2472 (CIPC)
Contact Centre (International): +27 12 394 9500

Certificate issued by the Commissioner of Companies & Intellectual Property Commission on Monday, May 19, 2014 at 7:51

Companies and Intellectual Property Commission
a member of the dti group

Certificate of Director Amendments

CoR 39 Registration Number: 1983 / 011953 / 07
Enterprise Name: WBHO CONSTRUCTION

ACTIVE DIRECTORS

Surname and First Names	Type	ID Number / Date of Birth	Contrib. (R)	Interest (%)	Appoint. Date	Address
MASHISHI, EDWIN ABRAM	Director	7309185779087	0.00	0.00	01/04/2009	Postal: P O BOX 12355, TREMLOODS, 0001 Residential: 341 WOLF STREET, WATERKLOOF, PRETORIA, 0181
HENWOOD, CHARLES VICTOR	Director	6310075085081	0.00	0.00	01/07/2010	Postal: 35 STYMIE AVENUE, LAKEVIEW, LAKEFIELD, BENONI, 1501 Residential: 35 STYMIE AVENUE, LAKEVIEW, LAKEFIELD, BENONI, 1501
NEL, ELIA LOUW	Director	6102205054081	0.00	0.00	25/09/2001	Postal: P O BOX 531, BERGVLEI, 2012 Residential: 283 GANS-SE-NES, FEATHERBROOK ESTATE, MOGALE CITY, 1739
FOLEY, PAUL JOSEPH	Director	6702235185084	0.00	0.00	01/07/2008	Postal: P O BOX 531, BERGVLEI, 2012 Residential: 119 CEDAR STREET, NORTHCLIFF, 2115
ARMSTRONG, TERRENCE RONALD	Director	5707145031089	0.00	0.00	01/11/2005	Postal: P O BOX 531, BERGVLEI, 2012 Residential: 62A MANDEVILLE ROAD, BRYANSTON, 2021
SMITH, RICHARD MONTAGUE	Director	5808055063086	0.00	0.00	01/04/2014	Postal: P O BOX 14607, WITFIELD, WITFIELD, 1467 Residential: 46 HALIFAX STREET, BRYANSTON, 2021

Physical Address
the dti Campus - Block F
77 Meintjies Street
Sunnyside 0001

Postal Address: Companies
P O Box 429
Pretoria
0001

Docex: 256
Web: www.cipc.co.za
Contact Centre: 086 100 2472 (CIPC)
Contact Centre (International): +27 12 394 9500

SARS

Tax Clearance Certificate Number:
0700/2/2017/A000932375

Tax Clearance Certificate - Good Standing

Enquiries
0800 00 SARS (7277)
Approved Date
2017-05-04
Expiry Date
2018-05-04

Company registration number 1983/011953/07

Income Tax	9700223713 WBHO CONSTRUCTION (PTY) LTD
VAT	4650107529 WBHO CONSTRUCTION (PTY) LTD
PAYE	7250722909 WBHO CONSTRUCTION (PTY) LTD
Trading Name	WBHO CONSTRUCTION PTY LTD

It is hereby confirmed that, on the basis of the information at the disposal of the South African Revenue Service (SARS), the above-mentioned taxpayer has complied with the requirements as set out in the Tax Administration Act.

This certificate is valid until the expiry date reflected above, subject to the taxpayer's continued tax compliance. To verify the validity of this certificate, contact SARS through any of the following channels:

- via eFiling
- by calling the SARS Contact Centre
- at your nearest SARS branch

This certificate is issued in respect of the taxpayer's tax compliance status only, and does not address any other aspect of the taxpayer's affairs.

This certificate is issued free of charge by SARS

SARS

TAX COMPLIANCE STATUS
PIN Issued

WBHO CONSTRUCTION (PTY) LTD
BERGVLEI
2012

Enquiries should be addressed to SARS:

Contact Detail

SARS
Alberton
1528

Contact Centre Tel: 0800 00 SARS (7277)
SARS online: www.sars.gov.za

Details

Taxpayer Reference Number: 9700223713
Case Number:
Issue Date: 2017/05/04

Always quote this reference number when contacting SARS

Dear Taxpayer

TAX COMPLIANCE STATUS PIN ISSUED

The South African Revenue Service (SARS) has issued your tax compliance status (TCS) PIN as indicated below:.

TCS Details:	
Taxpayer Name	Wbho Construction (Pty) Ltd
Trading Name	WBHO CONSTRUCTION PTY LTD
Tax Reference Number(s)	IT - 9700223713 Vat - 4650107528 PAYE - 7250722909
Purpose of Request	Good Standing
Request Reference Number	0002896156GS0405171023566
PIN	D711B6074T
PIN Expiry Date	04/05/2018

You may authorise a third party to view your TCS by providing them the PIN. The PIN only allows the third party access to your TCS. All other tax information remains secure.

Your TCS displayed is based on your compliance as at the date and time the PIN is used.

You may cancel this PIN at any time before the expiry date reflected above. Once cancelled, a third party will not be able to verify your TCS.

SARS reserves the right to cancel this PIN in the event that it was fraudulently issued or obtained.

Should you have any other queries please call the SARS Contact Centre on 0800 00 SARS (7277). Remember to have your taxpayer reference number at hand when you call to enable us to assist you promptly.

Sincerely
ISSUED ON BEHALF OF THE SOUTH AFRICAN REVENUE SERVICE

WBHO GHANA LIMITED

UNITY TERMINAL KPONE
001-JVD-017
TENDER

ANNEXURE	(1)	WBHO SAFETY ORGANOGRAM
ANNEXURE	(2)	WBHO SAFETY MANUAL
ANNEXURE	(3)	WBHO CERTIFICATES OF RECOGNITION
ANNEXURE	(4)	WBHO STATS
ANNEXURE	(5)	WBHO WCB GHANA
ANNEXURE	(6)	WBHO ASSESSMENT REPORTS (EXAMPLES)
ANNEXURE	(7)	WBHO FALL PROTECTION PLAN
ANNEXURE	(8)	WBHO INSPECTION & INVESTIGATION REPORTS (SAMPLE)
ANNEXURE	(9)	PROPOSED SAFETY REPRESENTATIVE (OR SIMILAR QUALIFIED)

WBHO Construction – Divisional OHS Appointments

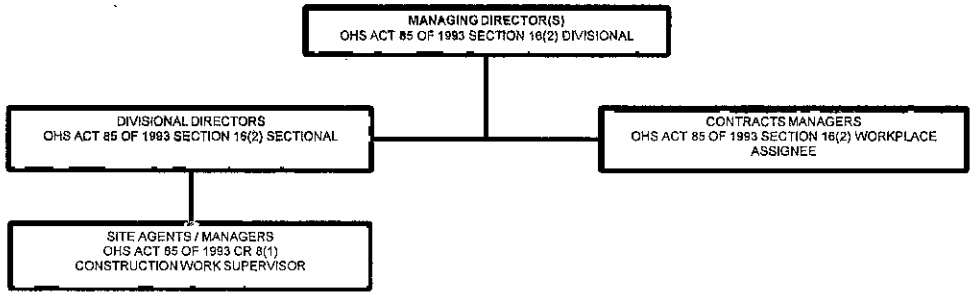


Figure – 2

WBHO Construction – OHS Management Appointments

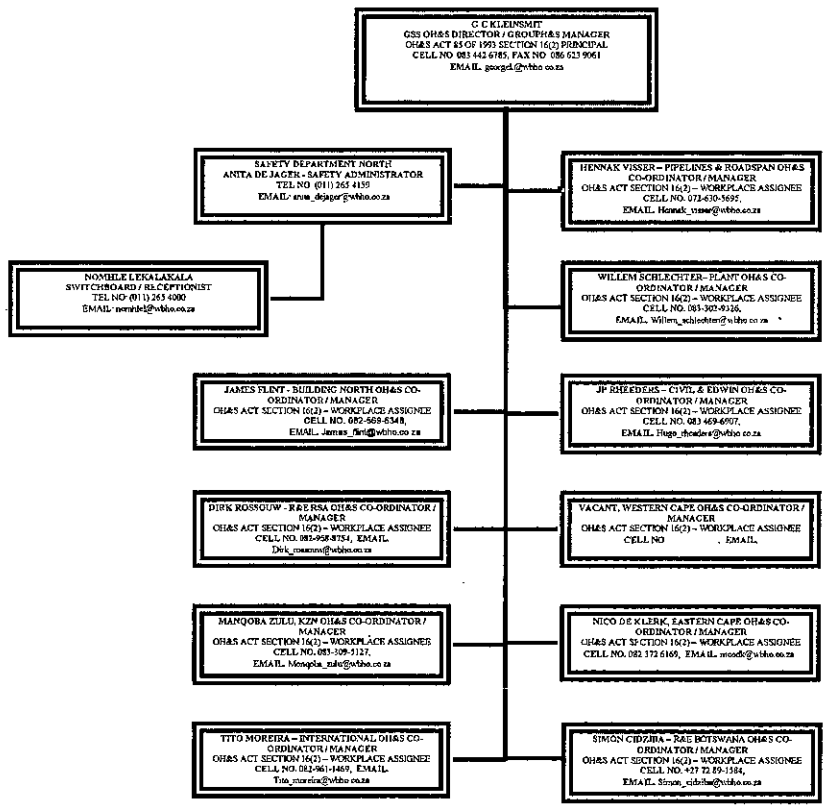
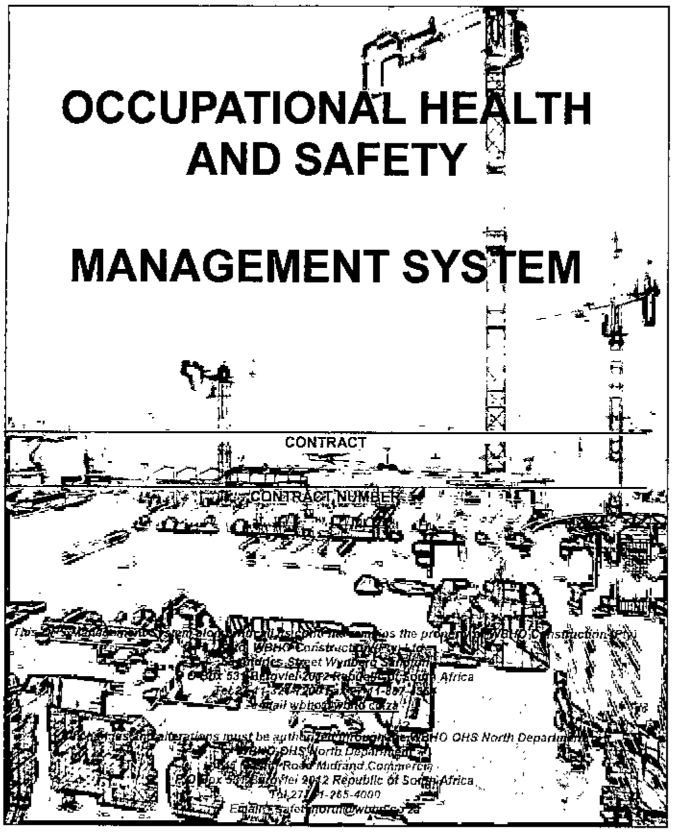
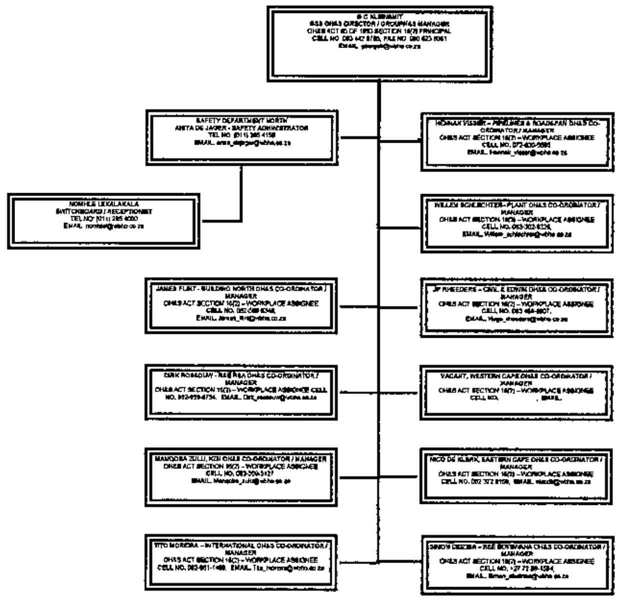


Figure – 3



ORGANOGRAM



1. SCOPE

The scope of the OHS management system covers all routine and non-routine activities, activities of all employees, temporary employees that have access to the workplace including sub-contractors and visitors that have the potential to affect, positively or negatively, the OHS of any other person in the workplace, the environment, the community and the shareholders.

WBHO Main Business Activity

a) **Building Construction** involving: Retail Centers, Hotel and Resorts, Leisure and recreation, Office and commercial buildings, Pharmaceutical facilities, Hospitals and Clinics, Wineries, Restorations and Alterations, Education and research, Residential developments and Miscellaneous building.

b) **Civil Engineering** involving. Water & Effluent treatment, reservoirs, water control and marine works, mining, silos and towers, power and distribution stations, heavy industrial plants, industrial parks, and other sundry civil works.

c) **Roads & Earthworks** involving Bridges, freeways, road construction and rehabilitation, railways, township infrastructures, pipelines, dams, mining and tunneling, various other earthworks

d) **Pipelines Involving:** Excavations, trenches, lying of different types of pipes for water reticulation, gas lines, fuel lines, building of pump stations, rehabilitation of existing pipelines and rehabilitation of construction areas.

e) **Roadspan Involving:** Short duration surfacing contracts and managing of existing Batch plants where Bitumen and Emulsions are prepared in mix designs to be utilised in surfacing of roads.

Central / H/O Function involves the management and service assistance to the projects in the form of administration, plant and machinery maintenance, plant and machinery purchase, refurbishment of equipment, logistics and office buildings

The Occupational Health and Safety Management System (OH&S MS) is designed to adhere to applicable Legislation and all other requirements imposed on construction activities where WBHO are involved, is to be used on all WBHO construction projects where construction work is conducted or managed by WBHO, or where WBHO is the lead partner in a joint venture partnership with other construction companies, with the aim of constructing buildings, civil works or roads for the Public and Private sector by WBHO Construction.

WBHO Occupational Health and Safety Management System was designed to:

a) Eliminate or minimise risks to personnel and other interested parties who could be exposed to OH&S hazards associated with its activities;
b) Implement, maintain and continually improve an OH&S management system;
c) Assure itself of its conformity with its stated OH&S policy;
d) Demonstrate conformity with the OHSAS 18001 2007 Standard by:
    a. Making a self-determination and self-declaration,
    b. Conformance by parties having an interest in the organisation, such as customers, or
    c. Confirmation of its self-declaration by a party external to the organisation, or
    d. Certification / registration of its OH&S management system by an external organisation.

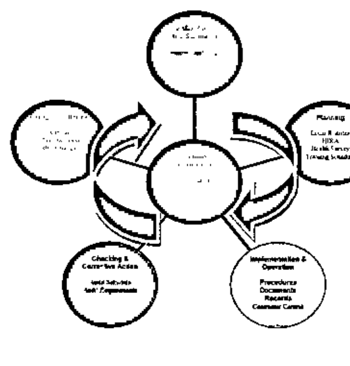
In developing the Occupational Health and Safety Management System, cognizance has been taken of the following Management Principles;

- Legal obligations and requirements
- Employee focus and involvement
- Customer focus
- Leadership
- Continual Improvement Principles
- Supplier and Contractor relationships.

OH&S MANAGEMENT SYSTEM MODEL FOR BS OHSAS 18001:2007

PLAN: Establish the objectives and processes necessary to deliver results in accordance with Organisation's OH&S policy
Do: Implement the processes.
Check: Monitor and measure processes against OH&S policy, objectives, legal and other requirements, and report the results.
Act: Take action to continually improve OH&S performance.

BS OHSAS 18001:2007



2. REFERENCE OF PUBLICATIONS

Reference Publications that provide information or guidance are listed below

BS OHSAS 18001:2007: Occupational Health and Safety Assessment Series
OHSAS 18002:2008: Guidelines for the Implementation of OHSAS 18001:2007

International Labour Organisation: 2001, Guidelines on Occupational Health and Safety Management Systems (ILO-OSH:2001)

3. ABBREVIATION, TERMS & DEFINITIONS

Throughout the OH&S Management System various terms, references and abbreviations will be utilized. Please note that the explanations given below do not supersede any legal definitions as contained in the relevant applicable legislation. The explanations below therefore merely give a brief explanation. Please consult applicable legislative definitions.

Abbreviation or Term	Explanation / Definition
Acceptable Risk	Risk that has been reduced to a level that can be tolerated by having regard to its legal obligations and its own OH&S Policy
Annexure 1	Standard investigation form required for any injury requiring medical treatment from either a doctor or hospital. Completed and kept on file for 2 years.
Audit	Systematic, independent and documented process for obtaining "audit evidence" and evaluating it objectively to determine the extent to which "audit criteria" are fulfilled **Note 1:** Independent does not necessarily mean external to the organisation. In many cases, particularly in smaller organisations, independence can be demonstrated by the freedom from responsibility for the activity being audited. **Note 2:** For further guidance on "audit evidence" and "audit criteria" see ISO 19011.
Client	Means any person for whom construction work is performed. Client may appoint an agent who acts on behalf of the client.
COID Act	Compensation for Occupational Injury & Diseases Act 130 of 1993 Republic of South Africa.
Competent person	Means any person having the knowledge, training, experience and qualifications specific to the work or task being performed.
Construction work	The erection, maintenance, alteration, renovation, repair, demolition, dismantling, addition, to a building, fixed plant, civil engineering or earthmoving structure.
Contractor	Means an employer who performs construction work and includes Principal Contractors.

Continual Improvement	Recurring process of enhancing the OH&S management system in order to achieve improvements in overall OH&S performance consistent with the organisation's OH&S policy Note1: The process need not take place in all areas of activity simultaneously Note 2: Adapted from ISO 14001:2004, 3.2.
Corrective Action	Identified actions or plan of actions to eliminate the cause of a detected nonconformity or other undesirable situation. Note 1: There can be more than one cause for nonconformity Note 2: Corrective action is taken to prevent recurrence whereas Preventative action is taken to prevent occurrence.
CR	Construction Regulations – 1010 of 18 July 2003 - OH&S Act 85 of 1993 Republic of South Africa.
Danger	Anything, which may or can cause injury or damage to persons or property.
Dept of Labour	Government department of a particular country who assign inspectors to enforce OH&S laws and regulations.
Designer	A person who designs, checks and approves designs and includes any person who having overall responsibility for a design.
DMR	Driven Machinery Regulations – 295 of 25 February 1988 – OH&S Act 85 Of 1993, Republic of South Africa
Document	Information and its supporting medium. Note: The medium can be paper, magnetic, electronic or optical computer disk, photography or master sample, or a combination thereof
EIA	Environmental Impact Assessment – environmental assessment conducted by a registered external independent company.
EIR	Electrical Installation Regulations – 2920 of October 1992 – OH&S Act 85 of 1993, Republic of South Africa.
Employee	Means any person who is employed by or works for an employer and who receives or is entitled to receive remuneration.
Employer	Any person who employs or provides work for any person and who remunerates that person, but excludes a labour broker
EMR	Electrical Machinery Regulations – 1593 of 12 August 1988 – OH&S Act 85/1993, Republic of South Africa
ERW	Environmental Regulations for Workplaces – 2281 of 16 October 1987 – OH&S Act 85 of 1993 – Republic of South Africa.
EXCO	Executive Directors Committee (WBHO Construction)
Fall protection plan	A documented plan relating to all risks associated with working in elevated positions and includes preventative measures and action plans.
FEMA	Federated Employers Mutual Association – the insurance association to whom WBHO are registered in terms of injuries and diseases as per the COID Act.
FR	Facilities Regulations – 2362 of 5 October 1990 – OH&S Act 85 of 1993 Republic of South Africa.
GAR	General Administrative Regulations – 929 of 25 June 2003 – OH&S Act 85 of 1993, Republic of South Africa.
GMR	General Machinery Regulations – 929 of 25 June 2003 – OH&S Act 85 of 1993, Republic of South Africa.
GSR	General Administrative Regulations – 1521 of 5 August 1998 – OH&S Act 85/1993, Republic of South Africa.
Hazard	A source, exposure to danger, situation, or act with a potential for harm in terms of human injury or ill health, or a combination of these
Hazard Identification	Process of recognizing that a hazard exists and defining its characteristics.
H&S management standards	Documented set of procedures drafted to state clear objectives and actions associated with levels of compliance with legal and/or associated specifications.
HCSR	Hazardous Chemical Substances Regulations – 1179 of 25 August 1995 – OH&S Act 85 of 1993 - Republic of South Africa.
HCS	Hazardous Chemical Substances – refers to any toxic, harmful, corrosive, irritant or asphyxiate substance, or mixture of such substances
HIRA	Hazard Identification and Risk Assessment
HIRA Register	A register to identify all tasks, equipment, material and processes which WBHO Construction is involved with and to evaluate the risks involved
HTI	Hazardous Task Identification – WBHO procedure in grouping all associated tasks and then evaluating them according to a risk rating.
Ill Health	Identifiable, adverse physical or mental condition arising from and/or made worse by a work activity and/or work-related situation.
Incident	Is an work related, unplanned, undesired event that will result in or could have resulted in an injury or ill health (regardless of severity) or fatality that occurred, or could have occurred. Note 1: An accident is an incident which has given rise to injury, ill health or fatality. Note 2: An incident where no injury, ill health, or fatality occurs may also be referred to as a "Near miss", "near hit", "close call" or "dangerous occurrence". Note 3: An emergency situation is a particular type of incident
Interested Party	Person or group, inside or outside the workplace, concerned with or affected by the OH&S performance of an organisation.
Intoxication	Refers to a person who is either under the influence of alcohol, cannabis or other illegal drug.
JV	Joint Venture – the term used when two or more principal contractors combine resources to form a single entity (company).
LDV	Light Delivery Vehicle – commonly known as a "bakkie" utilized for the transportation of material equipment or employees.
Lost time injury	Refers to an injury where an employee has lost a full shift (1 days work) as a result of the injury. Injured is booked off work from either a doctor or hospital.
L T I F.R	Lost Time Injury Frequency Rate – a system in rating a specific injury rate. No of lost time injuries X 1000000 divided by men-hours worked.
JHA(refer key objectives)	
Mandatory	Includes an agent, a contractor, or a subcontractor for work, but without derogating from his status in his own right as an

	employer or a user.
MANCO	Managing Directors Committees (WBHO Construction)
Medical Injury	Refers to an injury where an employee sought medical attention and returned to work after the incident, without losing a full shift (1 days work).
Method Statement	Documented instructions identifying a systematic procedure of performing an activity which followed will lessen the likelihood of injury, illness and damage to property; may include work instructions
MOH&S Act	Mine Health & Safety Act – 29 of 1996, Republic of South Africa.
MOH&SS	Material Safety Data OH&Set – a specific form containing all relevant information pertaining to a specific chemical or substance.
NIHLR	Noise Induced Hearing Loss Regulations – 307 of 7 March 2003 – OH&S Act 85 of 1993 – Republic of South Africa
Nonconformity	Non-fulfilment of a requirement. Note: A nonconformity can be any deviation from • Relevant work standards, practices, procedures, legal requirements, etc. • OH&S management system requirements.
Objectives	Goals, in terms of OH&S performance, that WBHO Construction sets itself to achieve.
OHSAS	Occupational Health and Safety Assessment Series
OH&S Act	Occupational Health & Safety Act – 85 of 1993, Republic of South Africa.
OH&S Objectives	OH&S goal, in terms of OH&S performance, that an organisation set itself to achieve. Note 1: Objectives should be quantified wherever practicable. Note 3: 4.3.3 requires that OH&S objectives are consistent with the OH&S policy.
Occupational Health & Safety (OH&S)	Conditions and factors that affect, or could affect the Occupational Health and Safety of employees or other workers (including temporary workers and contract personnel), visitors, or any other person in the workplace. Note: Organisation can be subjected to legal requirements for the Occupational Health and Safety of persons beyond the immediate workplace, or who are exposed to the workplace activities.
OH&S Management System	Part of an organisation's management system used to develop and implement its OH&S policy and manage its OH&S risks. Note 1: A management system is a set of interrelated elements used to establish policy and objectives and to achieve those objectives. Note 2: A management system includes organisational structure, planning activities (including, for example, risk assessment and the setting of objectives), responsibilities, practices, procedures, processes and resources. Note 3: Adapted from ISO 14001: 2004, 3.8
OH&S performance	Measurable results of an organisation's management of its OH&S risks. Note 1: OH&S performance measurement includes measuring the effectiveness of the organisation's controls. Note 2: In the context of OH&S management systems, results can also be measured against the organisation's OH&S policy, OH&S objectives, and other OH&S performance requirements.
OH&S Plan	A documented plan that addresses hazard identified and includes safe work procedures to mitigate, reduce or control the identified hazards.
OH&S policy	Overall intention and direction of an organisation related to its OH&S performance as formally expressed by top management. Note 1: The OH&S policy provides a framework for action and for the setting of OH&S objectives Note 2: Adapted from ISO 14001:2004, 3.11.
OH&S Rep	Health & Safety Representative – a person elected by the workforce and designated in writing to represent them on OH&S related issues.
OH&S Specifications	Documented specifications of all Occupational Health and Safety requirements pertaining to the associated works on a construction site supplied by a potential client.
OHSAS 18001:2007	The Occupational OH&S Assessment Series specification giving requirements for an occupational OH&S (OH&S) management system, to enable an organisation to control its OH&S risks and improve its performance.
Organisation	Company, corporation, firm, enterprise, authority or institution, or part or combined thereof, whether incorporated or not, public or private, that has its own functions and administration Note: for organisations with more than one operating unit, a single operating unit may be defined as an organisation.
Plant	Refers to vehicles, LDV's, earthmoving equipment, concrete equipment, construction vehicles and small mobile equipment.
Policy	The OH&S policy for WBHO Construction that clearly states overall OH&S objectives and a commitment to improving OH&S performance.
PPE	Personal Protective Equipment (PPE): Equipment that is provided to employees to assist them to control the risks attached to the task that they are required to carry out.
PPE Assessment	An evaluation of the workplace and the tasks that have to be carried out in order to establish whether the use of PPE would reduce and control the risk attached
Principal Contractor	Refers to the main contractor who is directly appointed by the Client to be in overall control and management of a project.
Preventive Action	Action to eliminate the cause of a potential nonconformity, or other undesirable potential situation. Note 1: There can be more than one cause for a potential nonconformity. Note 2: Preventative action is taken to prevent occurrence whereas corrective action is taken to prevent recurrence
Procedure	Specific way to carry out an activity or a process. Note: Procedures can be documented or not.
Record	Document stating results achieved or providing evidence of activities performed
Reg	Regulations – refers to specific Regulations in terms of an applicable ACT.
Residual Risk	Exposure to loss remaining after other known risks have been countered, factored in, or eliminated.
Risk	Combination of the likelihood of an occurrence of a hazardous event or exposure(s) and the severity of injury or ill health

	that can be caused by the event or exposure(s)
Risk Assessment	Process of evaluating the risk(s) arising from a hazard(s), taking into account the adequacy of any existing controls, and deciding whether or not the risk(s) is acceptable/tolerable.
SABS	South African Bureau of Standards – Standard generating body which prescribes certain standards and code of practice for industry.
Safe	Free from any hazards
Sect	Section – refers to a specific Section stipulated and contained in an applicable ACT.
SWP's Safe Work Procedures	SWP's are operating procedures to ensure the employees are trained in the safe working and shall be conducted where there is no formal training which can be conducted and where tasks are critical or high when evaluated.
Tolerable Risk	Risk that has been reduced to a level that can be endured by WBHO Construction having regard to its legal obligation and its own OH&S Policy.
TRA	Task Risk Assessment – WBHO procedure in highlighting the risks associated with a specific task and the preventative measures implemented to reduce risks.
VUPR	Vessels Under Pressure Regulations – 1581 of 4 October 1996 – OH&S Act 85 of 1993 – Republic of South Africa
WBHO	WBHO Construction (Pty) Ltd Represents the various divisions and includes cross border divisions.
WCL 1 / 2 / 22	Standard forms used in reporting injuries in terms of the COID Act. These forms are submitted to FEMA.
Workplace	Any physical location in which work related activities are performed under the control of the organisation. Note: When giving consideration to what constitutes a workplace, the organisation should take into account the OH&S effects on personnel who are, for example, travelling or in transit (e.g. driving, flying, on boats or trains), working at the premises of a client or customer, or working at home.

4. OH&S MANAGEMENT SYSTEM REQUIREMENTS

4.1 General Requirements

4.1.1 OH&S Management System

This OH&S Management System is predicated by the rule of law The Duty of Care, the basis of all occupational health and safety law and management, drives the requirements of the OH&S management systems.

The system is further driven by the Company Policy and Standards applicable to the integrated OH&S management system elements that make up the complete OH&S management system. The reference documents available within the system include Manuals, Procedures, Guidelines and Forms.

The OH&S system is managed by the respective Contractor within the various contracts and monitored by the Project Management team through the OH&S team on site. A computerised project management database has been developed to assist with the collection and recording of all relevant data and information. This database and the resultant documents have been integrated into the OH&S management systems. The collection of information is both paper based and computer generated. Either process may be utilised by the contractors to provide information to the project management team.

4.1.2 Initial Review.

The OH&S Management System was audited by a Third Party company and the following were taken into account

e) Legal and Other Requirements
f) OH&S Assessments
g) An examination of existing Systems, Practices, Processes and Procedures
h) Evaluations of OH&S improvement initiatives
i) An evaluation of feedback from the investigation of previous incidents, work related Ill Health, Accidents and Emergencies
j) Relevant Management Systems and available Resources

Corrective and Preventative Actions were implemented where findings were noted.

4.1.3 Scope of OH&S Management System

- The Scope of the OH&S Management System will be relevant to the following business activities of WBHO Construction:
  - Building Construction – Retail Centers, Hotel and Resorts, Leisure and recreation, Office and commercial buildings, Pharmaceutical facilities, Hospitals and Clinics, Wineries, Restorations and Alterations, Education and research, Residential developments and Miscellaneous building.
  - Civil Engineering - Water & Effluent treatment, reservoirs, water control and marine works, mining, silos and towers, power and distribution stations, heavy industrial plants, industrial parks, and other sundry civil works.
  - Roads & Earthworks - Bridges, freeways, road construction and rehabilitation, railways, township infrastructures, pipelines, dams, mining and tunneling, various other earthworks.
  - Central and H/O functions – Management and service assistance to the projects in the forms of administration, plant and machinery maintenance, plant and machinery purchase, refurbishment of equipment, logistics and office buildings,

4.2 OH&S Policy

a) The Policy is effectively introduced at Head Office through conference and on site by the respective Site Safety Officers and OH&S Representatives
b) A signed copy of the OH&S Policy will be displayed where it is visible to all employees and is available on the Intrane
c) Employees will be informed of the SHE Policy during Induction Training and other Awareness sessions. All employees are to be familiar with the contents of the Policy and understand what it means. The Policy will also be made available to Customers, Suppliers and Interested Parties on request. Induction Training Sessions are used to inform newly appointed employees about management's intention regarding the Safety Risk Management Process.
d) Any forthcoming revisions will be communicated through the channels identified by the Document Control Procedure and by the Site Safety Officers and OH&S Representatives on site.
e) The CEO will review the Policy on an annual basis during the Group OH&S Manager's Management Review Presentation to EXCO
f) The Policy will be based on the company's risks and should include;

- Objectives and Targets
- Continuous Improvement and Performance
- Legal Requirements
- Commitment to prevent Injury and Ill Health
- Commitment to comply with applicable legal requirements and with other requirements to which the organisation subscribes that relate to its OH&S Hazards

4.3 Planning

4.3.1 Hazard Identification, Risk Assessment and Determining Controls

Hazards will continually be identified and the level of risks assessed that are associated with worker exposure to the hazards and control measures will be implemented to eliminate or minimise the level of risks identified to a tolerable level of exposure

Risk Assessment Team
The Risk Assessment Teams are responsible for conducting on-site assessments for each area of work to identify potential Hazards and the associated Risks which may require the implementation of Control Measures to eliminate or reduce the level of exposure to employees.

The teams should consist of, but not limited to:

- Site Safety Officers (Facilitator)
- Foremen
- Artisans
- Occupational Health and Safety Representatives
- Supervisors
- Operators

Where WBHO Construction is the Principle Contractor, the Subcontractors are responsible for assembling their own Risk Assessment Teams and conducting the Hazard Identification and Risk Assessments for their areas of operation. This is done in accordance with the Site Plan and layout distributed by WBHO Construction identifying high risk and other risk areas.

WBHO Construction site staff will assist where necessary and where hazards and risks are considered high, the Site Safety Officer will attend as will the Area Safety Manager and Contracts Manager to sign off on the assessment.

Hazard Identification should be conducted by a person(s) with competence in relevant Hazard Identification Methodologies and Techniques and appropriate knowledge of the work activity

Risk Assessment should be conducted by a person(s) with competence in relevant Risk Assessment Methodologies and Techniques and appropriate knowledge of the work activity.

The Generic WBHO Construction Risk Assessments will be used as a Guideline/Baseline by the WBHO Construction Site Safety Officer to evaluate the Risk Assessments issued by the Subcontractors

Different types of Risk Assessments

Baseline / HIRA is an overall register of potential Hazards and Risks associated with common tasks, activities, processes and equipment used. This document is generic and needs to be made site specific for each project by the Risk assessment team on site.

Issue Based Risk Assessments are In depth Risks Assessment of the identified Processes, Tasks, Activities and Equipment used and is aimed at ensuring each risk is properly eliminated or mitigated

Continuous Risk Assessments are Checklists, Registers, DSTI's, Toolbox Talks, Awareness Campaigns, Inspections, Audits, Accident / Incident / NCR Investigations to ensure all risks are monitored and continuously evaluated for effectiveness.

When conducting Hazard Identification and Risk Assessment the following shall be taken into account:

a) Routine and Non-routine Activities
b) Activities of all persons having access to the workplace (including Contractors and Visitors)
c) Human Behaviour, Capabilities and other Human Factors
d) Identified hazards originating outside the workplace capable of adversely affecting the Health and Safety of persons under the control of the organisation within the workplace.
e) Hazards created in the vicinity of the workplace by work-related activities under the control of the organisation NOTE 1: It may be more appropriate for such hazards to be assessed as an environmental aspect.
f) Infrastructure, Equipment and Materials at the Workplace, whether provided by the organisation or others
g) Changes or proposed changes in the organisation, its activities, or materials;
h) Modifications to the OH&S Management System, including Temporary Changes, and their Impacts on Operations, Processes, and Activities;
i) Any applicable Legal Obligations relating to Risk Assessment and implementation of necessary controls
j) The design of Wok Areas, Processes, Installations, Machinery / Equipment, Operating Procedures and Work Organisation, including their adaptation to Human Capabilities

WBHO Construction's Methodology for Hazard Identification and Risk Assessment shall:

a) Be defined with respect to the Scope, Nature and Timing to ensure it is proactive rather than reactive, and
b) Provide for the Identification, Prioritization and Documentation of Risks, and the application of controls, as appropriate

Hazard Identification

During the Hazards Identification Process aim should be placed on determining proactively all sources, situations or Acts (or a combination of these), arising from WBHO Construction's activities, with a potential for harm in terms of human injury or ill health, example may include.

a) Sources (e.g. moving machinery, radiation or energy sources),
b) Situations (e.g. working at heights), or
c) Acts (e.g. manual lifting)
d) OH&S legal and other requirements, e.g. those that prescribe how hazards should be identified
e) OH&S Policy
f) Monitoring data
g) Occupational exposure and health assessments\
h) Records of incidents
i) Reports from previous audits, assessments or reviews
j) Input from employees and other interested parties
k) Information from other management systems (e.g. for quality management or environmental management)
l) Information from employee OH&S consultations
m) Process review and improvement activities in the workplace
n) Information on best practice and/or typical hazards in similar organisations
o) Reports of incidents that have occurred in similar organisations
p) Information on the facilities, processes and activities, processes and activities of the organisation, including the following:
   - Workplace design, traffic plans (e.g. pedestrian walkways, vehicle routing), site plan(s)
   - Process flowcharts and operations manuals

- Inventories of hazardous materials (raw materials, chemicals, wastes, products, sub-products), equipment specifications
- Product specifications, material safety data sheets, toxicology and other OH&S data.

Consideration should be given to the different types of hazards in the workplace, including physical, chemical, biological and psychosocial when identifying hazards

All Routine and Non-Routine Activities (e.g. Periodic, Occasional, or Emergency) and situations of all persons having access to the workplace (e.g. Cleaners, Customers, the Public, Visitors, Service Contractors, Delivery Personnel, as well as Employees) and processes under the control of WBHO Construction will be considered in the Hazard Identification Processes. Where working on Projects and Clients request to use their System, their system shall take preference if the system meets all the requirements.

Non-Routine activities and situations that should be considered during the Hazard Identification process will include,

- Facilities or equipment cleaning
- Temporary process modifications
- Non-scheduled maintenance
- Plant or equipment start-ups/shut-downs
- Off-site visits (e.g. field trips, customer supplier visits, prospecting, excursions)
- Refurbishment
- Extreme weather conditions
- Utility (e.g. power, water, gas, etc.) disruptions
- Temporary arrangements
- Emergency situations

The following should be human factors and interactions, have to be taken into account when evaluating the hazards and risks of processes, equipment and work environments:

a) Human factors such as capabilities, behaviours and limitations, competence, training and experience
b) Human behaviour (temperament, habits, attitude)
c) The nature of the job (workplace layout, operator information, work load, physical work, work patterns),
d) The environment (heat, lighting, noise, air quality)
e) Physiological capabilities (cognition, attention)
f) Physiological capabilities (biomechanical, anthropometrics/physical variation of people)

For the Hazard Identification to be effective the organisation will use an approach that includes information from a variety of sources, especially inputs from people who have knowledge of its processes, tasks or systems, e.g

- Observations of behaviour and work practices and analyses of the underlying causes of unsafe behaviour
- Benchmarking
- Interviews and surveys
- Safety tours and inspections
- Incident reviews and subsequent analyses
- Monitoring and assessment of hazardous exposures (chemical and physical agents)
- Workflow and process analysis, including their potential for creating unsafe behaviour

Checklists can be used as a reminder of what types of potential hazards to consider and to record the initial hazard identification. Checklists should be specific to the work area, process or equipment being evaluated

RISK ASSESSMENTS

Risk is the combination of the likelihood of an occurrence of a hazardous event or exposure(s) and the severity of injury or ill health that can be caused by the event or exposure(s)

Risk assessment is processes of evaluating the risk(s) arising from a hazard(s), taking into account the adequacy of any existing controls, and deciding whether the risk(s) is acceptable

An acceptable risk is a risk that has been reduced to a level that the organisation is willing to assume with respect to its legal obligation, its OH&S Policy and its OH&S Objectives

Risk Assessment Inputs

Inputs to the risk assessment processes can include, but are not be limited to, information or data on the following:

- Details of location(s) where work is carried out

- The proximity and scope of hazardous interaction between activities in the workplace
- Security arrangements
- The human capabilities, behaviour, competence, training and experience of those who normally and/or occasionally carry out hazardous tasks
- Toxicological data, epidemiological data and other health related information
- The proximity of other personnel (e.g. cleaners, visitors, contractors, the public) who might be affected by hazardous work
- Details of any work instructions, systems of work and/or permit-to-work procedures, prepared for hazardous tasks
- Manufacturers' or suppliers' instructions for operation and maintenance of equipment and facilities
- The availability and use of control measures (e.g. for ventilation, guarding, personal protective equipment (PPE), etc.
- Abnormal conditions (e.g. the potential interruption of utility services such as electricity and water, or other process failures)
- Environmental conditions affecting the workplace
- The potential for failure of plant and machinery components and safety devices or for their degradation from exposure to the elements or process materials
- Details of access to and adequacy/condition of emergency procedures, emergency escape plans, emergency equipment, emergency escape routes (including signage), emergency communication facilities, and external emergency support, etc.
- Monitoring data related to incidents associated with specific work activities
- The findings of any existing assessments relating to hazardous work activity
- Details of previous unsafe acts either by the individuals performing the activity or by others (e.g. adjacent personnel, visitors, contractors, etc.)
- The potential for a failure to induce associated failures or disabling of control measures
- The accuracy and reliability of the data available for the risk assessment
- Any legal and other requirements which prescribe how the risk assessment has to be performed or what constitutes and acceptable risk, e.g. sampling methods to determine exposure, use of specific risk assessment methods or permissible exposure levels

Where WBHO Construction is involved in a joint venture or act as the sole contractors on a smaller site, the WBHO Construction risk assessment team will conduct the hazard identification and risk assessments using the generic formats provided.

Other considerations:

- Customise generic assessments to be appropriate to a particular situation
- When using descriptive categories for assessing severity or likelihood of harm, it should be clearly defined, e.g. "likely" and "unlike" (different individuals interpret them consistently)
- Risks to sensitive populations (e.g. pregnant workers) and
- Vulnerable groups (e.g. inexperienced workers)
- Any particular susceptibilities of the individuals involved in performing particular tasks (e.g. the ability of an individual who is colour-blind to read instructions)
- The number of persons that might be exposed to a particular hazard
- Risk assessments to evaluate the harm from exposure to chemical, biological and physical agents might require measurement of exposure concentrations with appropriate instruments and sampling methods (comparison of these concentrations should be made to applicable occupational exposure limits or standards)
- Ensure that the risk assessment considers both the short-term and long-term consequences of exposure and the additive effects of multiple agents and exposures
- If required; use samples to cover a variety of situations and locations
- Care should be taken to ensure that the samples used are sufficient and adequately represent all the situations and locations being assessed.

Assessment Matrix

Common Occurrance	Multiple Fatalities OR PERMANENT DISABILITIES		1<10> Days	Major	Major					
Has Happened before	Fatal / Permanent Disability		6<10> Hours	Serious	Serious					
Could Occur	Moderate / Serious Injury		3<6> Hours	Medium	Medium	3		3	3	3
Not likely	Lost Time Injury		1<3> Hour	Minor	Minor		2	2		
Practically Impossible	Minor Injury – No Lost Time		< 1 Hour	None	None					

Hierarchy of risks

- **PROBABILITY OF OCCURENCE**

Assess the hazard on a scale from 1 to 5 the probability of contact with the hazard. Consider the worst case scenario; if direct contact made with the substance or machine, what would be the result?

Using the key provided enter the numeral in the space provided.

PROBABILITY OF OCCURENCE	
Practically Impossible	
Not Likely to Occur	
Could Occur	3
Has Happened Before	
Common Occurrence	

- **(IS) INJURY SEVERITY POTENTIAL**

Assess the hazard on a scale from 1 to 5 the consequences of contact with the hazard. Consider the worst case scenario; if direct contact made with the substance or machine, what would be the result?

Using the key provided enter the numeral in the space provided;

(IS) INJURY SEVERITY POTENTIAL	
MINOR INJURY – NO TIME LOST	
LOST TIME INJURY	2
MODERATE / SERIOUS INJURY	
FATAL / SEIOUS LOST TIME INJURIES / ILLNESS (MORE THAN 14 DAYS)	
MULTIPLE FATALITIES OR PERMANENT DISABILITIES	

- **(DS) DAMAGE / LOSS SEVERITY POTENTIAL**

Assess the hazard on a scale from 1 to 5 the consequences of contact with the hazard. Consider the worst case scenario; if

direct contact made with the substance or machine, what would be the result?

Using the key provided enter the numeral in the space provided:

(DS) DAMAGE / LOSS SEVERITY	
LESS THAN R 15 000	1
R 15 000 TO R 150 000	2
R 150 000 TO R 300 000	3
R 300 000 TO R 1 500 000	4
MORE THAN R 1 500 000	5

- **Duration of Exposure**

Assess the hazard on a scale from 1 to 5 the duration of exposure with the hazard. Consider the worst case scenario, if direct contact made with the substance or machine, what would be the result?

Using the key provided enter the numeral in the space provided,

(DE) DURATION OF EXPOSURE	
<1 hours	1
>1<3 hours	2
>3<6 Hours	3
>6<10 Hours	4
>1<10 Days	5

- **Ergonomics / Environment**

Assess the hazard on a scale from 1 to 5 the ergonomics / environment with the hazard. Consider the worst case scenario; if direct contact made with the substance or machine, what would be the result?

Using the key provided enter the numeral in the space provided;

(E) ERGONOMICS/ENVIRONMENT	
None	1
Minor	2
Medium	3
Serious	4
Major	5

- **Health Risk Potential**

Assess the hazard on a scale from 1 to 5 the ergonomics / environment with the hazard. Consider the worst case scenario; if direct contact made with the substance or machine, what would be the result?

Using the key provided enter the numeral in the space provided,

9. HEALTH RISK POTENTIAL	
None	1
Minor	2
Medium	3
Serious	4
Major	5

- **CONSEQUENCES**

This describes the result of the identified risks if it should occur. All the

(C) CONSEQUENCE	
High Risk	21 – 30
Medium Risk	11 – 20
Low Risk	6 – 10

➢ **Appropriate Controls; Engineering and Administrative**

Note all current control measures in place to determine levels that the assessed hazards are reduced. Only where the control adequately addresses the risk at source, that is to reduce the level of exposure, is it considered to reduce the effect of the hazard. Where the level of control is dependent on human behaviour, maintenance or service levels then the level of the hazard may not reduce.

Examples include;

- Machine guards – may be removed and not replaced
- Permit to work – stipulated conditions may be ignored
- Condition of machine – depends on regular maintenance

Engineering controls
Physical controls should include;

- Visible and audible alarms
- Design considerations
- Fixed and interlocked guards
- Ventilation and lighting systems

Administrative controls include;

- Maintenance schedules
- Operator certification
- Permit and lock out systems
- Codes of practice and design standards
- Safe Work Procedures
- Medical surveillance and employee rotation

Appropriate Personal Protective Equipment (PPE)

Take existing equipment that is available into consideration,

- Suitability of the equipment, assess against equipment standards e g ; SABS, ANSI, BSI
- On the job usage of PPE - Levels of compliance.
- Employee acceptance of existing PPE.

It is the policy of WBHO Construction to provide a place of employment, free from recognized hazards that cause or are likely to cause death or physical harm to employees or the public. PPE shall be specified, appropriate to the hazard, only after engineering practices, administrative practices, and safe work practices have been implemented to control the hazard(s).

The use of PPE to eliminate injuries is an important component of the WBHO Construction Occupational Health and Safety program. PPE includes all clothing and accessories designed to create a barrier against workplace hazards.
It is the responsibility of WBHO Construction to ensure that the correct PPE is available for employees to do their job and that they understand WHY they have to use it and HOW to use it safely.

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➢ **RISK ASSESSMENT REVIEW**

Management will set a schedule for review. Using the total risk rating to identify priorities. Review high-risk levels first and a more regular basis than low ratings. Site Management shall review, approve and implement Site based Risk assessme

➢ **OCCUPATIONAL HEALTH AND SAFETY PLAN**

Risk assessments must be included in specific construction project Occupational Health and Safety plans. The assessments must relate to the specific works encountered on that construction site.

➢ **COMPLETION OF THE RISK ASSESSMENT AND RATING FORM**

Once the potential hazards have been registered, that information is transferred to the Risk Assessment and Rating Form in order to determine the "potential hazard" per activity and identify all possible results/risks related to that activity; e.g.

TASK STEPS	HAZARD IDENTIFIED	RISK ASSOCIATED WITH HAZARD	REMEDIAL HOW IS HAZARD TO BE DEALT WITH
Carry out routine pre-start up check.	Machine not in a safe operational condition	injury and or damage	
Carry out site inspection before starting work.	Site conditions may have changed due to inclement weather	Hazardous to the operation of the equipment	

The detailed "activity" functions as the method statement or documented instruction which identifies a systematic method for performing tasks which if followed will reduce the likelihood of injury, illness and damage to property.
Safe Work Procedures (SWP's) are formed from the method statement and require the participation of the artisans. Safe work procedures are therefore treated as toolbox topics.

- **RISK ASSESSMENT NUMBER**

A consecutive number is allocated for each risk assessment that is formalized by the project OH&S Officer. Control is maintained through the risk assessment register, where the risk assessments are subdivided into earthworks; concrete formwork and reinforcement; mobile equipment; electrical and miscellaneous

The numbering of the risk assessments follows the general numbering procedure for WBHO Construction.
The master form for risk assessments is available.

- **Action Required**

Once the risk has been classified, the associated level of action required can be implemented and controlled

ACTION REQUIRED	
LOW	Supervision, training, certification, method / risk assessments, training, toolbox talks.
MEDIUM	Competent supervision, training certificaton, method/ risk assessments, safe work procedures training, toolbox talks.

The risk rating (risk classification and risk value) and the level of action required accordingly is used to determine the preventive measures needed to be put into place (with reference to the identified PPE) and the controls necessary to eliminate risk where possible or reduce it to a tolerable level.

➢ **Risk Assessment Monitoring**

- The effectiveness of risk assessments shall be monitored with effective communication to the employees after it has been reviewed by the Site Agent, Supervisor and Project OH&S Officer.
- The effective monitoring of the risk assessment shall be done via Planned Task Observations done on new employees, Monotonous work activities, high risk activities (as identified by the Baseline Risk assessment), when accidents / incidents occurred.
- Risk assessments shall be monitored when changes occurred in the supervision, schedules, work processes and information changes. Risk assessments shall then first be reviewed and then the information changes shall be communicated to the employees.
- Risk assessments shall be monitored to ensure the risk assessment remains effective and functional for the tasks and to indicate where specializes or different training requirements are identified as a result from the Planned Task Observation.

➢ **Risk Assessment Review**

- The HIRA document shall be reviewed monthly by the Site H&S Committee in the monthly committee meeting and any changes to the document shall be send to the OH&S Head office for inclusion in the Company profile.
- Risk assessments shall be reviewed monthly by the H&S Committee in the monthly safety committee meeting.
- After an Accident / Incident occurred.
- Risk assessments shall be reviewed when changes occur in the supervision, schedules, work processes and information changes.
- Temporary changes shall be done on in the form of a daily safety task analysis and the information shall be communicated to the employees before the task is conducted.

- Risk assessments shall further be reviewed when there is an indication that the work procedures or current risk assessment is not sufficient to ensure the safety of the employees who is performing the task or persons who is affected by the work activities conducted.
- Reviewed / changed documents shall be forwarded to the OH&S Head Office for an evaluation and inclusion in the Risk Management Programme.

WBHO Construction employs a very proactive approach towards risk assessments by using those from completed projects to complement the existing generic versions. The risk assessments are considered as "live documents" and will be reviewed and analyzed on an annual basis by the OH&S Management team thereafter the "best practice" will be adopted.

Although risk assessments will be formally revised on an annual basis, in the event of a problem being identified or incident/accident occurring the risk assessment can be recalled and reviewed with immediate effect and the relev changes (as discussed above) made should it be deemed necessary.

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When developing operational controls, priority should be given to control options with higher reliability in preventing injury or ill health, consistent with the hierarchy of controls, i.e. this should start with redesign of equipment or processes to eliminate or reduce hazard(s), improved signage/warnings for hazard avoidance, improved administrative procedures and training to reduce the frequency and duration of the exposure of persons to inadequately controlled hazards, and lastly the use of personal protective equipment (PPE) to reduce the severity of injury or exposure.

Determining the need for Control

When determining controls, or considering changes to existing controls, consideration shall be given to reducing the risks according to the following hierarchy;

a) Elimination - modify a design to eliminate the hazard, e.g. introduce mechanical lifting devices to eliminate the manual handling hazard;
b) Substitution – substitute a less hazardous material or reduce the system energy (e.g. lower the force, amperage, pressure, temperature, etc.)
c) Engineering controls – install ventilation systems, machine guarding, interlocks, sound enclosures, etc.;
d) Signage / warnings and / or administrative controls – safety signs, hazardous area marking, photo-luminescent signs, markings for pedestrian walkways, warning sirens/lights, alarms, safety procedures, equipment inspections, access controls, safe systems of working, tagging and work permits, etc.;
e) Personal protective equipment (PPE) – safety glasses, hearing protection, face shields, safety harnesses and lanyards, respirators and gloves.

Temporary controls should not be regarded as a long-term substitute for more effective risk control measures

Documents and records shall be kept of the results identified of the hazards, risk assessments and determined controls up-to-date.

Management of Change

For the management of change, WBHO Construction shall identify the OH&S hazards and OH&S risks associated with changes in the organisation, the OH&S management system, or its activities, prior to the introduction of such changes,

Changes that can affect or have an impact on WBHO's OH&S hazards and risk should be managed. This includes changes to the structure, personnel, management system, processes, activities, use of materials, etc. Such changes should be evaluated through hazard identification and risk assessment prior to their introduction.

Hazards and potential risks associated with new processes or operations should be considered at the design stage as well as changes in the organisation, existing operations, products, services or suppliers. The following are examples of conditions that should initiate a management of change process.

- New or modified technology (including software), equipment, facilities, or work environment
- New or revised procedures, work practices, designs, specifications or standards
- Different types or grades of raw materials
- Significant changes to the site's organisational structure and staffing, including the use of contractors
- Modifications of health and safety devices and equipment or controls

Consider the following questions to ensure that any new or changed risks are acceptable:

- Have new hazards been created?
- What are the risks associated with the new hazards?
- Have the risks from other hazards changed?
- Could the changes adversely affect existing risk controls?
- Have the most appropriate controls been chosen, bearing in mind usability, acceptability and both the immediate and long-term costs?

Recording and documenting the results

Documents and records shall be kept of the results identified of the hazards, risk assessments and determined controls up-to-date

The following types of information should be recorded:

- Identification of hazards
- Determination of the risks associated with the identified hazards
- Indication of the levels of the risks related to the hazards
- Description of, or reference to, the measures to be taken to control the risks
- Determination of the competency requirements for implementing the controls

When existing or intended controls are used in determining OH&S risks, these measures should be clearly documented so that the basis of the assessment will be clear when it is reviewed at a later date.

The description of measures to monitor and control risks can be included within operational control procedures. The determination of competency requirements can be included within training procedures.

Ongoing review

It is a requirement that hazard identification and risk assessment be ongoing. This requires WBHO to consider the timing and frequency of such reviews, as affected by the following types of issues:

- The need to determine whether existing risk controls are effective and adequate,
- The need to respond to new hazards,
- The need to respond to changes that WBHO itself has made
- The need to respond to feedback from monitoring activities, incident investigation, emergency situations or the results of testing of emergency procedures
- Changes in legislation,
- External factors, e.g. emerging occupational health issues,
- Advances in control technologies,
- Changing diversity in the workforce, including contractors,
- Changes proposed by corrective and preventive action.

Periodic reviews can help ensure consistency across risk assessments carried out by different people at different times. Where conditions have changed and/or better risk management technologies have become available, improvements should be made as necessary.

It is not necessary to perform new risk assessments when a review can show that the existing or planned controls remain valid

Internal audits can provide an opportunity to check that hazard identifications, risk assessments and controls, are in place and up-to-date. Internal audits can also be a useful opportunity to check whether the assessment reflects actual workplace conditions and practice.

4.3.2 Legal and Other Requirements

WBHO Construction (Pty) Ltd has access to and evaluates National and Local Legislative Requirements, Regulations, and Other Requirements that are applicable to the Health & Safety Hazards and Risks of its activities. Applicable Legal and Other Requirements such as Standards, Method Statements, Client Requirements, and Environmental Legislation and SANS Standards will be identified for all Normal, Abnormal and Emergency Conditions.

A legal register is available to all employees electronically

The Safety Department compiled a Health and Safety (OHS) Legal Register which contain all Legal and Other Requirements applicable to the activities of the organization. Cognisance will be given to all Safety and Health Legislation including

- National Laws
- Provincial Ordinances
- Local Authority By-laws
- Codes of Practice
- Applicable International Conventions and Protocols

The Legal Register will be formally reviewed and updated by an External Legal Consultant at least once a year or whenever amendments to applicable legislation are known. The External Legal Consultant will be required to keep the organization informed of any amendments to or new applicable Legislative Requirements on a Quarterly Basis or more frequent if required.

The Safety Department will communicate any amendments to or new Legislative Requirements to applicable key role players and further ensure that these requirements are discussed on the Monthly Management Meeting.

A copy of the applicable legislation to WBHO Construction (Pty) Ltd Operations will be placed on the shared drive on the Intranet. Hard copies of pertinent legislation such as the Occupational Health and Safety Act 85 of 1993 and Regulations will be available at all operations.

The OHS Department shall co-ordinate with the HR Department training to ensure a clear understanding of legislative requirements that should be met.

Legislative Requirements identified will be built into the existing Standards, Procedures, Inspection Documentation, etc. Where required, the OHS Department will be responsible for the writing of additional procedures or assign the duty to a "competent" individual.

The OHS Department will focus on Legal Non-compliance as part of the Six-Monthly Internal audits conducted.

All applicable Legal and Other Requirements will be available at the OHS Department, either as hard copy or a software package. Applicable Permits, Exemptions received from the Department of Labour, etc. will be kept at the OHS Department. These permit conditions and exemptions will be communicated to all the applicable key role players

WBHO has committed them to compliance with applicable legal and other OH&S Requirements related to the OH&S Hazards in the Policy, which take any forms, such as:

- Legislation, including statutes, regulations and codes of practice
- Decrees and directives
- Orders issued by regulators
- Permits, licenses or other forms of authorization
- Judgements of courts or administrative tribunals
- Treaties, conventions, protocols

Examples of "other requirements" can include:

- Contractual conditions
- Agreements with employees
- Agreements with interested parties
- Agreements with health authorities
- Non-regulatory guidelines
- Voluntary principles, best practices or codes of practice, charters
- Public commitments of WBHO or its parent organisations
- Corporate/company requirements

Depending on the nature of WBHO's OH&S hazards, operations, equipment, materials, etc., the company seeks out relevant applicable OH&S legislative or other requirements. This can be achieved through the use of knowledge within the organisation and/or through the use of external sources such as:

- Internet
- Libraries
- Trade associations
- Regulators
- Legal services

- OH&S Institutes
- OH&S consultants
- Equipment manufacturers
- Materials suppliers
- Contractors
- Customers

4.3.3 Objectives and Programme(s)

Key Result Area	Objective	Performance Measures and Targets
Legislative	Compliance with relevant regulations, license or permit conditions.	No breaches of regulations license or permit conditions.
Key Performance Indicators - Lag	A workplace that is free of incidents during the contract period Equal or better than RCR 0.50	Zero Fatalities. Zero LTI. Zero Industrial Illness or Injury. Zero legislative citations or non-conformances. All frequency rates are to be calculated at 200,000 man hours, incident reports.
	Contractor OH&S Plan. Open and honest communication between all levels of the organisation.	Meets Project requirements: • Pre-start inspection (PSI) – One per shift/per work group. • Tool Box Meetings – One per week. • OH&S Committee Meetings – One per month.
	All workers aware of Duty of Care and general construction hazards.	All persons inducted
	Safe Workplace.	• Daily workplace OH&S Inspections: • Daily check lists. Preparation of JHA – Re-written weekly.
	Safe Plant and equipment.	Documented daily Pre-start check on all plant Monthly inspection of all ladders, daily visual portable electrical tools and leads, rigging, and monthly full prevention equipment, monthly hand tools
	Compliance with the OH&S Standards.	Scheduled audits complete every 6 months Zero non-conformances occur during site inspection Non-conformances are closed out within 7 days
	All managers and supervision to complete one behavioral observation per scheduled shift.	Zero Non-conformances.
	Formal risk assessments for all tasks.	
	Formal procedure for all risks above medium.	
	Task observation/inspections systems for all critical (above Medium)	
Key Result Area	Objective	Performance Measures and Targets
	Fitness For Work	Random testing of workforce tested for deleterious drugs. Testing for deleterious drugs with Entry and annual medicals. Random Alcohol testing for workforce. 100% Drug and Alcohol testing post accident. For cause at Construction Managers discretion. Zero non-conformance
	100% of workforce inducted prior to work.	Zero non-conformance.
	100% compliance with training requirements.	Zero non-conformance.
	Formal disciplinary action for all breaches of Project Core Rules.	Zero non-conformance.

Objectives that are specific, measurable, achievable, relevant, and timely can enable progress against the attainment of the objectives to be measured more readily by the company

WBHO Construction (PTY) Ltd will set Occupational Health and Safety objectives and Targets, which take into account the legal and other requirements of the OH&S risks

The company will also determine what other issues and factors it needs to consider, such as:

- Technological options, financial, operational and business requirements
- Policy and objectives relevant to the company's business as a whole
- Results of hazards identification, risk assessment and existing controls

- Evaluations of the effectiveness of the OH&S management system (e.g. internal audits)
- Views of workers (e.g. from employee perception or satisfaction surveys)
- Information from employee OH&S consultations, reviews and improvement activities in the workplace (these activities can be either reactive or proactive in nature)
- Analysis of performance against previously established OH&S objectives
- Past records of OH&S nonconformities and incidents
- The results of the management review
- The need for and availability of resources

Examples of types of objectives can include:

- Objectives to increase or reduce something that specify a numerical figure (e.g. to reduce handling incidents by 20%)
- Objectives to introduce controls or eliminate hazards (e.g. for noise reduction in a workshop)
- Objectives to introduce less hazardous materials in specific products
- Objectives to increase worker satisfaction in relation to OH&S (e.g. for a reduction of workplace stress)
- Objectives to reduce exposures to hazardous substances, equipment or processes (e.g. the introduction of access controls, or guarding),
- Objectives to increase awareness or competence in performing work tasks safely
- Objectives that are put in place to meet impending legal requirements prior to their enactment.

4.4 Implementation and Operation

4.4.1 Resources, Roles and Responsibilities, accountabilities and authority

Responsibilities, Accountabilities and Authorities are defined and communicated within WBHO Construction.
Job and Competency Profiles for Management and Staff are utilized to assign Responsibility and Authority.

"Accountability" means ultimate "responsibility", and relates to the person who is held to account if something is not done, does not work, or fails to achieve its objective

The Chief Executive Officer (CEO) of WBHO Construction is ultimately responsible to ensure compliance with legislation. In order to achieve this, the CEO is delegated with the authority and assigned persons to assist with the implementation and management of health and safety legislation. Clear lines of responsibility are determined.

Top Management will demonstrate its commitment by:

- Ensuring the availability of resources essential to establish, implement, maintain and improve the OH&S management system
- Defining roles, allocating responsibilities and accountabilities, and delegating authorities, to facilitate effective OH&S management, roles, responsibilities, accountabilities, and authorities shall be documented and communicated.

The Group Safety Director has been appointed the responsibility for OH&S, irrespective of other responsibilities, and with defined roles and authorities for:

- Ensuring that the OH&S management system is established, implemented and maintained in accordance with the OHSAS 18001:2007
- Ensuring that reports on the performance of the OH&S management system are presented to top management for review and used as a basis for improvement of the OH&S management system

As legislation forms only part of OHSAS, delegated authority also applies to the establishment, implementation and maintenance of a health and safety system in line with OHSAS 18001:2007.

Only Competent persons as defined in the OHS Act 85 of 1993 and the Regulations will carry Legal Appointments within their respective fields of expertise. Certificates and or CV's shall be attached to all appointment documents and kept in the site OHS files.

The documented OH&S Management System and other methods such as Memo's, E-mails, Appointment Letters, Notices and Verbal Instructions relating to Responsibility and Authority are also utilized to communicate Responsibility and Authority outside the normal day to day scope of work.

The company organizational structure outlines the levels of authority and responsibilities. Mandatory Legal Appointments relating to the OHS Act are in writing and updated when changes occur. Responsibility Matrix for Occupational Health and Safety are defined.

WBHO Construction employs highly skilled Management and Operational Staff that are innovative and result driven.

Employees are deemed competent on the basis of appropriate training skills and experience.

4.4.2 Competence, training and awareness

Competence:

When determining the competence required for a task, the following factors will be considered:

- Roles and responsibilities in the workplace (including the nature of the tasks to be performed, and their associated OH&S risks)
- The complexity and requirements of operating procedures and instructions
- The results from incident investigations
- Legal and other requirements
- Individual capability (e.g. literacy, language skills, etc.)

The company ensures that all personnel, including Top Management, are competent prior to permitting them to perform tasks that can impact on OH&S. Differences between the competence needed to perform an activity and that possessed by the individual required to perform the activity are determined an assessed by the HR department or Safety Department. These differences should be addressed through training or other actions, e.g. Additional Education and Skills Development, etc, taking into account the existing capabilities of the individual.

Competency requirements should be considered prior to recruiting new personnel, and/or the reassignment of those already working under the control of the organisation.

Records used by the company for ensuring that personnel are competent should be maintained. Plan Task Observation Records (PTO's) could be utilized to record results of competency testing and future planning for training and verification of effectiveness of the training.

Training

Skill Matrix and Training Matrixes are utilized for identification and status of basic competencies; in addition, the identified training needs will be authorized by the relevant Manager prior to planning and execution of training. The planning and co-ordination of the training are done by the Human Capital Department or Safety Department.

Scheduled training will be monitored and when training cannot take place as planned it should be re-scheduled and training records amended.

Internal and External Training are evaluated for effectiveness by several ways: e.g. the monitoring of performance against Key Performance Indicators; Written or Oral Examination, Practical Demonstration or Observation of Behavioral Changes over time.

Certificates and/or results of training for External Training provide evidence of effective training. All training records should be maintained.

Awareness

To ensure employees work or act safely, the company should make persons working under its control sufficiently knowledgeable of the following:

- emergency procedures,
- the consequences of employees' actions and behavior in relation to OH&S risks,
- the benefits of improved OH&S performance
- potential consequences of departing from procedures,
- the need to conform to OH&S policies and procedures,
- Any other aspects that might impact on OH&S

Attendance registers will be maintained. Awareness training will be provided for contractors, temporary workers and visitors etc. according to the OH&S risks to which they are exposed.

4.4.3 Communication, participation and consultation

Appropriate communication processes are established within WBHO Construction to ensure that communication takes place regarding the effectiveness of the H&S.

Procedures have been developed for communication with interested parties. Other external communication will be directed

through Top Management in conjunction with the Sales and Marketing Department.

Internal communication

It is important to effectively communicate information about OH&S risks and the OH&S management system at various levels and between various functions of the organisation.

This should include information:

- Relating to management's commitment to the OH&S management system (e.g. programmes undertaken and resources committed to improving OH&S performance).
- Concerning the identification of hazards and risks (e.g. information on process flows, materials in use, equipment specifications and observation of work practices)\
- About OH&S objectives and other continual improvement activities
- Relating to incident investigation (e.g. the type of incidents that are taking place, factors that can contribute to the occurrence of incidents, results of incident investigations),
- Relating to progress in eliminating OH&S hazards and risks (e.g. status reports showing progress of projects that have been completed or are underway),
- Relating to changes that can impact on the OH&S management system.

Communication processes internal or external could be any of the following.

Internal & External communication:

- The OH&S Management System
- Meetings – formal and informal (e.g. Toolbox Talks, Safety meetings, Review meetings, DSTI's, etc.)
- E-mails
- Notice boards
- Telephones
- Verbal
- Visual displays
- Newsletters and posters
- Training material
- Memo's
- Electronic med a
- Website
- Signage
- Intranet
- Brochures
- News letters
- Drawings
- Risk Assessments
- Hand signals, flag signals or torches for spotters / flagmen
- Two way radios
- Whistle (Banks men / slingers – when a load has to be slewed in a work area)
- Inductions
- Site instructions
- Instruction notices
- Facsimile
- Suggestion boxes/schemes

- Above processes are utilized to communicate, as a minimum, the performance of the effectiveness of the Hai Risks, Aspects, Impacts, Objectives and Policy. Complaints recorded as defined

Communication with contractors and other visitors:

Contractors will sign a 37.2 Agreement with the company. In this agreement all OH&S requirements, as needed are clearly identified.

Any contractor employee who is found not adhering to the WBHO OHS procedures, Contractor OHS Plan or OHS Act 85 of 1993 or who is observed doing unsafe acts or contributing to creating unsafe conditions will be issued with a Non Conformance Report and the relevant Contracting Firm will then be fined accordingly.

Any visitors (including delivery people, customers, members of the public, service providers, etc.) will be inducted before

they enter to the construction site area. The induction will include, e.g. the evacuation procedures, responses to alarms, traffic controls, access controls, escort requirements, any PPE to be worn (e.g. safety shoes or glasses). Visitors will also be warned either by signs, security barriers as well as verbal or written communication.

Communication with external interested parties:

The Safety department will receive documentation from external interested parties and they will respond to the relevant communication. All relevant OH&S documentation related to the hazards and policy, legal and other requirements are placed on the shared drive on the Intranet. All appropriate information will be communicated in a consistent manner. All documentation on the Intranet will be the latest issue.

Worker participation:

Workers will be informed about the arrangements that have been made for their participation and the individual who represents them on OH&S matters. The OH&S Representatives have defined roles.

Involvement of workers could include,

- Consultation in the selection of appropriate controls, including discussion of the benefits or adverse outcomes of alternative options for controlling specific hazards or preventing unsafe behavior.
- Involvement in recommending improvements to OH&S performance
- Consultation concerning changes that affect OH&S, particularly before the introduction of new or unfamiliar hazards, e.g.:
  - The introduction of new or modified equipment
  - The construction, modification or change of use of buildings and facilities
  - The use of new chemicals or materials
  - Reorganization, new processes, procedures or work patterns.

When developing procedure(s) for worker participation, the company considers potential incentives and barriers to participation (e.g. language and literacy issues, the fear of reprisal), confidentiality and privacy issues

Note 1: Recommendation: The employer should make arrangements for workers and their safety and health representatives to have the time and resources to participate actively in the processes of organizing, planning and implementation, evaluation and action for improvement of the OSH management system.

Note 2: "Workers" can include employees, voluntary workers, temporary workers, contracted personnel.

Consultation with contractors and external interested parties

In considering the need for consultation with contractors on changes that can affect their OH&S, the organisation will take account of the following:

- New or unfamiliar hazards (including those that can be introduced by the contractor)
- Reorganization
- New or amended controls
- Changes in materials, equipment, exposures, etc.
- Changes in emergency arrangements
- Changes in legal or other requirements

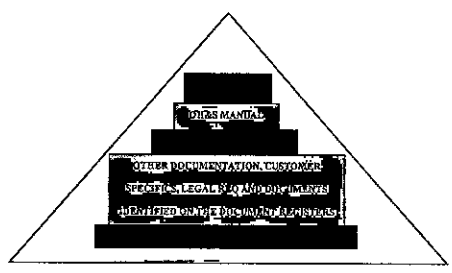
For consultation with external parties, the company will give consideration to factors such as:

- Changes in emergency arrangements
- Hazards that can impact neighbours, or hazards from neighbours,
- Changes in legal or other requirements

4.4 Documentation

The documentation contained in the OH&S Management System has been established by WBHO and includes;

a) Documented statements of an OH&S Policy and Objectives
b) An OH&S Management System manual, based on a continual improvement system.
c) Documented procedures.
d) Documents needed by WBHO to ensure the effective planning, operation and control of our processes
e) Records



Approval of documents:

Documentation are categorised in 5 levels. The extent of control varies depending on the levels of authorisation.

The CEO approves the OH&S Policy and documents specified as his responsibility on the Responsibility Matrix.

The Group Safety Director/Management Representative will ensure that when changes to the OH&S Management System are required it will be reviewed, updated when necessary and re-approved prior to distribution.

Review, update and re-approval of documents

Documents should be reviewed from time to time to ensure that they are still valid and accurate. This can be performed as a dedicated exercise, and could also be necessary.

- As part of a review of risk assessment of processes
- As part of a response to an incident
- As part of the management of change procedure, and
- Following changes in legal and other requirements, processes, installation workplace layout, etc.

Step	Activity	Responsibility	Ref Document
1	Identify documents needed for the OHS Management System	OHS Dept – North	OHS System
2	Draft applicable documents for the OHS Management System	OHS Dept – North	Draft
3	Issue draft documents to responsible persons for review period	All personnel	Draft
4	After review and approval, submit documents back to OH&S Department for final updating	All personnel	Draft
5	After final updating submit documents to responsible persons for approval	OHS Dept – North	Draft
6	Return approved documents to OH&S department	All personnel	Approved Revision
7	Identify whom the approved documents are to be issued to	OHS Dept	Distribution Register
	Document Register to be updated with new information	OH&S Dept	Document Register
8	Issue approved documents – master file kept with Management Rep	OHS Dept	Approved Revision and Document Register
9	Continuallly review suitability of documents (audits, legislation changes)	All personnel	Review Records
10	If a change is identified then inform Management Rep of the change	All personnel	Review Records
11	Change will be reviewed and if valid then approved, issued and implemented	OHS Dept – North	Draft – Approval
12	Details of the new revision to be recorded down in a Amendment Register	OHS Dept – North	Amendment Register
13	New revision to be submitted to responsible persons for further review	All personnel	Approved Revision

14	If required train personnel in new documents or procedures	All personnel	Training Procedure and Training Records
15	Old revision to be removed from existing system and destroyed	All personnel	Obsolete Documents
14	Obsolete documents still required must be labeled accordingly	All personnel	Obsolete Documents

Changes to Documentation

The Safety Manual is being posted on intranet and is Password protected. Only the Group Health & Safety Director and the Safety Administrator have access to make any changes electronically to any Safety Documentation

When users other than the Group Health and Safety Director require changes to the Safety Manual, an email or other form of written request must be forwarded to the Group Health and Safety Director. The document with amendments must accompany the request, the Director will review the nature of the change and if satisfy that it remains within the requirements of BS OHSAS 18001:2007, he will amend and forward a draft to the user.

Changes to Operational Documentation e.g. Operating Procedures, Work Instructions, etc. will be approved by the responsible Safety Coordinator or Process Owner. Any changes have to be requested via email or other form of written request and forwarded to the Group Health and Safety Director, who will update the information on the system Operational documentation are reviewed, updated and approved by the relevant Safety Coordinator.

Latest Version

It is the responsibility of the Group Health and Safety Director to ensure that the latest version of applicable documents is available on the intranet. All documents will reflect a revision status and/or effective date Obsolete documents will be controlled by the Group Health and Safety Director and filled in the obsolete folder.

Legible and Readily Identifiable

It is the responsibility of each document owner to ensure that OH&S management system documentation and forms in use are legible and readily identifiable

External Documentation

The owners of any external documentation necessary for the planning and operation of the OH&S management system are responsible for the control of documents of external origin such as Specifications, Standards, Safety Data Sheets and Customer Specific Documents.

a. External Documents will be identified and recorded on an External Document Control Register. The owners will ensure that the latest revisions are available.
b. Distribution of these documents needs to be controlled to ensure that the most current information is used in making decisions impacting OH&S.
c. Obsolete external documents kept for preservation will be identified and filed in an obsolete file for the retention period identified in the Record Retention Matrix. All obsolete documents will be retrieved from work locations by the owner and kept in an obsolete file.
d. It is the responsibility of each owner to ensure that distribution of external document are controlled

Unintended use of obsolete documents

When documents are in draft status the document will be identified as such and must not be utilized as an accepted method or criteria for workmanship.

Users will have access to the intranet and can print controlled copies of documents as required.

The Process Owner shall ensure that documents and forms in use within his area remain legible and readily identifiable

Great care should be taken to ensure that obsolete documentation do not return back into circulation after new revisions have been issued

Electronic Data

The OH&S Management System is being posted on intranet and is Password protected. Only the Group Health and Safety

Director and the Safety Administrator have access to make any changes electronically to any Safety Documentation. Obsolete electronic data will be stored in the obsolete file in the specific directory.

Daily back-ups are made from the server; these tapes are stored in a fire proof safe Users are responsible for data back-ups on their hard drives on a bi-monthly basis.

Retention Period of Records:

Retention of records will be recorded on the Record Retention Matrix. Some documents will be archive after the retention period.

4.4.6 OPERATIONAL CONTROL

4.4 6.1 General

The company shall determine those operations and activities that are associated with the identified hazard(s) where the implementation of controls is necessary to manage the OH&S risk(s). This shall include the management of change

For those operations and activities, the organisation shall implement and maintain.

a. Operational controls, as applicable to the organisation and its activities, the organisation shall integrate those operational controls into its overall OH&S management system
b. Controls related to purchased goods, equipment and services
c. Controls related to contractors and other visitors to the workplace
d. Documented procedures, to cover situations where their absence could lead to deviations from the OH&S policy and the objectives
e Stipulated operating criteria where their absence could lead to deviations from the OH&S policy and objectives

When developing operational controls, priority should be given to control options with higher reliability in preventing injury or ill health, consistent with the hierarchy of controls, i e. this should start with redesign of equipment or processes to eliminate or reduce hazard(s), improved signage/warnings for hazard avoidance, improved administrative procedures and training to reduce the frequency and duration of the exposure of persons to inadequately controlled hazards, and lastly the use of personal protective equipment (PPE) to reduce the severity of injury or exposure.

The operational controls need to be implanted, evaluated on an ongoing basis to verify their effectiveness, and integrated into the overall OH&S management system.

4 4 6.2 Establishing and Implementing

The company should establish operational controls to eliminate, or reduce and control, the OH&S risks that could be introduced into the workplace by employees, contractors, other external personnel, members of the public and/or visitors.

Examples of areas in which OH&S risks typically arise are:

- General control measures
- Performance of hazardous tasks
- Use of hazardous materials
- Facilities and equipment
- Purchase of goods, equipment and services
- Contractors
- Other external personnel or visitors in the workplace

4.4.6.3 Stipulating operating criteria

Stipulate criteria where it is necessary for the prevention of injury or ill health Operating criteria should be specific to the organisation, its operations and activities, and be related to its own OH&S risks, where their absence could lead to deviation from the OH&S policy and objectives.

Examples of operating criteria can include,

- For hazardous tasks
- For hazardous chemicals
- For task involving entry into hazardous areas
- For task involving work performed by contractors

- For OH&S hazards to visitors

4 4.6 4 Maintaining operational control

Operational controls should be reviewed on a periodic basis to evaluate their ongoing suitability and effectiveness, changes that are determined to be necessary should be implemented. In addition, procedures should be in place to determine circumstances where new controls and/or modifications of existing operational controls are needed. Proposed changes to existing operations should be evaluated for OH&S hazards and risks before they are implemented. When there are changes to operational controls, the company should consider whether there are new or modified training needs.

4.4.7 Emergency preparedness and response

The company should assess the potential for emergency situations that impact on OH&S and develop a procedure(s) for an effective response(s). The organisation should periodically test its emergency preparedness and seek to improve the effectiveness of its response activities and procedure(s)

- Identification of potential emergency situations
- Establishing and implementing emergency response procedures
- Emergency response equipment
- Emergency response training
- Periodic testing of emergency procedures
- Reviewing and revising emergency procedures

Consideration should be given to those with special needs, e g. people with limited mobility, vision and hearing. This could include employees, temporary workers, contract employees, visitors, neighbours or other members of the public.

Emergency response procedure should define the roles, responsibilities and authorities of those with emergency response duties, especially those with an assigned duty to provide an immediate response.

Special attention should be paid to equipment and materials used to protect emergency response personnel. Individuals should be informed of the limitations of personal protective devices and trained in their proper use.

Emergency drills can be used to evaluate the organisation's emergency procedures, equipment and training, as well as increase overall awareness of emergency response protocols. Internal parties (e.g. workers) and external parties (e.g. fire department personnel) can be included in the drills to increase awareness and understanding of emergency response procedures.

When changes are made in emergency preparedness and response procedure(s), these changes should be communicated to the personnel and functions that are impacted by the change, their associated training needs should also be evaluated.

4.5 Checking

4.5 1 Performance measurement and monitoring

The organisation shall establish, implement and maintain a procedure (s) to monitor and measure OH&S performance on a regular basis. This procedure(s) shall provide for:

- Both qualitative and quantitative measures, appropriate to the needs of the organisation,
- Monitoring of the extent to which the organisation's OH&S objectives are met
- Monitoring the effectiveness of controls (for health as well as for safety)
- Proactive measures of performance that monitor conformance with the OH&S programme(s), controls and operational criteria
- Reactive measures of performance that monitor ill health, incidents (including accidents, ear-misses, etc.) and other historical evidence of deficient OH&S performance
- Recording of data and results of monitoring and measurement sufficient to facilitate subsequent corrective action and preventive action analysis.

If equipment is required to monitor or measure performance, the organisation shall establish and maintain procedures for the calibration and maintenance of such equipment, as appropriate. Records of calibration and maintenance activities and results shall be retained

Examples of proactive measure include:

- Assessments of compliance with legal and other requirements
- The effective use of the results of workplace safety tours or inspections

- Evaluation of the effectiveness of OH&S training
- Use of OH&S behavior based observations
- Use of perception surveys to evaluate OH&S culture and related employee satisfaction
- The effective use of the results of internal and external audits
- Completion of legally required and other inspections as scheduled
- The extent to which programme(s) have been implemented
- The effectiveness of the employee participation process
- The use of health screening
- Exposure modeling and monitoring
- Benchmarking against good OH&S practices
- Work activity assessments

Examples of reactive measure include:

- Monitoring of ill health
- Occurrences and rates of incidents and ill health
- Lost time incident rates, lost time ill health rates
- Actions required following assessments by regulators
- Actions following receipt of comments from interested parties

Performance Measuring and Reporting

WBHO shall implement and maintain performance indicators to monitor the effectiveness of its existing safety systems. These indicators will monitor both input processes (compliance with programme standards) and lead and lag outcomes (e.g. first aid injuries and various injury frequency rates).
Records of these indicators shall be provided to the Site Construction Manager on a weekly basis and on request.

As a minimum, the Contractor shall record and supply to the Site Construction Manager at prescribed times each week, the following data:

□ The number and analysis of:
- fatalities
- lost time cases / injuries (indicating days lost)
- restricted work cases
- medical treatment cases / injuries
- first aid cases / injuries
- near miss (serious potential injuries)
- environmental hazards
- hours worked on site by all contractor personnel
- division of labour by expatriate, TCN, Ghanaian
- behavioural observation
- vehicle checklist
- audits / inspections
- number of employees / subcontractors
- training
- drug and alcohol testing.

All of the above data will be in accordance with the definitions specified in the Company's monitoring and measurement instructions and shall be supplied to the Site Construction Manager within the agreed timeline (weekly).

The goal for WBHO is a workplace that is free of incidents during the contract period

A policy of 'continuous improvement' will be documented and implemented by the Contractor and submitted to the Project Management Team for approval.

4.5.1.2 Monitoring and measuring equipment

To assure the validity of results, monitoring equipment used to measure OH&S conditions (e.g. sampling pumps, noise meters, toxic gas detection equipment, etc.) should be maintained in good working order and calibrated or verified, and adjusted if necessary against measurement standards, traceable to international or national measurement standards. If no standards exist, the basis used for calibration should be recorded.

The calibration status of measuring equipment should be clearly identified to the users OH&S measuring equipment whose calibration status is unknown, or which is known to be out of calibration should not be used Additionally, it should be removed from use, and be clearly labelled, tagged, or otherwise marked, to prevent misuse.

Calibration and maintenance should be performed by competent personnel.

4.5.2 Evaluation of compliance

Consistent with its commitment to compliance the organisation shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements

The organisation shall keep records of the results of the periodic evaluations.

Note: The frequency of periodic evaluation may vary for differing legal requirements.

The organisation shall evaluate compliance with other requirements to which it subscribes. The organisation may wish to combine this evaluation with the evaluation of legal compliance or to establish a separate procedure(s).

The organisation shall keep records of the results of the periodic evaluations.

Note: The frequency of periodic evaluation may vary for differing other requirements to which the organisation subscribes

A variety of inputs can be used to assess compliance, including.

- Audits
- The results of regulatory inspections
- Analysis of legal and other requirements
- Reviews of documents and/or records of incidents and risk assessments
- Interviews
- Facility, equipment and area inspections
- Project or work reviews
- Analysis of test results from monitoring and testing
- Facility tours and/or direct observations

A compliance evaluation programme can be integrated with other assessment activities. These can include management system audits, environmental audits or quality assurance checks

4.5.3 INCIDENT INVESTIGATION, NONCONFORMITY, CORRECTIVE ACTION AND PREVENTIVE ACTION

4.5.3.1 Incident Investigation

The company shall establish, implement and maintain a procedure(s) to record, investigate and analyse incidents in order to:

a) Determine underlying OH&S deficiencies and other factors that might be causing or contributing to the occurrence of incidents:
b) Identify the need for corrective action
c) Identify opportunities for preventive action
d) Identify opportunities for continual improvement
e) Communicate the results of such investigations

The investigations shall be performed in a timely manner.

Any identified need for corrective action or opportunities for preventive action shall be dealt with in accordance with the nonconformity, corrective action and preventive action procedure.

The results of incident investigations shall be documented and maintained.

Incident investigation is an important tool for preventing

Incident investigation is an important tool for preventing reoccurrence of incidents and identifying opportunities for improvements

All incidents should be investigated and prevent the under-reporting of incidents.

1. *Incident investigators will be appointed and provided with the relevant training.*
2. *An official register is to be kept of all incidents, occupational diseases and environmental incidents by the OH&S Department and by the relevant OH&S Coordinators.*
3. *All injuries, damages and near misses incidents are to be reported via the approved internal reporting form by employees prior to the end of their shift.*
4. *All injuries, damage incidents and near miss incidents are to be reported as soon as possible*
5. *All incidents resulting in serious injuries, occupational diseases, major loss and serious near misses shall be investigated by appointed incident investigator.*
6. *All reports are to be checked and signed by the relevant Manager. The corrective actions are to be followed up by the relevant Section 16.2 Assignee.*
7. *The Health and Safety Representative must be informed as soon as possible after an incident has occurred in his/her area/section of the workplace. The Health and Safety Representative must be involved in the incident investigation The Health and Safety Representative must attend all incidents that occur in his/her area/section*
8. *All incidents mentioned in point 5 above must be reported and investigated on the internal investigation form.*
9. *All Fatalities must be investigated fully on behalf of the Chief Executive Officer by designated investigators appointed in writing with notification to the Department of labour, NOSA and the FEM / Compensation Commissioner*
10. *The OH&S Department will follow up on any outstanding investigation reports.*
11. *The designated Person, acting on behalf of the Chief Executive Officer, may appoint a committee to investigate any other injury depending on the severity thereof or the injury / incident type or utilise outside agencies where in-house expertise is insufficient*
12. *Summaries of relevant injuries/incidents are to be distributed weekly to the Group Safety Director by the OH&S Coordinators.*
13. *All incidents and injuries are to be a standing item on the agendas of the SHE Committee Meetings. Lessons learnt are to be discussed*
14. *Incidents reportable according to Section 24 & 25 of the Occupational Health and Safety Act are to be reported to the Inspector by the OH&S Coordinator*
15. *For all disabling injuries and reportable incidents a "notification and investigation of incidents report" (Annexure 1) must be completed as required by regulation 8 of the General Administrative Regulations of the Occupational Health and Safety Act No. 85 of 1993.*
16. *All fatalities must be reported to line management and to the CEO without delay.*
17. *Follow up on all investigations will be done to ensure that the remedial action recommended was communicated to the injured person, that it was taken and was effective.*
18. *All incident investigation documentation is kept for at least 3 years and is available at all times for inspection, illness and diseases will be kept for 30 years.*
19. *All vehicle damage accidents, or any other damage to property or plant must be reported and enquiry held by the relevant departmental heads*
20. *The incident investigation is complete only when the following steps have been followed:*
    - *a) The investigator has visited the scene of the incident.*
    - *b) The direct and immediate cause of the incident has been identified, scope of investigation commensurate with both event and risks*
    - *c) The basic cause has been identified.*
    - *d) Positive and practical recommendations have been made after root cause was analysed to prevent future risks or minimise the recurrence of a similar incident.*
    - *e) An Assigned person to see to the implementation of the recommended remedial action required recommendations to be practical, feasible and comply with minimum standards*
    - *f) Follow-up is carried out after the action has been taken to determine if the action is effective, sufficient and practical.*

4.5.3.2 Nonconformity, corrective action and preventive action

The organisation shall establish, implement and maintain a procedure(s) for dealing with actual and poter nonconformity (ies) and for taking corrective action and preventive action. The procedure9s) shall de requirements for:

1. Identifying and correcting nonconformity (ies) and taking action(s) to mitigate their OH&S consequences
2. Investigating nonconformity (ies) determining their cause(s) and taking actions in order to avoid their recurrence
3. Evaluating the need for action(s) to prevent nonconformity (ies) and implementing appropriate actions designed to avoid their occurrence
4. Recording and communicating the results of corrective action(s) and preventive action(s) taken and
5. Reviewing the effectiveness of corrective action(s) and preventive action(s) taken

Identification of nonconformities should be made part of individual responsibilities, with individuals closest to the

work being encouraged to report potential or actual problems

Nonconformity:

Non-fulfillment of a requirement.
Note: Nonconformity can be any deviation from:

- Relevant work standards, practices, procedures, legal requirements, etc.
- OH&S management system requirements.

Once nonconformity is identified, it should be investigated to determine the cause(s), so that corrective action can be focused on the appropriate part of the system. The company should consider what actions need to be taken to address the problem, and/or what changes need to be made to correct the situation. The response and timing of such actions should be appropriate to the nature and scale of the nonconformity and the OH&S risk.

Corrective actions:

Identified actions or plan of actions to eliminate the cause of a detected nonconformity or other undesirable situation.

- Note 1: There can be more than one cause for nonconformity.
- Note 2: Corrective action is taken to prevent recurrence whereas Preventative action is taken to prevent occurrence

Corrective actions are taken to eliminate the underlying (root) cause(s) of identified nonconformity or incident in order to prevent recurrence.

Preventive Action

Action to eliminate the cause of a potential nonconformity, or other undesirable potential situation.

- Note 1: There can be more than one cause for a potential nonconformity.
- Note 2: Preventative action is taken to prevent occurrence whereas corrective action is taken to prevent recurrence.

Preventive actions are taken to eliminate the underlying (root) cause(s) of identified nonconformity or incident in order to prevent recurrence.

Root Cause

To the root of the nonconforming action

All internal and External Non-conformances relating to OH&S are recorded on a Nonconformance Report (NCR).

Register NCR in the NCR Register and allocate a number. Actions are required.

When a potential problem is identified but no actual nonconformity exists, preventive action should be taken using a similar approach as for corrective action. Potential problems can be identified using methods such as extrapolating corrective action of actual nonconformities to other applicable areas where similar activities occur, or hazard analysis.

Unforeseen incidents will not be raised as an NCR but will only be recorded on an Incident Report with a Root Cause Analysis

The NCR is issued to the responsible Department Head or person to investigate and implement Corrective Actions. He will investigate the root cause of non-conformance by utilizing Problem Solving Techniques such as 6M technique and/or the 5 WHYs.

Corrective Actions will be implemented and recorded on the NCR. Evidence of implementation will be attached to the Improvement Request

The initiator or the OH&S Coordinator will verify the effectiveness of the Corrective Actions by signing the Improvement Request.

If the NCR was not effective, the status will be recorded on the NCR Register. A monthly summary of outstanding and new NCR's will be submitted to the Group Safety Director.

The information relating to the NCRs will be analysed and presented to the Management Review Forum.

4.5.4. Control of records

WBHO has established and is maintaining records as necessary to demonstrate conformity to the requirements of it OH&S management system and of the OHSAS Standard, and the results achieved.

- Identify records and data
- Identify location and storage method (protection)
- Identify Responsible personnel
- Identify retention periods
- Retrieval methods
- Identify back-up requirements for electronic records
- Antivirus systems
- Off-site backup storage
- Disposal Methods

A record matrix is available which is legible, identifiable and traceable.

4.5.5 INTERNAL AUDIT (Also refer to 4.5.5.2 Internal Audit Procedure)

The following audits will be conducted:

- Monthly client audits – responsibility of Client Agent
- Monthly Sub-contractors audits – responsibility of the Site CHS Officer
- 6 Monthly System and OHSAS Audit (Monitoring and Review audit) – responsibility of CHS Managers
- Quarterly Compliance Audits – responsibility of CHS Managers
- 5 Yearly Legal Health and Safety Audit – responsibility of Legal Auditor

The organisation shall ensure that internal audit of the OH&S management system are conducted at planned intervals to:

a) Determine whether the OH&S management system:
   - o Conforms to planned arrangements for OH&S management including the requirements of the OHSAS Standards, and
   - o Has been properly implemented and is maintained, and
   - o Is effective in meeting the organisation's policy and objectives
b) Provide information on the results of audits to management

Audit programme(s) shall be planned, established, implemented and maintained by the organisation, based on the results of risk assessments of the organisation's activities, and the results of previous audits.

Audit procedure(s) shall be established, implemented and maintained that address:

a) The responsibilities, competencies, and requirements for planning and conducting audits, reporting results and retaining associated records, and
b) The determination of audit criteria, scope, frequency and methods

Selection of auditors and conduct of audits shall ensure objectivity and the impartiality of the audit process.

General audit principles

A establishing an audit programme
   - Communicate audit programme to relevant parties
   - Establishing and maintaining a process for the selection of auditors and audit teams
   - Providing the resources necessary for the audit programme
   - Planning, coordinating and scheduling audits
   - Ensuring that audit procedures are established, implemented and maintained
   - Ensuring the control of records of audit activities
   - Ensuring the reporting of audit results and audit follow-up

The audit should cover all areas and activities within the scope of the OH&S management system and assess conformity to OHSAS 18001

The frequency and coverage of OH&S management system audits should be related to the risks associated with the failure of the various elements of the OH&S management system, available data on the performance of the system, the output from management reviews, and the extent to which the system or the organisational activities are subject to change.

B Internal audit activities

- Initiating the audit
- Conducting document review and preparing for the audit
- Conducting the audit
- Preparing and communicating the audit report
- Completing the audit and conducting audit follow-up

Initiating an audit

- Defining the audit objectives, scope and criteria for the audit
  Note: audit criteria are the references against which audit evidence is compared, e.g OHSAS 18001, OH&S Policy and Procedures
- Selection of appropriate auditors and audit team for the audit taking into account the need for objectivity and impartiality
- Determining the audit methodology
- Confirming audit arrangements with the auditee and other individuals who will take part in the audit

Selection of auditors

One or more persons can undertake OH&S management system audits. A team approach can widen involvement and improve cooperation. A team approach can also allow a wider range of specialist skills to be utilised and allow for individual auditors to have specific competencies.

In order to maintain independence, objectivity and impartiality, auditors should not audit their own work

Auditors need to understand their task and be competent to carry it out. Auditors should be familiar with the OH&S hazards and risks of the areas they are auditing and any applicable legal or other requirements They need to have the experience and knowledge of the relevant audit criteria and activities they are auditing to enable them to evaluate performance and determine deficiencies

Conducting document reviews and preparing for an audit

Prior to conducting an audit, the auditors should review appropriate OH&S management system documents and records, and the results of prior audits. This information should be used by the organisation in making its plans for an audit.

The documentation that can be reviewed includes:

- Information on roles responsibilities and authorities (e.g. and organisation chart)
- OH&S policy statement
- OH&S objectives and programme(s)
- OH&S management system audit procedures
- OH&S procedures and work instructions
- Hazard identification, risk assessment and risk control results
- Applicable legal and other requirements
- Incident, nonconformity and corrective action reports

Plans for the audit should cover the following.

- Audit objectives
- Audit criteria
- Audit methodology
- Audit scope and/or location
- Audit schedule
- Roles and responsibilities of the various audit parties

Conducting an audit

The following activities are typically part of the audit

- Communication during the audit
- Collecting and verifying information
- Generating audit findings and conclusions

The audit team should communicate to the auditee in a timely manner:

- The plans for the audit
- The status of the audit activities
- Any concerns raised during the audit
- The audit conclusions

Preparing and communicating the audit report

The audit report should contain the following elements:

- The audit objectives and scope
- Information about the plans of the audit (identification of the members of the auditing team and the audited representatives, dates of audit and identification of the areas subject to audit)
- The identification of reference documents and other audit criteria used to conduct the audit (e.g. OHSAS 18001 and OH&S procedures)
- Details of identified nonconformities
- Any relevant remarks on the extent to which the OH&S management system:
  - Conforms to planned arrangements
  - Is being properly implemented and maintained
  - Achieves the stated OH&S policy and objectives

The results of the audits should be communicated to all relevant parties as soon as possible, to allow corrective actions to be taken. Confidentiality should be considered when communicating the information contained within the OH&S management system audit reports

Competing the audit and conducting audit follow-up

A review of the results should be carried out and effective corrective action taken, where necessary.
Follow-up monitoring of audit findings should be established to ensure that identified nonconformities are addressed
Top management should consider OH&S management system audit findings and recommendations, and take appropriate action as necessary within an appropriate time

4.6 MANAGEMENT REVIEW

Top management shall review the organisation's OH&S management system annually to ensure its continuing suitability, adequacy and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the OH&S management system, including the OH&S policy and objectives. Records of the review will be kept.

This Management System shall be reviewed annually and considerations which will determine if and what needs to be changed shall be as follows:

- Legislation changes
- Technology changes
- Management changes
- Inappropriate procedures
- Accident Trends / Leading KPI's
- Changes in the scope of work

This Occupational Health and Safety Management System shall be monitored by the Group OHS Manager and regular feedback from the sites shall ensure the Management system is appropriate and functional. The Group OHS Manager shall then review the changes before setting up a meeting with EXCO who shall make up the Review Team.

bsi.

By Royal Charter

Certificate of Registration

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM - OHSAS 18001:2007

This is to certify that:

WBHO Construction (Pty) Ltd
53 Andries Street
Wynberg
Johannesburg, 2012
South Africa

Holds Certificate Number: OHS 631388

and operates an Occupational Health and Safety Management System which complies with the requirements of BS OHSAS 18001:2007 for the following scope:

WBHO Construction (Pty) Ltd is involved with all major scale construction activities, Building, Civil Engineering, Road & Earthworks, Pipelines, Roadspan and Central Head Office functions to the various industries

For and on behalf of BSI:

Frank Lee, EMEA Compliance & Risk Director

Original Registration Date: 27/09/2010
Latest Revision Date: 14/09/2016

Effective Date: 17/11/2016
Expiry Date: 17/11/2019

...making excellence a habit.™

Certificate No: OHS 631388

Location	Registered Activities
WBHO Construction (Pty) Ltd 53 Andries Street Wynberg Johannesburg, 2012 South Africa	WBHO Construction (Pty) Ltd is involved with all major scale construction activities, Building, Civil Engineering, Road & Earthworks, Pipelines, Roadspan and Central Head Office functions to the various industries
WBHO Construction (Pty) Ltd 107 Chris Hani Road Glen Anil KwaZulu Natal 4051 South Africa	WBHO Construction (Pty) Ltd is involved with all major scale construction activities, Building, Civil Engineering, Road & Earthworks, Pipelines, Roadspan and Central Head Office functions to the various industries
WBHO Construction (Pty) Ltd 81 Warbler Street Cotswold Port Elizabeth Eastern Cape South Africa	WBHO Construction (Pty) Ltd is involved with all major scale construction activities, Building, Civil Engineering, Road & Earthworks, Pipelines, Roadspan and Central Head Office functions to the various industries
WBHO Construction (Pty) Ltd WBHO House Logan Way Pinelands, 7405 Cape Town Western Cape South Africa	WBHO Construction (Pty) Ltd is involved with all major scale construction activities, Building, Civil Engineering, Road & Earthworks, Pipelines, Roadspan and Central Head Office functions to the various industries

Original Registration Date: 27/09/2010
Latest Revision Date: 14/09/2016

Effective Date: 17/11/2016
Expiry Date: 17/11/2019

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.
An electronic certificate can be authenticated online.
Printed copies can be validated at www.bsigroup.com/ClientDirectory

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

CERTIFICATE

Standard	ISO 9001:2008
Certificate Registr. No.	01 100 928515

TÜV Rheinland Inspection Services Certifies:

Certificate Holder:

WBHO Construction (Pty) Ltd
53 Andries Street
Wynberg
Sandton
2090
Republic of South Africa

Scope:

Building construction, civil engineering, roads & earthworks including water reticulation, storage and piping systems. Including plant and services.

An audit was performed, Report No. 928515. Proof has been furnished that the requirements according to ISO 9001:2008 are fulfilled.

The due date for all future audits is 11 - 11 (dd.mm).

Validity:

The certificate is valid from 2016-12-13 until 2018-09-14
First Certification 2016

South Africa, 2016-12-13

TÜV Rheinland Inspection Services (Pty) Ltd
92 Koranna Avenue
Doringkloof
Centurion
0140
Certification Body No. C09

sanas
C09

bsi.

By Royal Charter

Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2004

This is to certify that: WBHO Construction (Pty) Ltd
53 Andries Street
Wynberg
Johannesburg
2012
South Africa

Holds Certificate Number: EMS 662678

and operates an Environmental Management System which complies with the requirements of ISO 14001:2004 for the following scope:

Building Construction, Civil Engineering, Roads and Earthworks including Water Reticulation, Storage and Piping Systems with the support of Plant and Services.

For and on behalf of BSI:

Andrew Launn, EMEA Sys Cert Ops & Compliance Director

Original Registration Date: 2016-05-01
Latest Revision Date: 2016-12-27

Effective Date: 2016-12-27
Expiry Date: 2018-09-14

Page: 1 of 2

...making excellence a habit.

Certificate No: EMS 662678

Location	Registered Activities
WBHO Construction (Pty) Ltd 53 Andries Street Wynberg Johannesburg 2012 South Africa	Building Construction, Civil Engineering, Roads and Earthworks including Water Reticulation, Storage and Piping Systems with the support of Plant and Services.
WBHO Plant & Services North 245 Mastiff Road Glen Austin Chloorkop 1624 South Africa	Support divisions for Building North and Civils who involve themselves in the construction of retail centres, hotels and resorts, leisure and recreation, office and commercial buildings, pharmaceutical facilities, hospitals and clinics, wineries, restorations and alterations, education and research, residential developments and some civil engineering works such as: water and effluent treatment, reservoirs, water control and marine works, silos and towers, power and distribution stations, industrial plants and other sundry civil works.
WBHO Construction Eastern Cape 81 Warbler Street Cotswold 6045 South Africa	The construction of retail centres, hotels and resorts, leisure and recreation, office and commercial buildings, hospitals and clinics, restorations and alterations, education and research, residential developments and some civil engineering works such as: water and effluent treatment, reservoirs, water control, mining, silos and towers, power and distribution stations, industrial plants and other sundry civil works.
WBHO Construction Cape 8 Logan Way Pinelands Western Cape 7450 South Africa	The construction of retail centres, hotels and resorts, leisure and recreation, office and commercial buildings, pharmaceutical facilities, hospitals and clinics, wineries, restorations and alterations, education and research, residential developments and some civil engineering works such as: water and effluent treatment, reservoirs, water control and marine works, silos and towers, power and distribution stations, industrial plants and other sundry civil works.
WBHO Construction KZN 107 Chris Hani Road (Old North Coast Rd) Glen Anil 4051 South Africa	The construction of retail centres, hotels and resorts, leisure and recreation, office and commercial buildings, hospitals and clinics, restorations and alterations, education and research, residential developments and some civil engineering works such as: water and effluent treatment, reservoirs, water control, mining, silo's and towers, power and distribution stations, industrial plants and other sundry civil works.

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Page: 2 of 2

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.
An electronic certificate can be authenticated online.
Printed copies can be validated at www.bsigroup.com/ClientDirectory

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

WBH
CONSTRUCTION (PTY) LTD

C&B Africa - Injury Stats

Month:	Jun.17

	WBHO - 12 month total					JV PARTNERS - 12 month total					SUBBIES - 12 month total					TOTALS					
	Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	RCR
2013	532528	1	0	0	0.00	590	0	0	0	0.0	958761	0	0	0	0	1491879	1	0	0	0.0	0.38
2014	1362013	0	0	0	0.00	0	0	0	0	0.0	2267637	1	1	0	0.441	3629650	1	1	0	0.3	0.06
2015	1698974	0	0	0	0.00	0	0	0	0	0.0	2015097	1	1	0	0.496	3714070	1	1	0	0.3	0.05
2016	1100096	1	0	0	0.00	15765	0	0	0	0.0	623703	0	0	0	0	1739564	1	0	0	0.0	0.11
2017	549541	0	0	0	0.00	23319	0	0	0	0.0	272814	0	0	0	0	845673	0	0	0	0.0	0.00

	WBHO - 12 month total					JV PARTNERS - 12 month total					SUBBIES - 12 month total					TOTALS					
	Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	RCR
Jul.16	93528	0	0	0	0.0	0	0	0	0	0.0	25185	0	0	0	0.0	118713	0	0	0	0.0	0.0
Aug.16	87154	0	0	0	0.0	3785	0	0	0	0.0	21186	0	0	0	0.0	112125	0	0	0	0.0	0.0
Sep.16	117871	0	0	0	0.0	2496	0	0	0	0.0	35761	0	0	0	0.0	156128	0	0	0	0.0	0.0
Oct.16	113587	0	0	0	0.0	2500	0	0	0	0.0	43565	0	0	0	0.0	159652	0	0	0	0.0	0.0
Nov. 16	147591	0	0	0	0.0	3492	0	0	0	0.0	73827	0	0	0	0.0	224910	0	0	0	0.0	0.0
Dec.16	72247	1	0	0	0.0	3105	0	0	0	0.0	54225	0	0	0	0.0	129577	1	0	0	0.0	1.5
Jan.17	47420	0	0	0	0.0	2430	0	0	0	0.0	26025	0	0	0	0.0	75875	0	0	0	0.0	0.0
Feb.17	113280	0	0	0	0.0	3105	0	0	0	0.0	41000	0	0	0	0.0	157394	0	0	0	0.0	0.0
Mar.17	100530	0	0	0	0.0	4050	0	0	0	0.0	48495	0	0	0	0.0	153074	0	0	0	0.0	0.0
Apr.17	76340	0	0	0	0.0	2970	0	0	0	0.0	44227	0	0	0	0.0	123537	0	0	0	0.0	0.0
May.17	102830	0	0	0	0.0	5382	0	0	0	0.0	30762	0	0	0	0.0	138973	0	0	0	0.0	0.0
Jun.17	109133	0	0	0	0.00	5382	0	0	0	0.0	82307	0	0	0	0	196821	0	0	0	0.0	0.0
	1181517	1	0	0	0.0	38697	0	0	0	0.0	526562	0	0	0	0.0	1746776	1	0	0	0.0	0.1

WBHO (LTIFR = Total number of Lost Time Injuries + Fatal Injuries x 1, 000, 000) / Total Number of Man-hours worked)

(RCR = Total number of Claims x 200, 000) / Total Number of Man-hours worked)

C&B Africa		WBHO - 12 month total					JV PARTNERS - 12 month total					SUBBIES - 12 month total					TOTALS					
		Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	Hours	Inj	LTI	Fat	LTIFR	RCR
50419	Mufulira Winder House	40355	0	0	0	0.0	0	0	0	0	0.0	7711	0	0	0	0.0	48066	0	0	0	0.0	0.0
40371	Achimota Retail Centre	6350	0	0	0	0.0	0	0	0	0	0.0	5438	0	0	0	0.0	11788	0	0	0	0.0	0.0
50422	Winderhouse Kitwe	5666	0	0	0	0.0	0	0	0	0	0.0	410	0	0	0	0.0	6076	0	0	0	0.0	0.0
50429	Lusaka Smelt works	131849	0	0	0	0.0	0	0	0	0	0.0	20030	0	0	0	0.0	151879	0	0	0	0.0	0.0
50439	Ndola Coal Bunkers	21589	0	0	0	0.0	0	0	0	0	0.0	9452	0	0	0	0.0	31041	0	0	0	0.0	0.0
40388	Kumasi City Mall	181667	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	181667	0	0	0	0.0	0.0
40394	Accra Mall	2170	0	0	0	0.0	0	0	0	0	0.0	5859	0	0	0	0.0	8029	0	0	0	0.0	0.0
50442	Limeco	65410	0	0	0	0.0	0	0	0	0	0.0	30597	0	0	0	0.0	96007	0	0	0	0.0	0.0
	Mopani Smelter	24225	0	0	0	0.0	0	0	0	0	0.0	1850	0	0	0	0.0	26075	0	0	0	0.0	0.0
50446	ROM Stockpile Tunnel	293503	1	0	0	0.0	1001	0	0	0	0.0	66507	0	0	0	0.0	361011	1	0	0	0.0	0.6
50454	Lusaka Breweries Warehous	47365	0	0	0	0.0	0	0	0	0	0.0	12666	0	0	0	0.0	60031	0	0	0	0.0	0.0
50460	Zambian Breweries	29112	0	0	0	0.0	0	0	0	0	0.0	9713	0	0	0	0.0	38825	0	0	0	0.0	0.0
50461	RGB Line	25797	0	0	0	0.0	0	0	0	0	0.0	14855	0	0	0	0.0	40652	0	0	0	0.0	0.0
31512	Standard Chartered Bank JV	306461	0	0	0	0.0	39883	0	0	0	0.0	341474	0	0	0	0.0	687818	0	0	0	0.0	0.0
		1181517	1	0	0	0.0	40884	0	0	0	0.0	526562	0	0	0	0.0	1748963	1	0	0	0.0	0.1

This letter is provided for information only and confers no rights upon the letter holder and is not intended as an insurance policy/document.

Yours faithfully,
For: EDWARD MENSAH, WOOD & ASSOCIATES LTD.

WILLIAM F. WOOD
ASSITANT MANAGER

WBHO RELY ON OUR ABILITY	OCCUPATIONAL H & S MANAGEMENT SYSTEM MONTHLY DIVISIONAL SAFETY CO-ORDINATOR OHS REPORT	OHS Section 4.4.4.7.1 REV 6.3 13/02/2015 PAGE 1 of 3
Record Keeping	Div OHS Dept (Original), Group OHS Manager (Copy), Divisional Directors, Divisional MD, Archive	

This Monthly Divisional OHS Report must be submitted to George Kleinsmit on or before the 3rd of each month 2017

DIVISION *Civil Division* NO. *05* Tick month Jan Feb Mar Apr (May) Jun Jul Aug Sep Oct Nov Dec

1. SAFETY OFFICER PLANNING

Legend

POOR PERFORMERS			AVERAGE PERFORMERS			[redacted]
1	2	3	4	5	6	
10%	20%	30%	40%	50%	60%	

A Safety Officer Evaluation report must be completed every 3 months. These evaluation reports must be sent to the Group OH&S Director.

	Junior Safety Officer		Intermediate Safety Officer		Senior Safety Officer / Manager

SAFETY OFFICER					CONTRACT INFORMATION				PLANNING FOR NEXT 6 MONTHS						
NAME	CELL NO	AGE	RATING	LEVEL	CONTRACT NO.	CONTRACT NAME	SITE AGENT	CELL NO.	JUNE 2017	JULY 2017	AUGUST 2017	SEPT 2017	OCT 2017	NOV 2017	DEC 2017
Wayne Holland	0606265780	26			50434	Northam Platinum Furnace	F. Sonnendecker	0834554786	X	X					
Dale Marais	0823836614	44	8		50173	Kusile JV	Vitor Rodrigues	0795073333	X	X	X	X	X	X	X
Joseph Shabangu	0820721059	55			50173	Kusile JV	Vitor Rodrigues	0795073333	X	X	X	X	X	X	X
Morgan Naidoo	0827086862	37	8		50424	Twinsaver Mill	Brent van Deventer	0833000285	X	X	X	X	X	X	X
Masha Letlokwane	0721964965	41			50459	Parys Stadium	Khulu Mabaso	0834520141	X	X	X	X	X	X	X

WBHO RELY ON OUR ABILITY	OCCUPATIONAL H & S MANAGEMENT SYSTEM MONTHLY DIVISIONAL SAFETY CO-ORDINATOR OHS REPORT	OHS Section 4.4.4.7.1 REV 6.3 13/02/2015 PAGE 2 of 3
Record Keeping	Div OHS Dept (Original), Group OHS Manager (Copy), Divisional Directors, Divisional MD, Archive	

SAFETY OFFICER					CONTRACT INFORMATION				PLANNING FOR NEXT 6 MONTHS						
NAME	CELL NO	AGE	RATING	LEVEL	CONTRACT NO.	CONTRACT NAME	SITE AGENT	CELL NO.	JUNE 2017	JULY 2017	AUGUST 2017	SEPT 2017	OCT 2017	NOV 2017	DEC 2017

2. MONTHLY SITE AUDITS AND MONTHLY INSPECTIONS

ACCEPTABLE		91 – 100%		DEPENDABLE			81 – 90%		[illegible]	[illegible]
CONTRACT NO.	CONTRACT NAME	DIRECTOR	FIRST QUARTERLY AUDIT	2ND QUARTERLY AUDIT	3RD QUARTERLY AUDIT	4TH QUARTERLY AUDIT	Date NCR's Issued	Date NCR's Closed Out	Department of Labour Notices issued	CORRECTIVE / PREVENTATIVE ACTIONS
50173	KCW JV	L.J. Smit	96,4%	GROUP AUDIT				-	-	-
50459	PARYS STADIUM	K. MABASO					25.05.17	Nil		
50434	NORTHAM PLATINUM FURNACE	F. Sonnendecker	56%		92%	97.3%		Nil	-	-
50424	TWINSAVER TM5	C. BOTHA		93,9%				Nil		

3. CAUSES AND INJURY TREND ANALYSIS

Monthly Accident Stats to be included in the Divisional Stats.

Please supply the Corrective and Preventative measures as per the Accident / Incident registers.

Attach all Serious Investigation Reports and Contractor Audits to this report. These reports must be signed off by all parties as stipulated on the Accident Document.

4. DOCUMENTS TO BE SUBMITTED WITH REPORT

NOTES:

1. COMPILE THE DIVISIONAL STATS.
2. ATTACH ANY NOTICE FROM THE DEPARTMENT OF LABOUR (DOL) TO THIS DOCUMENT.
3. ATTACH COPIES OF ALL THE AUDITS TO THIS DOCUMENT. (FRONT PAGES ONLY)
4. ATTACH COPIES OF THE SAFETY OFFICER EVALUATION REPORTS TO THIS DOCUMENT EVERY THREE MONTHS.
5. ATTACH ALL SERIOUS INVESTIGATION REPORTS TO THIS DOCUMENT AND IT SHOULD BE SIGNED OFF.
6. ATTACH COPIES OF ALL FEM / WCA (CONTRACTORS INCLUDED) FORMS.
7. DID THE SITE SAFETY OFFICER FORWARD COPIES OF ALL THE ORIGINAL DOCUMENTATION AND A CERTIFIED COPY OF THE ID TO FEM / WCA?

Completed By: Hugo Rheeders

Date: 02 June 2017

WBHO RELY ON OUR ABILITY	OCCUPATIONAL H & S MANAGEMENT SYSTEM MONTHLY DIVISIONAL SAFETY CO-ORDINATOR OHS REPORT	OHS Section 4.4.4.7.1 REV 6.3 13/02/2015 PAGE 1 of 3
Record Keeping	Div OHS Dept (Original), Group OHS Manager (Copy), Divisional Directors, Divisional MD, Archive	

This Monthly Divisional OHS Report must be submitted to George Kleinsmit on or before the 3rd of each month

DIVISION *Civil Division* NO. *06* Tick month

Jan	Feb	Mar	Apr	May	Jun (circled)	Jul	Aug	Sep	Oct	Nov	Dec

1. SAFETY OFFICER PLANNING

Legend

POOR PERFORMERS			AVERAGE PERFORMERS			[redacted]
1	2	3	4	5	6	
10%	20%	30%	40%	50%	60%	

A Safety Officer Evaluation report must be completed every 3 months. These evaluation reports must be sent to the Group OH&S Director.

[redacted]	Junior Safety Officer		Intermediate Safety Officer	[redacted]	Senior Safety Officer / Manager

SAFETY OFFICER					CONTRACT INFORMATION				PLANNING FOR NEXT 6 MONTHS						
NAME	CELL NO	AGE	RATING	LEVEL	CONTRACT NO.	CONTRACT NAME	SITE AGENT	CELL NO.	JULY 2017	AUGUST 2017	SEPT 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018
Wayne Holland	0606265780	26			50434	Northam Platinum Furnace	F. Sonnendecker	0834554786	X	X					
Dale Marais	0823836614	44	8	[redacted]	50173	Kusile JV	Vitor Rodrigues	0795073333	X	X	X	X	X	X	X
Joseph Shabangu	0820721029	65			50173	Kusile JV	Vitor Rodrigues	0795073333	X	X	X	X	X	X	X
Morgan Naidoo	0827086862	37	8	[redacted]	50424	Twinsaver Mill	Brent van Deventer	0833000285	X	X	X	X	X	X	X
Masha Letlokwano	0721964965				50459	Parys Stadium	Khutu Mabaso	0834520141	X	X	X	X	X	X	X
Lloyd Chileshe					50451	Lusaka Small Works	Sadao Chika		X	X	X	X	X	X	X
Rosemary Mutalo					50446	Mopane Smelter	Ndifolani Mbambagani		X	X	X	X	X	X	X
Gift Chola					50461	RGB Ndola	M. Sukodela		X	X	X	X	X	X	X
Edna Mbowe					50446	ROM Stock Pile Tunnel	N. Mbambangani		X	X	X	X	X	X	X
Thomas Mtonga					50454	Zambian Breweries	Mike Champion		X	X	X	X	X	X	X

WBHO RELY ON OUR ABILITY	OCCUPATIONAL H & S MANAGEMENT SYSTEM MONTHLY DIVISIONAL SAFETY CO-ORDINATOR OHS REPORT	OHS Section 4.4.4.7.1 REV 6.3 13/02/2015 PAGE 2 of 3
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SAFETY OFFICER					CONTRACT INFORMATION				PLANNING FOR NEXT 6 MONTHS						
NAME	CELL NO	AGE	RATING	LEVEL	CONTRACT NO.	CONTRACT NAME	SITE AGENT	CELL NO.	JULY 2017	AUGUST 2017	SEPT 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018

2. MONTHLY SITE AUDITS AND MONTHLY INSPECTIONS

ACCEPTABLE		91 – 100%		DEFENDABLE			81 – 90%			
CONTRACT NO.	CONTRACT NAME	DIRECTOR	FIRST QUATERLY AUDIT	2ND QUARTERLY AUDIT	3RD QUARTERLY AUDIT	4TH QUARTERLY AUDIT	Date NCR's Issued	Date NCR's Closed Out	Department of Labour Notices issued	CORRECTIVE / PREVENTATIVE ACTIONS
50173	KCW JV	L.J. Smit	96,4%				09.02.17	-	-	-
50424	PARYS STADIUM	K. MABASO					Clear Report	Nil	-	-
50434	NORTHAM PLATINUM FURNACE	F. Sonnendecker	56%			97.3%		Nil	-	-
50424	TWINSAVER TM5	C. BOTHA					07.06.17	23.06.17	-	-
50451	Lusaka Small Works	JOHAN BUYS								
50446	Mopane Smelter	JOHAN BUYS								
50461	RGB Ndola	JOHAN BUYS								
50446	ROM Stock Pile Tunnel	JOHAN BUYS								
	Zambian Breweries	JOHAN BUYS								

3. CAUSES AND INJURY TREND ANALYSIS

Monthly Accident Stats to be included in the Divisional Stats.

Please supply the Corrective and Preventative measures as per the Accident / Incident registers.

Attach all Serious Investigation Reports and Contractor Audits to this report. These reports must be signed off by all parties as stipulated on the Accident Document.

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NOTES:

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5. **ATTACH ALL SERIOUS INVESTIGATION REPORTS TO THIS DOCUMENT AND IT SHOULD BE SIGNED OFF.**
6. **ATTACH COPIES OF ALL FEM / WCA (CONTRACTORS INCLUDED) FORMS.**
7. **DID THE SITE SAFETY OFFICER FORWARD COPIES OF ALL THE ORIGINAL DOCUMENTATION AND A CERTIFIED COPY OF THE ID TO FEM / WCA?**

Completed By: **Hugo Rheeders** **Date** **06 July 2017**

Division	R&E - International Projects	Report Compiled by:	Tito Moreira
			Tick with (✓) for the month of the stats.

Site Near Miss Report

Company	Transgressor	Date Investigated	COY No.	Hazard categories (tally)	Total Near Misses	Description of Near Miss	Preventative measures
WBHO	WBHO	14-07-2017		[illegible]	1	TLB operator was assigned to prepare the base of a trench that was already dug, while aligning the machine (WBHO 036), it got into the trench with the right front and rear wheels	TLB must test the surroundings before it performs any task. He must make sure the machine is away from trenches
WBHO	CAT Mechanic	19-07-2017		[illegible]	1	Cat mechanics were observed working on site without safety orientation on site. They also had a vehicle that was not site safety compliance	All persons proceed to report to the head office for orientation before they enter the site for any service or maintenance that needs to be done
WBHO	WBHO	19-07-2016		[illegible]	1	As D7 was working spreading material on the ramp, it got too close to the edge of the ramp and drifted off the hard and stable surface thus getting stuck	Operators to avoid operating dozers on wet surfaces on the soft edges of any ramp or platform
WBHO	WBHO	23-07-2016		[illegible]	1	Employees were observed working in a trench 2m deep spreading to level of a pipe	No task to be carried out if a trench is not deemed safe by the safety department
WBHO	Sand Supplier	20-07-2016		[illegible]	1	Sand truck while parked waiting to offload sand on site, the assistant was observed climbing onto top of the bin to remove sand cover with bare feet, without wearing any PPE	All suppliers coming to deliver material on site must be aware of company safety requirements and PPE is to be used when they are on site
WBHO	Hi-Up Operator	2017/07/14	N/A	[illegible]	1	Whilst WBHO employees were busy with off-loading a bundle of 32 mm re-bar from a HIAB truck the Hi-AB Crane operator noticed that the one outrigger lifted about 50-60 mm.	RA revised Hi-Up only to load and offload small pieces of rebar/Steel. Crane to be used to load and offload long sections of steel.
WBHO	[illegible]	[illegible]		[illegible]	3	Not wearing PPE on site	
WBHO	bath site	2017/07/21		[illegible]	1	spread anchor brake while lifting.	
WBHO	WBHO	21/07/2017	150	[illegible]	1	On the 29th of June around 13:40hours, Isuzu Truck (M31) was loading rocks from the Advance rock borrow pit area to the Dividing Embankment. So during the operation when the Truck reach the traffic lights on the [illegible] road, the Isuzu driver was told by one military personnel (security-AJL) to go and park the Truck at the Heavy Equipment Parking area between the Aeroplane (Balloon) bus stops. When the Isuzu Truck reached the Heavy Equipment parking area the driver drove onto a soft spot and that caused the Truck to tilt. And with the help of a dozer the Truck was push to safety. There were no damages and injuries sustained	
WBHO	WBHO		N/A	[illegible]	0	On the 05th of July 2017 around 13:00hours, the heavy rainfall cause part of the wall behind WBHO Office containers to slide in and covers one office container from its position. There were no damages and injuries sustained.	
	Total			1, 0, 1, 0, 1, 0, 0, 2, 0, 1, 2, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0	11		

WBHO Construction (Pty) Ltd	OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM NON-CONFORMANCE REPORT	OHS	Section 4.5.3.9	
		REV	6.4	03/08/2015
		PAGE	1 of 1	
Record Keeping	Divisional Safety Department, H/O Safety Department, Archive			

DIVISION / CONTRACT NAME	R&E - International Projects	CONTRACT NUMBER	All International Projects	MONTH / DATE OF INSPECTION	Jul-17
TO:				COMPILED BY:	Tito Moreira

NCR No.	Date Raised	Initiator's Name	Resp. Person / Company	Description of Non-conformance or Observation (include photo)	Correction (immediate action to eliminate situation)	Root Cause Analysis (WHY, WHY, WHY, WHY, WHY) (E.g. Human factor, unsafe act, faulty equipment, training, administrative, etc.)	Corrective Action Implemented (including photo)	Preventive Action taken to prevent recurrence	Comments Updated (Risk Assessment / Procedure (if any))	Closed-out Complete Y	Closed-out Complete N	Closed-out Signature of Initiator after verification	Date Closed out
1	[illegible]	[illegible]	[illegible] - CAT [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		✓		
2	2017/07/21	L MURADZI	EDDY	NOT WEARING PPE ON SITE	STOP FIX	BEHAVIOUR BAD ATTITUDE	MONITORING DAILY	PPE COMPAIGNE	YES	Y		LM	[illegible]/17
3				* Type and Severity ____									
4				* Type and Severity ____									
5				* Type and Severity ____									
6				* Type and Severity ____									
7				* Type and Severity ____									
8				* Type and Severity ____									
9				* Type and Severity ____									
10				* Type and Severity ____									
11				* Type and Severity ____									
12				* Type and Severity ____									
13				* Type and Severity ____									
14				* Type and Severity ____									
15				* Type and Severity ____									
16				* Type and Severity ____									
17				* Type and Severity ____									
18				* Type and Severity ____									
19				* Type and Severity ____									
20				* Type and Severity ____									
21				* Type and Severity ____									
22				* Type and Severity ____									
23				* Type and Severity ____									
24				* Type and Severity ____									
25				* Type and Severity ____									
26				* Type and Severity ____									
27				* Type and Severity ____									
28				* Type and Severity ____									
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49				* Type and Severity ____									
50				* Type and Severity ____									

NCR No	Date	Notes of Verification (Follow-up) of Corrective and Preventive Actions Implemented to Prevent Recurrence of Non-conformance	Name & Signature
1			
2			
3			
4			
5			
6			
7			
8			
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* Type and Severity:

1. Observation
   An Observation is an opportunity for improvement. 3 Observations raised for the same action will results in a non-conformance.

2. Non-conformances
   A Non-conformance is a non-fulfilment of a requirement that can be any deviation from: relevant work standards, practices, procedures, legal requirements, OH&S requirements, etc.

Minor or Major

Internal Audit (Legal, OH&S, Inspections)
External Audit (Certification, Client, Legal)
Customer Complaint
Supplier Complaint
Internal Safety Failure
Health
Near Miss
Incident/Accident

WBHO
CONSTRUCTION (PTY) LTD

Achievement Report

OH&S Coordinator's Name: Tito Moreira

Month: Jul-17

Division	Project Name	Name of Director	Name of Site Agent	Name of Safety Officer	Achievement (e.g. 100 000 manhours without LTI)
R&E - International	Alufer Bel-Air Mining	Peter Raw	Andrew van Zyl	Timothly Nkabinda	338 475 hours LTI Free
R&E - International	Natougou Gold Project	Peter Raw	S. Twumasi-Ankrah	Lucas Briedenhann	98 491 hours LTI Free
R&E - International	GAC Housing	Peter Raw	K Ababio	L Muradzi	762 199 hours LTI Free
R&E - International	Adamus - Nzema Project	Peter Raw	Aaron A. Aidoo	Michael Asamoah	200 860 hours LTI Free
R&E - International	Ahafo Gold Mine	Peter Raw	Pieter Rossouw	Addai Ebenezer	5 462 820 hours LTI Free

SITE COMPETENCY REPORT - Alufer Bel-Air Mining

Site Name Alufer Bam   Contract NO. 61431   Date 31/03/2017

COY#	SURNAME	INITIAL	ID NUMBER	CERTIFICATE	CERTIFICATE EXPIRY	MEDICAL EXPIRY	PROP EXPIRY	ASSESSOR	SITE	SAFETY CO-ORDINATOR	COMMENTS
	Simonds	G.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Strachan	J.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Van Zyl	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Kalinko	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Moffay	C.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Marapiwe	T.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Gyampoh	H.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Nyandoro	L.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Obeur	V				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bezuidenhout	T.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Lange	T.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Afzal	B.M				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Ntsepise	B.L.					N/A		Alufer Bam	Tiao Moreira	
	Makesa	M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Nyathi	E.M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Ankoma	F.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bellow	T.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Laura	L.S.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Barry	M.M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	D.T.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	A.K.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Toure	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Conde	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	K.M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	Y.A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Yansane	G.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	I.S.B.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bangoura	S.				Feb. 14	N/A		Alufer Bam	Tiao Moreira	
	Bangoura	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Conte	L.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Conte	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Keita	S.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Fofana	S.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	L.M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Conte	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	O.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	I				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	A.M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bangoura	M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bangoura	M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bangoura	I.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Manah	D.R.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	I.S.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	L.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	J.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Keita	M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	F.M				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	K.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	Y.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	R.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Soumah	F.A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bangoura	M.M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bonomou	M.Z.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sumaila	K.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Diaby	T.M.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Baragar	K.S.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sow	D.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Lamine	T.K.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	I.D.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Bourrou	S.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Barry	A.O.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Camara	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	I.S.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	A.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sylla	K.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Wright	L.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Nene	F.				Feb. 18	N/A		Alufer Bam	Tiao Moreira	
	Sydney	K.				May. 18	N/A		Alufer Bam	Tiao Moreira	
	Arthur	F				Jun.18	N/A		Alufer Bam	Tiao Moreira	
	Tetteh	E.				Jun.18	N/A		Alufer Bam	Tiao Moreira	
	Mishell	G.				Jun.18	N/A		Alufer Bam	Tiao Moreira	

WBHO

SITE COMPETENCY REPORT

Site Name Natougou Gold Project   Contract NO. 61417   Date 17-Jul

COY#	SURNAME	INITIAL	ID NUMBER	CERTIFICATE	CERTIFICATE EXPIRY	MEDICAL EXPIRY	PROP EXPIRY	ASSESSOR	SITE	SAFETY CO-ORDINATOR	COMMENTS
	Row					2018/03/01			Natougou Gold Project	Tiao Moreira	Contracts Director
	Pengilley					2018/03/01			Natougou Gold Project	Tiao Moreira	Contracts Manager
	AMOS YEBOAH					2018/03/01			Natougou Gold Project	Tiao Moreira	Site Manager
	DAVIS AMPEM					2018/03/01			Natougou Gold Project	Tiao Moreira	Production Manager
	FRANK OSEY-YEBOAH					2018/03/01			Natougou Gold Project	Tiao Moreira	Surveyor
	ISAAC ANANE					2018/03/01			Natougou Gold Project	Tiao Moreira	QA
	BENJAMIN QUAYSON					2018/03/01			Natougou Gold Project	Tiao Moreira	Site Engineer
	EMMANUEL DODOO					2018/08/01			Natougou Gold Project	Tiao Moreira	Site Engineer
	GABRIEL EKUAJE					2018/03/01			Natougou Gold Project	Tiao Moreira	Foreman
	ISAAC ZAKARIAH					2018/03/01			Natougou Gold Project	Tiao Moreira	Foreman
	SAM TWUMASI-ANKRAH					2018/03/01			Natougou Gold Project	Tiao Moreira	B/Plant Supervisor
	JACQUE MARTEY OUDOVEI					2018/05/01			Natougou Gold Project	Tiao Moreira	Safety Officer
	ACUSAR ROGER	L	B3262763			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mason
	BADIANG EDWIN	S	B7665486			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mason
	CALULANG BEN	K				Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mason
	DAEL RAMEL FR	M	B2975283			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mason
	DALAODAO CAR	D	B3862765			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mason
	DALAUGON EDW	E	B2790341			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mason
	DE GUZMAN DONATO MAGLUYAN		B8741946			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Carpenter
	DE LA CRUZ JOVITO LEYSICO		B7507413			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Carpenter
	GACANG JESUS NAMOC		B3354697			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Carpenter
	HITALADA MILBEN DAHUYA		B1298730			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Carpenter
	INDITA LEONEL VILLA		B2984872			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Carpenter
	JOMAR AGUILAR					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Carpenter
	LAMOSTE JOSELITO DURON		B2869960			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer
	LOSABIA ALLEN CAILO		B4805295			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer
	PALERO ALEXANDER SALDANA		B0724670			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer
	PERFECTO UMBLAS		B5302578			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer
	PHILIP L. BADIANG		B9035100			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	POLLEROS ARNEL GALORPOT		B1608174			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	VILLOTES CESARIO SAURA		B8983588			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	WILLIAM S. ESTRERA		B8030633			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	ANDRE ENGELBRECHT		B6007676			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	JONATHAN CLARKE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	LUCAS BRIEDENHANN		B7285844			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	MICHEAL MUJAKACHI		B9024471			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	BAKALA BABU		B6741600			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	BANCE S. IBRAHIM		B8963334			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	BAZIE EDMOND		B1268468			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	BOUDA ANDRE		B4679670			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	BOUDA B HERVE		B1173941			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	GANSORE MAHAMADOU		B1306053			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	GUELBEOGO ABASSE		B9051115			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	KOANARI ALEXIS		B3076941			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	KOLOGO AUGUSTE CLEMENT lla J		B4089875			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	LOMPO NATANI		B6007901			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	NABOLE HAMIDOU		B2862942			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	OUALI KOUHOUADA		B0502886			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	OUALI OUNTENI		B4650988			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	OUEDDRAOGO ABDOU		B1607528			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	RAMDE H. ELISEE		B2111985			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	TANDAMBA DARI		B3125414			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	General Worker
	TANKOANO BILIMPO		B3065565			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Safety Representative
	TANKOANO DANIEL		B5248312			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Storeman
	YONLI MOHAMET		B6952704			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Survey Asst
	COMBARY NASSOURI		B4313345			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Site Driver
	DABINI JOEL		B473859			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Driver Asst, Hi-Up
	KOUANDA MAHAMADI		B6237940			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Driver Hi-Up
	OUABA SEYDOU					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	TLB Operator
	OUALI KONDIOUA		B2014042			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Driver
	OUEDRAOGO ANTOINE		B8625783			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Water Bowser Operator
	OUEDRAOGO OUANGO		B1062161			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mixer Truck Operator
	OUOBA DANIEL		B4158105			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mixer Truck Operator
	PORGO OUMAROU		B4303751			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mechanic
	SAWADOGO ABDOUL KALILOU		B1106006			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Mixer Truck Operator
	TANKOANO DOUGUIDIOA		B6705312			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	TLB Operator
	TANKOANO EMMANUEL		B3110200			Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Water Bowser Operator
	TANKOANO LABIDI					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Crane Operator
	TANKOANO MIYEMBA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Rigger
	THIOMBIANO DIEUDONNE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer
	TINDANO AIME					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Supervisor
	YOUGBARE T WENDKOUNI					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer
	BANGA HAMMA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer
	GUITANGA DIANOI					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer
	KABORE BENOIT					Awaiting Date from Mine Doctor			Natougou Gold Project	Tiao Moreira	Steel Fixer

	KOUDGO YOURAOGO dit MOUSTAPHA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	LANKOANDE B. MODESTE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	MAHAMANE ISSA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	MAIGE SOULEYMANE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	NGIEMA PINAOGO				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	SAGNAN ZAKARIA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	SAWADOGO HAMIDOU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	SOUDRE SAIDOU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	SOUSSE BOUTAYE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	SOUWEMBA R. DENIS				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	TAM MOHAMMED				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	TANKOANO MAMOUDOU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	Steel Fixer
	TANKOANO Y. JOEL				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	B/Plant Operator
	THIOMBIANO AMANI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	THIOMBIANO CASIMIR				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TRAORE ADAMA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	AGOUALINGA JEREMIE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	AMADOU ISSAKA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	BARRY ISSAKA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	COULDIATY SALIF				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DADIGARI ENOCH				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DADJOARI FOLDIOA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DAHANI ZAKARI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DERME HAMIDOU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DIALLO AMADOU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DIALLO SAIDOU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DICKO AMADOU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	EUNI ABDOUDRAMANE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	GUIRA SOULEYMANE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	HESSA DATI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	ILLO NOEL				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	KERE L. URBAIN				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	KODOUGOU WENNEN POLY				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	KOURAOGO BARNABE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	LOMPO ALI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	LOMPO PHILIPPE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	MABA MALDIOA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	MABA YEMPABOU INOUSA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	MOKIERE MIKAILA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUALI ADAMA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUALI ANTOINE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUALI INNOUSSA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUALI YEMPABOU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUEDRAOGO BOUBACAR				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUMSAORE GUESTABA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUMSAORE MANEGRENOMA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUOBA AMPOUGUINI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUOBA KALINDAME				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUOBA TONDIOA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUOBA OUNTENI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	SANKOABGA MOADA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	SO OUMAROU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	SOGLI CHARLEMAGNE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	SOUOBA ADAMA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO ADIPAA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO AMTANDI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO ANDRE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO BENDI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO BILIMPO				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO BOURIMOALI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO FOLDIOA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO HADI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO JEAN-BAPTISTE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO LAMBIRNI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO KOANO				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO KOYIDIOA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO KONDIOA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO LARBABA JUSTIN				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO MALDIOA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO MANDIALI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO MINDIEBA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO MINTEMBA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO NAKOAMBA BENOIT				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO OUMAROU				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO OUMPOUGRIBA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO OUANDEDI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO PASAMANGA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO PALIPOUGUINI				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO TADIOA				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO THIMOTE				Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	

	TANKOANO TIMOTEE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO YAMINDI					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO YEMBOADO					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO YEMBOANI					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	THIOMBIANO OUALDIA OSCAR					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TIENDREBEOGO P. YACOUBA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TONLI T CONKA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	YONLI DIERGOU					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	YONLI MIYENBA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	YONLI YEMPABOU					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	ZOMBRE ABLASSE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	IDRISSOU KAMALOUDINI					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUMSAORE T. AMBONGATA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	CONGO KARIM					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DEMAE BACHIROU					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANKOANO STEPHANE YEMPABOU FABRICE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DIAPA ODILIA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	YAMBOULI ABOUBACAR					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DIDA BOUBACAR					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	ZIDA BOUBACAR					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	ZOUNGRANA ABDOULAYE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	SAKANDE ABDOULAYE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	BAZEMO BATIO					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	COMPAORE SAIDOU					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	BAMOGO ADAMA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	DABIRE DEO GRATIAS W					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	KABORE JAMAL					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUEDRAOGO KOUKA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	EMMANUEL SAWADOGO					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	BONKOUNGOU FELIX					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	KORODO BOUREIMA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUEDRAOGO SIDNY EDOUARD					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	SAWADOGO YOUSSOUF					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	SOUWEMA XAVIER P.					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	SAWADOGO SOULEYMANE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TANDAMBA ADAMOU					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUEDRAGO TOUMWENDYAM					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	KBOUDO ABDOUL AZIZ					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	MAHAMA ZOUNGRANA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	NACOULMA PINGWENDE SYLVAIN					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	OUANGA ABDOUL-RAHIM					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	ROBERT ADUSEI					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	ISSA SOMLARE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	TAMPAGA B. JACOB					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	YERMI SAIDI					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	BONKOUNGOU ABDOULAYE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	BOUGMA ISSA					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	
	AAIME LACINE					Awaiting Date from Mine Doctor			Natougou Gold Project	Tito Moreira	

WBHO
CONSTRUCTION (PTY) LTD

SITE COMPETENCY REPORT

Site Name GAC HOUSING   Contract NO. 61428   Date 2017/06/25

COY#	SURNAME	INITIAL	ID NUMBER	CERTIFICATE	CERTIFICATE EXPIRY	MEDICAL EXPIRY	PROP EXPIRY	ASSESSOR	SITE	SAFETY CO-ORDINATOR	COMMENTS
N/A	ANSOUMANE	DOUMBOUYA		tyre fitting certificate	VALID	YES	2025	GVNT	GAC HOUSING	Tho Moreira	
N/A	ANSOUMANE	CAMARA		OPP LICENSE	VALID	YES	2019	GVNT	GAC HOUSING	Tho Moreira	
N/A	MAMADOU OURY	SOW		OPP LICENSE	VALID	YES	2019	GVNT	GAC HOUSING	Tho Moreira	
N/A	DAVID	MINA		OPP LICENSE	VALID	YES	2021	GVNT	GAC HOUSING	Tho Moreira	
N/A	Yaya	Kone		OPP LICENSE	VALID	YES	2022	GVNT	GAC HOUSING	Tho Moreira	
N/A	MAMADOU ALIOU	SOW		OPP LICENSE	VALID	YES	2021	GVNT	GAC HOUSING	Tho Moreira	
	MURADI	L		SHEQ Higher Diploma, International relations	VALID	20/01/2018		GVNT	GAC HOUSING	Tho Moreira	
	ABABIO	K		LEAGAL LIABILITY	VALID	20/01/2019		GVNT	GAC HOUSING	Tho Moreira	
	DIALLO	M		LEAGAL LIABILITY	VALID	20/01/2020		GVNT	GAC HOUSING	Tho Moreira	
	BAMBA	J		LEAGAL LIABILITY	VALID	20/01/2021		GVNT	GAC HOUSING	Tho Moreira	
	TOUREY	K		LEAGAL LIABILITY	VALID	20/01/2022		GVNT	GAC HOUSING	Tho Moreira	
	DIALLO	I		LEAGAL LIABILITY	VALID	20/01/2023		GVNT	GAC HOUSING	Tho Moreira	
	TUNKARA	I		LEAGAL LIABILITY	VALID	20/01/2024		GVNT	GAC HOUSING	Tho Moreira	
	MORY	Komara		OPP LICENSE	VALID	20/05/2025		GVNT	GAC HOUSING	Tho Moreira	
	MAMADOU	Barry		OPP LICENSE	VALID	20/01/2026		GVNT	GAC HOUSING	Tho Moreira	
	ALPHA	KALIMA		OPP LICENSE	VALID	20/03/2027		GVNT	GAC HOUSING	Tho Moreira	
	ELLEN	ADOUPARKO		MASTERS	VALID	20/01/2025		GVNT	GAC HOUSING	Tho Moreira	
	SEAN	O'CONNOR		CIVIL CERTIFICATE	VALID	20/01/2028		GVNT	GAC HOUSING	Tho Moreira	
	Randolf	Aneran		Survey degree	VALID	20/01/2030		GVNT	GAC HOUSING	Tho Moreira	
	Mahar pasty Gbetome	BAMBA		CIVIL CERTIFICATE	VALID	20/01/2031		GVNT	GAC HOUSING	Tho Moreira	
	MOUSSA	KOUROUMA		CIVIL CERTIFICATE	VALID	20/01/2032		GVNT	GAC HOUSING	Tho Moreira	
	Raymond	Duska		SURVEY degree	VALID	20/01/2033		GVNT	GAC HOUSING	Tho Moreira	
	Seraphin	Lamah		survey degree	VALID	20/01/2034		GVNT	GAC HOUSING	Tho Moreira	
	Leonard	Tungacha		mechanic	VALID	20/01/2035		GVNT	GAC HOUSING	Tho Moreira	
	Mamadou Bhoye	Barry		Recth plant	VALID	20/01/2036		GVNT	GAC HOUSING	Tho Moreira	
	Toure	Sekou Abdoulaye		Diploma safety	VALID	20/01/2037		GVNT	GAC HOUSING	Tho Moreira	

WBHO

SITE COMPETENCY REPORT

Site Name AHAFO PROJECT   Contract NO. 61461   Date 28/07/2017

COY#	SURNAME	INITIAL	ID NUMBER	CERTIFICATE	CERTIFICATE EXPIRY	MEDICAL EXPIRY	PROP EXPIRY	ASSESSOR	SAFETY CO-ORDINATOR	COMMENTS
REDCROSS/NGGL/16/SN1	ADDAI	A.E	350211	Senior First Aid Course	20-06-2018	Dec-17	19 11 2017	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC1	AFREH	A.A	WBHO AC131	Basic emergency First Aid Course	20-06-2018	May-18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC2	ANTWI	A. D	C124068	Basic emergency First Aid Course	20-06-2018	May-18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC3	Baidoo	B. F	WBHO AC749	Basic emergency First Aid Course	20-06-2018	May-18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC4	JISON	N. N	128977	Basic emergency First Aid Course	20-06-2018	May-18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC5	OPOKU	O. T	128061	Basic emergency First Aid Course	20-06-2018	May-18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC6	AGANA	A. N	10010108	Basic emergency First Aid Course	20 06 2018	Jul-17	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC7	BOATENG	B. K	10004999	Basic emergency First Aid Course	20-06-2018	May-18	N/A	RED-CROSS GHANA	T Moreira	
SJAG/BEFA/CO71/14	Bawa	S.B.B	10003407	Basic emergency First Aid Course	25/05/2017	May-18	12 12 2017	St. John Ghana	T Moreira	
SJAG/BEFA/0064/14	Turkson	P.T	C127344	Basic emergency First Aid Course	25/05/2017	May 18	16-08 2018	St. John Ghana	T Moreira	
SJAG/BEFA/0061/14	Fabea	J.E.T	C300202	Basic emergency First Aid Course	25/05/2017	May-18	N/A	St. John Ghana	T Moreira	
REDCROSS/NGGL/16/BC8	OKWAN	S.O	C124190	Basic emergency First Aid Course	26/09/2018	May-18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC9	OWUSU	C.O.B	WBHO AC918	Basic emergency First Aid Course	26/09/2018	May 18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC10	BOAYYE	S.B	WBHO AC120	Basic emergency First Aid Course	26/09/2018	Jun-18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC11	ABOABYE	A.O.A	WBHO AC387	Basic emergency First Aid Course	26/09/2018	May-18	N/A	RED-CROSS GHANA	T Moreira	
REDCROSS/NGGL/16/BC12	OSEI	O.S	10016673	Basic emergency First Aid Course	26/09/2018	Aug-17	N/A	RED-CROSS GHANA	T Moreira	

WBHO

SITE COMPETENCY REPORT

Site Name: Siguiri — Contract NO.: 61463 — Date: Jul-17

COY	SURNAME	INITIAL	ID NUMBER	CERTIFICATE	CERTIFICATE EXPIRY	MEDICAL EXPIRY	PROP EXPIRY	ASSESSOR	SITE	SAFETY CO-ORDINATOR	COMMENTS
WBHO	[illegible]	Raymond	[illegible]	Site Manager	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	Craig	[illegible]	Site Agent	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Site Agent	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Safety Manager	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	Martin	[illegible]	Supervisor	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Surveyor	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Supervisor	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	Solomon	[illegible]	Supervisor	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]		Driver	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	S. Ahmed	[illegible]	Admin Assistant	-	[illegible]	n/a		Office	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Quantity Surveyor	-	[illegible]	n/a		Office	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Re-bar Manager	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Quality engineer	-	[illegible]	n/a		Office	[illegible]	-
WBHO	[illegible]	Henry	[illegible]	Batch Plant Manager	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Crane Operator	[illegible]	[illegible]	n/a	[illegible]	[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]		Human Resources	-	[illegible]	n/a		Office	[illegible]	-
WBHO	[illegible]	Headman	[illegible]	Supervisor	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Mechanic	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Project Admin	-	[illegible]	n/a		Office	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Surveyor	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	[illegible]	[illegible]	[illegible]	Safety officer	-	[illegible]	n/a		[illegible]	[illegible]	-
WBHO	CAMARA FODE	SOULEYMANE	WB4900	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	MAMADI	WB4901	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	YOUSSOUF	WB4902	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	AMADI	WB4903	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	SEKOUBA	WB4904	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	[illegible]	WB4905	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	ADAMA	WB4906	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	MORIBA	WB4907	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	KEITA	SEYOU	WB4908	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	[illegible]	WB4909	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	ABOU	WB4910	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	TOUMANY	WB4911	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	KEITA	ABOU	WB4912	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	KARAMO	WB4913	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	MAMADI CELLOU	WB4914	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	KEITA	SOULEYMANE	WB4915	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	KEITA	ABOU	WB4916	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	KEITA	BALLA	WB4917	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	KONATE	SOULEYMANE	WB4918	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	DOUMBOUYA	LAYE	WB4919	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	DOUMBOUYA	MOHAMED LAMI	[illegible]	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CONDE	BOUBACAR	[illegible]	General worker	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	OLEA	RODRIGUEZ HU	WBCPE 024	FOREMAN CONCR	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	[illegible]	CESAR VILLARR	WB CPE 075	FOREMAN CONCR	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	PRIMO BNAVENT	POTAIN	WB CPE 033	FOREMAN FORMW	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	PASCUALITO	AURELIO	WBCPE 032	CONCRETE FOREM	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	AGUBAR	FERNANDO	WBC PE 031	SUPERVISOR	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	SAGARIO	ARTURO DAGPR	WBCPE 027	CONCRETE FOREM	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	DE LAMA	RAYMUNDO	WB CPE 078	FOREMAN	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	ACEDILLA	ERNESTO FARIN	WB CPE 079	FOREMAN	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	MAMOUDOU	CISSE	WB CPE 037	DRIVER	-	[illegible]	n/a		Not yet allocated	[illegible]	-
WBHO	CAMARA	ABOUBACAR DE	WB CPE 038	DRIVER	-	[illegible]	n/a		Not yet allocated	[illegible]	-

EQUIPMENT, SMALL POWER TOOLS, VEHICLES AND PLANT PER SITE - Register / CHECK LIST

[illegible]

EQUIPMENT, SMALL POWER TOOLS, VEHICLES AND PLANT PRE SITE - Register / CHECK LIST

NAME OF CONTRACT: NATOUGOU GOLD PROJECT
DATE UPDATED: July 2017
NAME OF INSPECTOR: Lucas Briedenhann
DESIGNATION: Site Safety Manager

No	WBHO Foreman Name / Contractor Name	Equipment	Serial Number	Identification Number	Is Equipment safe/ Numbered and on Register? Yes	No	Comments
1	A. Engelbrecht	Crane			Yes		
2	A. Engelbrecht	Hiab		11JP252	Yes		
3	A. Engelbrecht	Concrete Mixer Truck		11JG882	Yes		
4	A. Engelbrecht	TLB			Yes		
5	A. Engelbrecht	TLB			Yes		
6	A. Engelbrecht	Water bowser		11WP2178	Yes		
7	A. Engelbrecht	Bus		11WM212	Yes		
8	A. Engelbrecht	Bus			Yes		
9	A. Engelbrecht	Toyota LDV 4 x 4 DCab			Yes		
10	A. Engelbrecht	Toyota LDV 4 x 4 DCab			Yes		
11	A. Engelbrecht	Toyota LDV 4 x 4 DCab			Yes		
12	A. Engelbrecht	Toyota LDV 4 x 4 DCab			Yes		
13	A. Engelbrecht	Toyota LDV 4 x 4 DCab			Yes		
14	A. Engelbrecht	Toyota LDV 4 x 4 DCab			Yes		
15	A. Engelbrecht	Concrete Mixer Truck			Yes		
16	A. Engelbrecht	Concrete Mixer Truck			Yes		
17	A. Engelbrecht	Pickup	WBHOPIC 01-12		Yes		
18	A. Engelbrecht	Sherpa	WBHOSHV		Yes		
19	A. Engelbrecht	Pillars	WBHOPIL 01-05		Yes		
20	A. Engelbrecht	Yanmars	WBHOYAN 01-05		Yes		
21	A. Engelbrecht	Chisels	WBHOCH 01		Yes		
22	A. Engelbrecht	Rakes	WBHORAK 01-08		Yes		
23	A. Engelbrecht	Hand Saw	WBHOSW 01-05		Yes		
24	A. Engelbrecht	Iron Bins	WBHOBIN 01-05		Yes		
25	A. Engelbrecht	Crusher Saw	WBHOCS 01-03		Yes		
26	A. Engelbrecht	Ladder	WBHOLADDER 01		Yes		
27	A. Engelbrecht	Wheelbarrow	WBHOWHEEL 01-08		Yes		
28	A. Engelbrecht	Spanners	WBHOSP BOX1 - Box2		Yes		
29	A. Engelbrecht	Grinders	WBHOGR 01-02		Yes		
30	A. Engelbrecht	Drills	WBHODR 01-03		Yes		
31	A. Engelbrecht	Generators	WBHOGEN 01-02		Yes		
32	A. Engelbrecht	Workers Barrow	WBHOWKA 01		Yes		
33	A. Engelbrecht	Water Pump	WBHOWATERP 01		Yes		
34	A. Engelbrecht	Water Compactor	WBHOROLL 01		Yes		
35	A. Engelbrecht	Vibrator	WBHOVIB01-02		Yes		
36	A. Engelbrecht	Clamp Levels	WBHOLEVO1-04		Yes		
37	A. Engelbrecht	Measure Tapes	WBHOTP01-08		Yes		
38	A. Engelbrecht	Bowlers	WBHOBRUE1-04		Yes		
39	A. Engelbrecht	Trowlers Steel	WBHOBRUE1-05		Yes		
40	A. Engelbrecht	Extenders	WBHOEXT01-05		Yes		
41	A. Engelbrecht	Trowels	WBHOTRO1-05		Yes		
42	A. Engelbrecht	Safety Harnesses	1 to 150		Yes		

EQUIPMENT, SMALL POWER TOOLS, VEHICLES AND PLANT PRE SITE - Register / CHECK LIST

NAME OF CONTRACT: GAC Housing Project
DATE UPDATED: 17-Jul
NAME OF INSPECTOR: L Muradzi
DESIGNATION: Site Safety Manager

No	WBHO Foreman Name / Contractor Name	Equipment	Serial Number Number plate	Identification Number Plant number	Is Equipment safe/ Numbered and on Register? Yes	No	Comments
1.	WBHO GAC HOUSING	LAND CRUISER	AHK 650	K7 08	Yes		WORKSHOP
2.	KAMBAR	GRADER		3080	Yes		WORKSHOP
3.	BELIKINDI	DOZER		D052	Yes		WORKSHOP
4.	BELIKINDI	CRANE TRUCK		K078	Yes		WORKSHOP
5.	BELIKINDI	WATER BWSER		W083	Yes		WORKSHOP
6.	BELIKINDI	SERVICE TRUCK		K711	Yes		WORKSHOP
7.	BELIKINDI	FUEL BWSER		K717	Yes		WORKSHOP
8.	KAMBAR	ROLLER		R152	Yes		WORKSHOP
9.	BELIKINDI	LOADER		L044	Yes		WORKSHOP
10.	BELIKINDI	CONCRETE DUMPER		1	Yes		SITE ASSET
11.	KAMBAR	CONCRETE DUMPER		2	Yes		SITE ASSET
12.	BELIKINDI	LIGHTING PLANT		1	Yes		SITE ASSET
13.	BELIKINDI	LIGHTING PLANT		2	Yes		SITE ASSET
14.	KAMBAR	LIGHTING PLANT		3	Yes		SITE ASSET
15.	BELIKINDI	200 GENERATOR		WBHO 1	Yes		SITE ASSET
16.	BELIKINDI	GENERATOR			Yes		SITE ASSET
17.	KAMBAR	GENERATOR					SITE ASSET
18.	KAMBAR	PEDESTRIAN ROLLER		1	Yes		SITE ASSET
19.	BELIKINDI	CONCRETE FLOATER		1	Yes		SITE ASSET
20.	BELIKINDI	WELDING MACHINE		1	Yes		WORKSHOP
21.	KAMBAR	TLB	1				HIRED
22.	BELIKINDI	TLB	1				SITE ASSET
23.	BELIKINDI	HIRED BUCKIES	7				WBHO
24.	KAMBAR	HIRED BUCKIES	4				HIRED
25.	BELIKINDI	DRILL	6				SITE ASSET
26.	BELIKINDI	BAGRINDER	5				SITE ASSET
27.	BELIKINDI	POKER	7				SITE ASSET
28.	BELIKINDI	VIBRATOR	6				SITE ASSET
29	BELIKINDI	5L GENERATOR	1				SITE ASSET
30.	BELIKINDI	TRAVELL MACHINE	1				SITE ASSET
31.	BELIKINDI	AIR COMPRESSOR	2				SITE ASSET
32.	BELIKINDI	PLATE COMPACTOR	2				SITE ASSET
33.	BELIKINDI	3T DUMPERS					SITE ASSET

EQUIPMENT, SMALL POWER TOOLS, VEHICLES AND PLANT PRE SITE - Register / CHECK LIST

NAME OF CONTRACT: Adamus Resources - Nzema Project
DATE UPDATED: July 2017
NAME OF INSPECTOR: Michael Asamoah
DESIGNATION: Site Safety Officer

Plant List

Date	Item Description	Plant No		Owner		Mobilization		Status	Reason for Breakdown	Comments
		WBHO	ADAMUS	WBHO	External	Planned	Actual			
25-Jun-2017	Loading Units									
	Cat 330 Excavator	330DL	E330DL	Hired	[illegible]	On Site	On Site	OK		
	Cat 330 Excavator	EX 04	E330 CL	Hired	Stankline	On Site	On Site	OK		
	Cat 330 Excavator	MD/EX01	E330DL	Hired	Cashklem	On Site	On Site	OK		
	[illegible] Excavator	D/EX01	330 1C DTC	Hired	Quantum	On Site	On Site	OK		
	Hauling Units									
	Cat 740 ADT	J497	J497	Y	-	On Site	On Site	OK		
	Cat 740 ADT	J498	J498	Y	-	On Site	On Site	OK		
	Cat 740 ADT	J423	J423	Y	-	On Site	On Site	Off Hired		
	Tipper Truck (White)	J428	GN 5503-15	Y	-	On Site	On Site	OK	-	
	Tipper Truck (White)	J446	GN 6137-11	Y	-	On Site	On Site	OK		
	Tipper Truck (White)	J447	GN 6141-11	Y	-	On Site	On Site	OK		
	Tipper Truck (White)	J430	GN 5564-15	Y	-	On Site	On Site	OK		
	Tipper Truck (White)	J431	GN 5547-15	Y	-	On Site	On Site	OK		
	Tipper Truck (Yellow)	HT01	GT 6685-16	Hired	Quantum	On Site	On Site	OK		
	Tipper Truck (Yellow)	HT02	GT 6686-16	Hired	Quantum	On Site	On Site	OK		
	Tipper Truck (Blue)	NT02	GN 2626-14	Hired	Exceeder	On Site	On Site	OK		
	Tipper Truck (White)	MD05	GN 1223-15	Hired	Cashklem	On Site	On Site	OK		
	Tipper Truck (Blue)	MD01	WR 1864-16	Hired	Cashklem	On Site	On Site	OK		
	Tipper Truck (White)	MD03	WR 273-15	Hired	Cashklem	On Site	On Site	OK		
	Tipper Truck (White)	MD04	WR 958 17	Hired	Cashklem	On Site	On Site	OK		
	Tipper Truck (Red)	MD02	WR 1719-15	Hired	Cashklem	On Site	On Site	OK		
	Dozers									
	D8 CAT	D064	D8R	Y	-	On Site	On Site	OK		
	D7 CAT	DZ07	D7H	Hired	Nimalakat	On Site	On Site	OK		
	D7 CAT	D7H/02	D7H	Hired	EES	On Site	On Site	OK		
	D6 CAT	DZ06	D6H	Hired	Stankline	On Site	On Site	OK		
	Graders									
	140K Cat Grader	G099	G099	Y	-	On Site	On Site	Off Hired		
	[illegible]	G106	G106	Y	-	On Site	On Site	OK		
	Rollers									
	[illegible]	R143	R143	Y	-	On Site	On Site	OK		
	[illegible]	R144	R144	Y	-	On Site	On Site	OK		
	Cat Roller Pad Foot	R151	R151	Y	-	Off Site	On Site	Off Hired		
	Dynapac Roller [illegible]	R 04		Hired	Rigel	On Site	On Site	OK		
	[illegible] Roller [illegible]	VR02	VR02	Hired	Quantum	On Site	On Site	OK		
	Watercarts									
	740 ADT Watercart 2[illegible]	W098	W098	Y	-	On Site	On Site	Off Hired		
	[illegible]	WB 01	GM 3796-13	-	Exceeder	On Site	On Site	OK		
	JCB TLB	TLB 01	WR 1914-16	Hired	Jonisco	On Site	On Site	Off Hired		
	[illegible]	K799	GT 3254-13	Y	-	On Site	On Site	OK		
	Service Truck	K746	GN 9479-13	Y	-	On Site	On Site	OK		
	Gen Set			Y	-	On Site	On Site	OK		
	LDV									
	Toyota Hilux	HD159	GT 8551-11	Y	-	On Site	On Site	OK		
	Toyota Hilux	HD 167	GT 9840-11	Y	-	On site	On Site	OK		
	Toyota Hilux	HD 169	GN 2184-11	Y	-	On site	On Site	OK		
	Toyota Hilux	HD 170	GN 7824-11	Y	-	On site	On Site	OK		
	Toyota Hilux	HD 172	GN 7916-11	Y	-	On site	On Site	OK		
	Toyota Hilux	F794	GC 7904-17	Y		On site	On Site	OK		
	Toyota Hilux	GW 3779-17	GW 3779-17	Hired	Kaye Dust	On site	On Site	OK		
	Bus (Hyundai)	BS 01	GT 8630-17	Hired	Jonisco	On site	On Site	OK		
	Bus (Hyundai)	BS 02	WR 593-17	Hired	Jonisco	On site	On Site	Off Hired		
	Bus (Nissan)	BS 03	WR 3591-13	Hired	Kaye Dust	On Site	On Site	OK		

WBHO

SITE COMPETENCY REPORT

Site Name: Siguiri   Contract NO. 61453   Date: Jul-17

COY?	SURNAME	INITIAL	ID NUMBER	CERTIFICATE	CERTIFICATE EXPIRY	MEDICAL EXPIRY	PROP EXPIRY	ASSESSOR	SITE	SAFETY CO-ORDINATOR	COMMENTS
WBHO	McAlee	[illegible]	[illegible]	Site Manager	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	Freeman	Craig	[illegible]	Site Agent	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	Kaja	[illegible]	Site Agent	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	Ephraim	[illegible]	Safety Manager	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	De	[illegible]	[illegible]	Supervisor	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]	[illegible]	Surveyor	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	Wiseman	[illegible]	Supervisor	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	Sebastian	[illegible]	Supervisor	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]		Driver	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	B. Ahmed	[illegible]	Admin Assistant	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	Nagel	Beverly	[illegible]	Quantity Surveyor	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	Patrick	[illegible]	Project Manager	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]	[illegible]	Quality engineer	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	Henry	[illegible]	Batch Plant Manager	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]	[illegible]	Crane Operator	[illegible]	[illegible]	n/a	[illegible]	[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]		Human Resources	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]	[illegible]	Supervisor	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]	[illegible]	Mechanic	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]	[illegible]	Project Admin	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]	[illegible]	Surveyor	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	[illegible]	[illegible]	[illegible]	Safety officer	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA FODE	SOULEYMANE	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	MAMADI	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	YOUSSOUF	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	[illegible]	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	[illegible]	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	SACKO	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	ADAMA	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	MORIBA	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	KEITA	SEKOU	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	[illegible]	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	ABOU	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	TOUMANY	WB4011	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	KEITA	ABOU	WB4012	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	KARAMO	WB4013	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	MAMADI [illegible]	WB4014	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	KEITA	SOULEYMANE	WB4015	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	KEITA	ABOU	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	KEITA	BALLA	WB4017	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	KONATE	SOULEYMANE	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	DOUMBOUYA	LAYE	WB4019	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	DOUMBOUYA	MOHAMED LAMI	WB4024	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CONDE	BOUBACAR	[illegible]	General worker	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	OLEA	RODRIGUEZ NU[illegible]	WBCPE 024	FOREMAN CONCR	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CORONACTION	CESAR VILLASR	WB CPE 025	FOREMAN CONCR	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	PRIMO BENAVEN	POTAIN	WB CPE 023	FOREMAN FORMW	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	PASCUALITO	AURELIO	WBCPE 032	CONCRETE FOREM	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	AGUIAR	FERNANDO	WBC PE 031	SUPERVISOR	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	SAGAIDO	ARTURO GAGPI	WBCPE 027	CONCRETE FOREM	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	DE LAMA	RAYMUNDO	WB CPE 029	FOREMAN	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	ACEDILLA	ERNESTO FAB	WB CPE 029	FOREMAN	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	MAMOUDOU	CISSE	WB CPE 077	DRIVER	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]
WBHO	CAMARA	ABOUBACAR DE	WB CPE 076	DRIVER	[illegible]	[illegible]	n/a		[illegible]	[illegible]	[illegible]

1. PURPOSE

To establish minimum requirements and guidelines to provide maximum prevention/protection against falls from elevation and a minimum standard of training necessary to ensure personnel understanding and compliance with the program. The goal is to achieve 100% fall prevention/protection for all personnel exposed to potential falls.

2. ROLES/RESPONSIBILITIES

- **Project Management and Front Line Supervision.**
  Support and enforce this program to ensure 100% compliance by all personnel.

- **Safety Department**
  Supports the program and assists in any training deemed necessary to ensure personnel have sufficient understanding of the program for successful compliance.

- **Competent Person**
  It is the responsibility of the fall protection planner to assess and compile a fall protection Plan All work conducted at elevated positions will be supervised by a competent Supervisor.

- **Implementation, Amendments and Maintenance**
  - The Project Manager shall ensure that he appoints in writing a responsible person
  - The Site Supervisor / Manager under supervision of the Fall Protection Planner, is responsible to ensure that a complete Risk Assessment is conducted on all activities required for working at heights to ensure the Fall Protection Plan can be incorporated into the assessment.
  - The implementation of this Fall Protection Plan will be the responsibility of the Site Manager during the initial time work at height commences on the project.
  - Any amendments and / or maintenance to this plan are the responsibility of the Site Manager in collaboration with the Fall Protection Planner.

- **Adherence to the Fall Protection Plan**
  Personnel who are engaged in Work at Heights are required to adhere to the requirements of the Fall Protection Plan.

3. DEFINITIONS

- ANCHORAGE - A secure point of attachment for lifelines, lanyards, or deceleration devices.
- BARACADING - is defined as a physical barrier that prevents inadvertent access to an area.
- COMPETANT PERSON – Means any person having the knowledge, training, experience and qualifications specific to the wok or task being performed. Provided that where appropriate qualifications and training are registered in terms of the South African Qualifications Authority Act 1995 (Act No 58 of 1995) these qualifications and training shall be deemed to be the required qualifications and training.
- BUCKLE – Any device for holding the full body harness with double lanyards closed around the employee's body.
- BANKSMAN – is a person empowered to apply slinging techniques, including the selection and inspection of lifting accessories and directing the crane operator in the movement of the load, including when the load is out of the operator.
- CONNECTOR - A device that is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabineer, or it may be an integral component of the system (such as a buckle or D-ring sewn into a full body harness, or a snap hook spliced or sewn to a lanyard or retractable lifeline).
- CRANE – means any powered device intended for raising and lowering a load and moving it horizontally.
- CRANE CHART RATED CAPASITY – means the lifting capacity of the crane at a given boom length, boom angle, radius, outrigger configuration and boom orientation as defined in accordance with AS 1418 pt5 and AS 2550 and in accordance with the crane manufacturers recommendations.

- DANGEROUS EQUIPMENT - Equipment (such as machinery, electrical equipment, and other units) that, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.
- DECELERATION DEVICE - Any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyard, automatic self-retracting lifelines, etc., that serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.
- DEMARCATION – Is defined as any method that indicates that an area is used for a specific purpose, or that access is restricted.
- DECELERATION DISTANCE - The additional vertical distance a falling employee travels, excluding the lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's full body harness attachment point (D-ring) at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.
- EXTERNAL RATED CAPACITY LIGHTING – refers to clearly visible green, amber and red lights mounted externally to the crane, green to indicate safe operating range, amber when approaching maximum rated capacity and red when maximum rated capacity has been exceeded.
- FAILURE - Load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.
- FALL RESTRAINT – means an approved device and any necessary components that function together to restrain a person in such a manner as to prevent that person from falling to a lower level.
- FALL PREVENTION – means the design and use of a fall prevention system such that no exposure to an elevated fall hazard occurs. This may require more than one fall prevention system or a combination of prevention or protection measures.
- FALL ARREST SYSTEM – means the use of multiple, approved safety equipment components such as body harness, lanyards, declarations devices, drop lines, horizontal and / or vertical lifelines and anchorages, interconnected and rigged as to arrest a free fall.
- FREEFALL - The act of falling before a personal fall protection system begins to apply force to arrest the fall.
- FREEFALL DISTANCE - The vertical displacement of the fall protection attachment point on the employee's full body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.
- FULL BODY HARNESS - Straps that may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.(Construction Regulation 8(c)(i)(ii)(e)(f)
- FIXED LANYARD – Is a line used as part of a lanyard assembly to connect a harness to an anchorage point or a static line in situations where there is risk of a fall.
- GUARDRAIL SYSTEM - A barrier erected to prevent employees from falling to lower levels.
- HOLE - A gap or void fifty millimeters (50mm) or more in its least dimension in a floor, roof, or other walking/working surface.
- LANYARD - A flexible line of wire rope or nylon strap that generally has a connector at each end for connecting a full body harness to a deceleration device, lifeline, or anchorage.
- LEADING EDGE - The edge of a floor, roof, or formwork for a floor or other walking/working surface (such as a deck) that changes location as additional floor, roof, decking, or formwork sections are placed forme constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it i not actively and continuously under construction.
- LIFELINE - A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and that serves as a means for connecting other components of a personal fall protection system to the anchorage.
- LIFTING CREW – are persons working directly with a crane operation?
- LIFTING OPERATIONS – means any operation using a crane and lifting equipment that involves the raising and lowering of a load including the suspension of a load
- LIFTING EQUIPMENT - refers to any device which is used or designed to be used directly or indirectly to connect a load to a crane and which does not form part of a load.

- LOW SLOPE ROOF - A roof having a slope less than or equal to 4 in 12 (vertical to horizontal).
- LOWER LEVELS - Those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.
- MECHANICAL EQUIPMENT - All motor or human propelled wheeled equipment used for roofing work.(bolting rig)
- OPENING - A gap or void 750mm or more high and 450mm or more wide, in a wall or partition, through which employees can fall to a lower level.
- PERSONAL FALL PROTECTION SYSTEM - A system used to arrest an employee in a fall from a working level. It consists of anchorage, connectors, a full body harness, a shock-absorbing lanyard and may include a deceleration device, lifeline, or suitable combinations of these.
- POSITIONING DEVICE SYSTEM - A body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning. These system must prevent fall potential of greater than one meter (1m) and be supported with a secured personal fall protection system.
- PRIMARY FALL PREVENTION - Elimination of fall exposures through use of guardrail systems, aerial lifts, scaffolds or alternate work methods such as pre assembly at ground level.
- ROOF - The exterior surface on the top of a building. This does not include floors or form work that, because a building has not been completed, temporarily becomes the top surface of a building.
- ROOFING WORK - The hoisting, storage, application and removal of roofing materials and equipment including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.
- ROPE GRAB - A deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking cam/level locking, or both.
- SECONDARY FALL PROTECTION - Utilization of fall arrest equipment as a backup to primary fall prevention systems or in the absence of primary fall prevention systems.
- SELF RETRACTING LIFELINE/LANYARD - A deceleration device containing drum wound line that can be slowly extracted from or retracted onto the drum under slight tension during normal employee movement, and that, after onset of a fall, automatically locks the drum and arrests the fall.
- SNAPHOOK - A connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, that may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. The locking type with a self-closing keeper that remains closed and locked until unlocked and pressed open for connection is the only authorized snap hook. Non-locking snap hooks are expressly forbidden for fall prevention/protection purposes.
- STEEP ROOF – A roof having a slope greater than 4 in 12 (vertical to horizontal).
- SUSPENSION TRAUMA – Is the effect that can occur when a person's legs are immobile in an upright posture for a prolonged period, after an arrested fall with a fall arrested system. The person is suspended and caught in an upright, vertical position and the harness straps cause pressure on the leg veins. The blood flow to the heart is reduced, resulting in fainting, restriction of movement or loss of consciousness. This may lead to renal failure and eventually death, depending on a person's susceptibility. The condition may be worsened by heat and dehydration.
- TOEBOARD - A low protective barrier (minimum of 90mm in vertical height from their top edge to the walking/working surface and no more than 6mm clearance above the walking/working surface), that will prevent the fall of materials and equipment to lower levels and provide protection from falls to personnel.
- UNPROTECTED SIDES AND EDGES - Any side or edge (except entrances to points of access) of a walking/working surface, e.g., floor, ramp, or runway where there is no wall or guardrail system at least 900mm high.
- WALKING/WORKING SURFACE - Any surface, whether vertical or horizontal on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, form work and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located to perform their duties.
- WARNING LINE SYSTEM - A barrier erected on a low pitch roof, to warn employees that they are approaching an unprotected side or edge, and that designates an area in which roofing work may take place

without the use of a guardrail, full body harness, or safety net systems to protect employees within that enclosed area.

- WORK AREA - The portion of a walking/working surface where job duties are being performed.
- WORK BASKET – refers to a personnel-carrying device designed to be suspended from a crane.

4. LEGAL REQUIREMENT

The fall protection plan has been compiled related to the following Legislations / Standards / Best Practices

1) Occupational Health and Safety Act
2) Client Health and Safety Specifications
3) Construction Regulations
4) SANS 10085

Every contractor performing construction work shall before the commencement of any construction work and during construction work,

1) Cause a risk assessment to be performed by a competent person appointed in writing
2) A risk assessment shall form part of the health and safety plan to be applied on site
3) Risk assessment will form part of documentation that functions as
   - Identification of the risk / hazard to which persons may be exposed to
   - Analysis and evaluation of the risk / hazards identified
   - Safe work procedures to mitigate, reduce or control the risk and hazards that have been identified
   - A monitoring plan
   - Review plan

Each project will ensure that a copy of the risk assessments is available on site for inspections by an inspector / client.WBHO will further ensure that all employees under his control are informed, instructed and trained by a competent person.

5. RISK ASSESMENTS

Is a systematic method of looking at work activities, considering what could go wrong, and deciding on suitable measures to prevent loss, damage or injury in the work place? The assessment should include the controls required to eliminate, reduce or minimize the risks. Hazards and risks are reviewed whenever processes, people, or natural circumstances change.

Risk assessments will be conducted on all elevated positions

Risk assessments shall be conducted for work in the following areas pertaining to the scope of works, however this is not limited.

- Platforms
- Walkways and ramps
- Floor Openings
- Wall Openings
- Pipe Racks and Skeletal Steel
- Scaffolds
- Ladders
- Extensions
- Step
- Roofs
- Vertical Walls
- Reinforcing steel work
- Concrete form installation

- Excavations
- Pits, Shafts and Manholes
- Equipment (crane booms, maintenance, etc.)

6. DSTI

DSTI is given to each person assigned work in elevated areas or in areas that present any possibility of falls. Supervisors shall analyze all tasks for their individual fall potential and then ensure that adequate fall prevention/ protection systems are in place, prior to any work beginning. Supervisors will actively question their employees' knowledge of the system being utilized, its proper methods of use, and emergency procedures associated with the task.

7. METHOD STATEMENTS / SAFE WORK PROCEDURES

Method statements and Safe work procedures will be prepared subject to the level of risk and as defined in the risk assessments, this normally referred to the site functions and job task steps to be taken during an activity.

Weekly Toolbox talks / awareness must be communicated to employees on safety procedures and Health and Safety documentation

8. SITE ACTIVITIES

8.1 STRUCTURAL STEEL ERECTION

Personnel erecting skeletal steel structures shall maintain 100% fall prevention/protection through the use of personal fall protection systems, retractable lifelines, connector toggles, and aerial lifts (JLG, Snorkel, etc.).

Access to structural steel shall be obtained by use of ladders, aerial lifts, or other approved personnel hoisting devices. Climbing of structural steel members such as columns and diagonal braces is expressly forbidden.

Prior to and during lifeline system placement, personnel shall crawl (coon) steel members with shock absorbing lanyards secured around said steel members. Retractable lifeline systems secured at elevations above the operation may be used in some situations.

When lanyard lengths longer than 1.8m are required to reach around large steel members the Project Safety Representative or Project Manager/Superintendent shall be contacted for approval of the using of a nylon attachment sling

9. PERSONNEL LIFTS / HOISTING DEVICE

- Aerial Lifts (Cherry Picker etc.)
  Personnel riding in or working from these lifts must secure their safety lanyard to the lift basket at all times.

  Personnel riding in or working from these hoisting devices shall each be provided an independent lifeline and rope grab. The employee's lanyard shall be connected to the rope grab at all times while aloft. The anchorage point for the lifeline must be independent of any anchorage being used to support or suspend the platform.

- Crane Hoisted Personnel Baskets
  Use of these devices shall comply with the safety procedures in the Client's Safety Procedures Manual. Personnel riding in or working from personnel baskets must secure their lanyard to the basket or an overhead attachment point at all times while aloft.

10. ROOFING

10.1 Low Slope Roof Applications

a. No work should be carried out on roofs in poor weather conditions, which poses treat to the safety of employees.

b. Employees engaged in work activities on low slopes roofs, with unprotected sides and edges 1.8m or more above a lower level, shall be provided 100% fall prevention/protection by utilizing guardrail systems, personal fall protection systems, safety net systems, or warning lines.

c. Life lines and safety harnesses should be used and anchor points established as necessary.

d. Suitable and sufficient guardrails or barriers or other means of protection of employees to be provided to prevent form falling on the roof edges.

e. Crawling boards / coverings or other similar support equipment have been provided to be used in such a way that the weight of any person passing across or working on fragile surfaces is safely supported.

10.2 High Slope Roof Applications

Employees engaged in work activities on high slope roofs, with unprotected sides and edges 1.8m or more above a lower level shall be provided 100% fall prevention/protection by guardrail systems, personal fall protection systems, safety net systems, or lifeline systems.

a. Guardrail systems must meet engineered drawing and technical specifications

b. Personal fall protection systems must remain secured at all times while the fall exposure of 1.8m or more is present.

c. The possible placing of safety lines across and over roof working areas to create safe attach points for workers.

d. Employees shall receive DSTI prior to beginning any task located on a high slope roof.

11. EXCAVATIONS

Excavations with straight cut sides and changes in elevation of 1.8m or more shall be provided with fall prevention/protection devices adequate to protect personnel working or traveling adjacent to them. The preferred method for safeguarding this fall exposure is with rigid guardrail systems immediately adjacent to the excavation. Where personnel are required to work immediately adjacent to the excavation and guardrail systems do not provide adequate protection, employees shall be provided fall restraint and/or lifeline systems to which they can secure their safety lanyard/harness.

1. Employees shall remain secured to a lifeline or restraint system when working within 1.8m of an excavation with unprotected sides or edges.
2. Lifeline systems and employee restraint systems shall meet engineered drawing and technical specification prior to use.
3. Demarcation with wire and danger tape (zigzag)
4. General warning signs to be placed in prominent areas.
5. Excavations in public areas must have a physical barrier of 1m high, warning signs and warning lights at night.

6. Excavations to be inspected daily onto a register by appointed Supervisor.
7. Risk assessment on deep excavations to be adhered too.

12. DANGEROUS EQUIPMENT APPLICATION

1. Each employee less than 1.8m above dangerous equipment shall be protected from falling into or onto dangerous equipment by guardrail systems or by equipment guards.
2. Each employee 1.8m or more above dangerous equipment shall be protected from fall potential by guardrail systems, secured personal fall protection systems, safety net systems, or employee restraint systems.
3. Lifeline and restraint systems shall meet Engineered Drawing and Technical Specifications prior to use.

13. SCAFFOLDING / TEMPORARY WORK PLATFORMS (CONSTRUCTION REGULATION 14)

Every effort shall be made to ensure all temporary platforms/walkways are equipped with solid decking free of openings and standards guard rail systems.

1. Personnel working or traveling on temporary elevated platforms shall wear an approved safety harness / lanyard system at all times.
2. Personnel working / traveling on temporary platforms with fall exposure shall secure their lanyards to an anchorage point capable of supporting 3000Kg or designed as part of a complete personal fall arrest system that maintains a safety factor of at least two (2).
3. Personnel working /t raveling on complete temporary platforms, free from deck openings, and equipped with standard guardrails are not required to secure their lanyards if they remain within the confines of the temporary platform and guardrail system.
4. All temporary platforms shall meet engineering and manufactures specifications, prior to any employee usage of the platform.
5. Temporary work platforms shall be inspected daily by Designated Competent Persons prior to use by any personnel. A tag shall be placed on the platform to readily identify the platform as inspected and safe for use.
6. Every temporary work platform shall be provided with a safe means of access/ egress. Retractable lifelines shall be used while ascending or descending access ladders to temporary work platforms or walkways with a fall hazard greater than 3.5 meters.

14. GUARDRAIL SYSTEMS

Guardrail systems are an integral part of many primary fall prevention systems and whenever used, must be constructed with absolute certainty of integrity and structural soundness. Guardrail systems must meet the following minimum requirements:

a) Top rail must be 1m, plus or minus 75mm, above the walking / working surface.

b) Midrails must be installed at a height midway between the top edge of the guardrail system and the walking / working level.

c) Guardrail systems shall be capable of withstanding, without failure, a force of at least 90Kg applied within 50mm of the top edge, in any outward or downward direction at any point along the top edge.

d) When a 90Kg load is applied to the top handrail, it shall not deflect to a height less than 900mm above the walking / working level.

e) Midrails must be capable of withstanding, without failure, a force of at least 65Kg applied in any downward or outward direction at any point along the midrail.

f) If wire rope is used for top rails, it must be flagged at not more than 1,800mm intervals with high visibility material.

g) Anchor points shall be capable of withstanding the applicable load of employee working at height and shall be identified through a risk assessment process and shall then be approved by a competent person prior to any commencement of work

h) Where operations need to gain access to places at height on large structures or plant and machinery and mobile machinery regularly, then access ways should be provided. Ideally these access ways should have hand / guardrails.

i) Where hand / guardrails cannot be installed, then fall restraint or arrest equipment should be considered dependant on the outcome of a risk assessment of each situation.

15. LADDERS

1. Permanent ladders being used to access complete structures where no fall exposure exists, may be ascended / descended without wearing a safety harness / lanyard.
2. Temporary construction ladders shall extend at least 900mm above the upper landing being accessed and be secured against displacement.
3. Temporary construction ladders and portable ladders (e.g., extension ladders, step ladders, etc.) placed for repeated access/egress to elevations with a fall hazard greater than 3.5m shall be equipped with retractable lifelines. Personnel ascending or descending these ladders shall secure the retractable lifeline to their safety harness prior to ladder use.
4. One time access/egress on a portable ladder does not require the use of a retractable lifeline. The following procedure shall be used when a retractable lifeline is not required:
   a. Personnel preparing to perform a new work activity must receive specific TSTI concerning the use of Portable Ladders and associated Fall Protection Techniques
   b. Personnel Ascending Ladders that are not yet secured at the top must have another employee hold the ladder at the bottom until it can be properly secured. This also includes the last trip down after untying the ladder at the top.
   c. Upon reaching the elevation where the work is to be performed, the employee shall secure their Shock Absorbing Lanyard prior to proceeding with the task. The ladder should then be properly secured and the task may begin. When the task is completed, this process should be reversed with the Shock Absorbing Lanyard being the last protective device to be released prior to descent.
   d. Absolutely no objects, tools, or materials are to be carried in hands while ascending / descending ladders.

16. COVERS

Covers for holes in floors, roofs, and other walking/working surfaces shall meet the following requirements:

a. Covers located in roadways and vehicle aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle or piece of equipment expected to cross over the cover.

b. All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.

c. All covers shall be secured when installed to prevent accidental displacement by the wind, equipment, or employees.

d. All covers shall be marked with the words "HOLE COVER - DO NOT REMOVE" to provide adequate warning of the hazard.

e. Only authorized personnel shall be permitted to remove hole covers.

f. Prior to removing covers, the area shall be barricaded to prevent employees from accidentally stepping through an opening.

g. For short duration tasks (single shift), barricade tape may be used to warn employees provided the opening is attended by a monitor at all times. The monitor shall have no other duties.

h. Barricade tape shall be erected a minimum distance of 1.8m from the opening.

17. SUSPENDED PLATFORMS

a) Suspended scaffold must comply with legal requirements.

b) Suspended scaffold must be erected and dismantled according to manufactures and legal requirements.

c) Suspended scaffold must only be utilised by trained workers.

d) Suspended scaffold must be utilised in accordance with the manufacturers' specification

e) Workers must have a full body harness (double lanyard with shock absorber) attached to the platform structure.

f) Workers may not climb out of the platform unless there is a safe structure to exit onto.

g) Suspended scaffold to be inspected daily onto a register by the appointed person.

18. FORMWORK AND SUPPORT WORK

a) Unless a safe working platform can be utilised then workers must have a full body harness (double lanyard with shock absorber) attached to a secure structure or system, to prevent them from falling and to reduce the effect of a fall.

b) Safe access (ladders) must also be provided to the working areas.

c) Scaffold structures to be inspected weekly and after inclement weather by the appointed person.

19. LIFT SHAFTS

1. All lift shaft openings must be have a physical barrier across the opening and at two levels – 500mm and 1000mm (not danger tape alone)
2. Barriers across the openings must be sufficiently secured and strong enough to prevent a person falling through.
3. Contractors working in the shafts must be instructed to replace barricades when removed.
4. Rubble and material must be kept away from all lift shaft openings.

20. EMPLOYEES FITNESS TO WORK AT ELEVATED POSITIONS

a. PHYSICAL AND PSYCHOLOGICAL

All employees who are performing construction work must be in possession of a valid (12 Months) Height certificate of fitness from an Occupational Health Practitioner, whom shall be registered with the Health Professions Council of South Africa. The medical certificates of fitness will be valid for one year and can be used on other construction sites.

b. RECORD KEEPING OF THE ABOVE

All records of medicals and / or Psychological testing shall be kept by the Occupational Practitioner conducting such testing and a copy of the notification from the doctor declaring the personnel fit to work shall be kept on site.

21. FAILURE OF MEDICAL FITNESS TEST

Where a person is declared unfit for his/her duties in respect of failing his medical fitness test, shall be issued with a referral letter to a Doctor and any medical costs to rectify his/her medical condition shall be at the responsibility of the person him or herself.

Where a person is placed on treatment for his / her medical condition, it remains that persons own responsibility to take the medication and to ensure his / her medical condition is rectified before returning to work after the prescribed period as determined by the Medical Practitioner at his / her initial medical examination.

Upon return at work, the employee shall be required to undergo another medical fitness test to determine if his / her medical condition has improved If the person passes the medical fitness test, he / she may return to work.

Persons, who are on chronic medication, shall be re-located to a position that is suitable for his / her medical condition. It is the responsibility of the person who is on treatment to ensure that he / she pays and takes the prescribed medication. Persons who fail to manage their medical condition successfully are placing him and others at risk and this could lead to disciplinary action taken against him or her as contemplated in the Company HR Manual (gross neglect of safety). Such person will be removed from site immediately and shall be held liable for any further costs revolving medical examinations.

No person shall be allowed to work when they are declared unfit for work or when there are any pending medical results.

TRANSGRESSION OF THIS PROCEDURE

Any person / employee who do not comply with this policy will be prevented from working or entering the construction site and any cost which occurs as a result from this action will be for the transgressor's account until he /she complies with the conditions of this procedure. There will be no exceptions made for any person or company. Any Site Agent or Site Manager who choose to override this procedure will do so at his own risk and must be aware that any accident which might occur when a person falls from a heights or Operator who is not medically fit will be his responsibility.

22. PROGRAMMING FOR TRAINING

Projects shall provide specific training for each employee that has the potential to be exposed to a fall hazard.

1. Employees that have the potential to be exposed to a fall hazard shall be trained prior to starting work.
2. Training must be conducted by a competent person designated by the Project Manager / Superintendent and Site Safety Representative.

3. As a minimum training shall include the following:
   a. Client's Fall Prevention Training Program Any fall protection equipment, procedures, or hazards unique to the project that is not included in the Client's Fall Prevention Training Program.
4. Training must be documented with a written certification record and entered into the Client's Training System.
   a. Certification records must include the following information:
      i. Title and summary of the training.
      ii. The identity of the employee(s) trained (name, signature and identification no).
      iii. Date and location of the training (project name, number, and location).
      iv. Name and signature of the competent person that conducted the training.
   b. Personnel performing the training shall be designated in writing with documentation being maintained by the Project OHS Representative.
   c. Personnel performing the training must be qualified in the following areas:
      i. The nature of fall hazards in the work area.
      ii. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection system to be used.
      iii The use and operation of guardrail systems, personal fall protection systems, safety net systems, warning line systems, and other protection to be utilized.
      iv. The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs.
      v. The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.

23. RETRAINING

1. Retraining in Fall Protection must be conducted anytime there is a reason to believe that an employee does not have the necessary knowledge and skills to comply with the Fall Protection / Prevention Program.
2. A Designated Competent Person must conduct re-training.
3. Re-training is required under the following circumstances:
   a Changes in the workplace render previous training obsolete.
   b. Changes in the types of Fall Protection System or Equipment to be used render previous training obsolete.
   c. Observations of inadequacies in an affected employee's knowledge or use of Fall Protection Systems / Equipment indicate that the employee has not retained the requisite understanding or skill.
4. Employee infractions of the Fall Prevention / Protection Program must be documented and the employee retrained in the applicable area of the program violated.
5. Retraining must be documented with a written certification record and entered into the Client's Training System (same requirements as for initial training).

24. FALL PREVENTION/PROTECTION TRAINING PROGRAM

1. INTRODUCTION

a). Falls are the leading cause of work related death in the construction industry.
b). Falls account for 40,000 to 75,000 work related injuries and 60 to 100 fatalities annually.
c). As of January 1, 2000, the use of a body belt for fall arrest is prohibited.
d). As of January 1, 2000, the use of a non-locking snap hook as part of personal fall arrest systems and positioning device systems is prohibited.

2. RECOGNITION OF POTENTIAL FALL HAZARDS

a). Unprotected Sides and Edges
   i) Platforms
   ii) Walkways and ramps
b). Floor Openings
c). Wall Openings
d). Pipe Racks and Skeletal Steel
e). Scaffolds
f). Ladders
   i) Extensions
   ii) Step
g). Roofs
h). Vertical Walls
   i) Reinforcing steel work
   ii) Concrete form installation
i). Excavations
j). Pits, Shafts and Manholes
k). Equipment (crane booms, maintenance, etc.)

25. OPERATIONAL USAGE / TESTING AND MAINTANANCE.

All Fall Arrest Equipment shall be inspected on the proforma provided and shall be inspected by the user on a daily basis before use. Equipment found to be faulty shall be withdrawn from service immediately. Inspection intervals are once every 3 months by an approved service provider and records / certificates of harnesses will be kept on site.

BEFORE USE

1) Check hooks for damage and correct smooth operations
2) Check webbing for tears, nics, abrasion, discoloration, and exposure to chemicals or weld spatter.
3) Check expiring date of harness, shock absorber and lanyard
4) Check all stitches patterns that they are not coming apart
5) Check all hardware for deformation and smooth correct operations
6) Check the log sheet for when last official inspection took place.
7) Check for contamination of webbing and hardware (paint, cement, chemicals and excessive dirt.
8) UV discoloration of webbing may indicate a deterioration of the strength of the webbing.
9) If you are in doubt to the integrity of the inspected harness remove them from service immediately and have them checked by the Manufacturer

WHEN IN USE

1) Lanyards with their shock absorbing element should be attached to either the front or rear harness D – Link
2) Ensure that all anchor points complies with legislation requirements
3) Anchor points to be above the operator and slack in the lanyard is to be kept to a minimum
4) Clearance below an anchor point should be a minimum of 6.5m for a 2 m shock absorbing lanyard to deploy taking in consideration the height of a person estimated at +_1.8m
5) Keep all lanyards away from sharp edges / or objects
6) Do not use harnesses lanyards where certain chemical substances may affect the belt or lanyard material
7) Cleaning of harnesses must be conducted with care by using mild detergent / soap in warm water <40degrees.Allows to dry naturally after cleaning / and avoid excessive heat or sunlight.
8) Safety harnesses must be stored in a dry environment away from direct sunlight or excessive heat.
9) Never modify or try to repair this equipment yourself. This should be send back to the manufacturer for repairs.

INSPECTIONS GUIDELINES

1) Damage to the Shoulder strap (Abrasions, cuts / frayed).
2) Damage to the Secondary strap (abrasions, cuts / frayed).
3) Damage to the Primary (Sit) strap (abrasions, cuts / frayed).
4) Damage to the Thigh strap (Abrasions, cuts / frayed).
5) Damage to lanyards (Abrasions, cuts / frayed).
6) Damage to the back support (Abrasions, cuts / frayed).
7) Damage to the adjustment mechanisms (deformity, rust)?
8) Damage to the fall arrest attachment element (deformity)?
9) Damage to the Buckles (Deformity, rust)?
10) Damage to the seams or stitching of the equipment?
11) Fall arrest equipment checked by a competent person every year?
12) Life line rope in good order (not frayed or visual damaged)?
13) Equipment stored on hooks away from dirt / chemicals?

26. PERSONNEL RESTRAINT SYSTEMS

Restraint systems are designed to restrain movement so that a fall is not possible. The system must have the capacity to withstand at least 1300Kg, or twice the maximum expected force that is needed to restrain the person from exposure to the fall hazard. In determining this force, consideration should be given to site-specific factors such as, but not limited to, the force generated by a person walking, leaning, or even sliding down a steep roof.

Sites shall conduct a process to ensure the selected personnel are fit to work from heights. Specific consideration shall be given to personnel who suffer medical conditions, such as vertigo and epilepsy, as considering the weight of the person using the harness. Not exceeding 135kg

A competency based training program for employees and Supervisors shall be in place, which includes provisions for maintaining competence. All persons engaged in work covered by this Fall Protection Plan shall be adequately trained and assessed for competency.

Behavior based observations shall include activities and tasks associated with working from heights. Any need for additional specific retraining shall incorporate the results of these observations.

27. SECONDARY FALL PROTECTION SYSTEMS

These systems must be worn and used in the absence of Primary Fall Prevention Systems.

28. FULL BODY HARNESS/SHOCK ABSORBING LANYARDS A FULL BODY HARNESS AND SHOCK ABSORBING LANYARD SYSTEM SHALL BE WORN AND SECURED WHERE THERE IS A FALL EXPOSURE OF 2M OR MORE.

1. If the work is located on a permanent structure and no fall potential is created by the work or by the condition of the structure, full body harnesses are not required.
2. If the work is located on a complete scaffold where no fall potential is created by the work or the condition of the scaffold, full body harnesses shall be worn but tie off is not required
3. When accessing a complete permanent structure by climbing a permanent caged ladder, a full body harness is not required.

   NOTE: If at any time an employee is forced to reach, or position any part of their body beyond the plane of the structure's boundaries (i.e. guardrail system), a full body harnesses shall be worn and secured to ensure 100% fall protection.
4. To ensure the integrity of the equipment being used and success of the Fall Prevention/Protection Program, the following shall be strictly adhered to:

a. Only full body harnesses/shock absorbing lanyard systems approved by the Client may be used on any project. Personal safety harnesses/lanyard systems are strictly forbidden.
b. Lanyards must be of the shock absorbing type when used for fall protection.
c. Shock absorbing lanyards shall only be used for fall protection and are never to be used for positioning or material transport.
d. The shock-absorbing lanyard shall be secured to the D-ring located on the back of the harness between the shoulder blades
e. The shock absorbing or deceleration device shall be secured adjacent to the harness D-ring.
f. D-rings located at the waist may only be used for positioning or with rail-type ladder climbing devices.
g. D-rings located on the front of the harness shall only be used for attachment to rail-mounted ladder climbing devices.
h. Full body harnesses/shock absorbing lanyards shall be attached to an anchorage point capable of supporting an impact load of 3000Kg or twice the potential impact load of the engineered fall protection system.
I. Full body harnesses and shock absorbing lanyards shall be secured to limit potential freefall distance to 1.8m or less.
j. Snap hooks attached to shock absorbing lanyards shall be of the double action/locking type design. Simple spring resistant snap hooks shall not be used for fall protection.
k. Employees using a full body harness and shock absorbing lanyards shall inspect them for wear, damage and other deterioration prior to each use.
l. A Designated Competent Person (s) and subsequently color-coded or tagged to indicate a current inspection shall inspect all full body harnesses and shock absorbing lanyards at least monthly.
m. Defective full body harnesses and shock absorbing lanyards shall be tagged "DEFECTIVE - DO NOT USE" and immediately removed from service.
n. Full body harnesses and shock absorbing lanyards subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a Competent Person to be undamaged and suitable for reuse.

29. ANCHORAGE POINTS

The strength of a personnel fall arrest system is based on its being attached to an anchorage system that does not reduce the strength of the system. The following equipment and structure will not meet the requirements of the SABS standards and shall NOT be used for anchorage points.

a) Screw Pipe
b) Conduit
c) Cable Tray (use requires engineering approval)
d) Welded Pipe Less Than 50mm
e) Wooden Handrails

30. POSITIONING DEVICE SYSTEMS

Work positioning systems are sometimes required for specialized tasks such as installing vertical rebar walls. Personnel using positioning systems must adhere to the following minimum guidelines.

1. Personal positioning belts will only be allowed after they have been inspected and found acceptable by the onsite Safety Representative. A method for readily identifying inspected belts must be developed by the project site to ensure all positioning belts in use have been approved.
2. Positioning belts of any kind shall not be used as fall protection systems at any time.
3. Work positioning lanyards are to be attached to D-rings at the waist belt location and be supported by an appropriate work belt / harness. Positioning lanyards shall not be of the shock absorbing type and shall not be used for fall protection.
4. The positioning type lanyard shall limit fall potential to 900mm or less.

5. The positioning lanyard must always be backed up by a properly secured Shock Absorbing Fall Protection Lanyard or Retractable Lifeline Reel.
6. While ascending or descending vertical rebar walls, 100% fall protection shall be maintained by utilizing the Shock Absorbing Double Lanyard System or Retractable Lifeline Reels.
7. Snap hooks on positioning lanyards shall be of the double action / locking type design Simple spring resistant hooks shall not be used.
8. Employees using positioning belts/harnesses and lanyards shall inspect them for wear, damage and other deterioration prior to each use.
9. All positioning belts / harnesses and lanyards shall be inspected at least monthly by a Designated Competent Persons(s) and subsequently color coded or tagged to indicate a current inspection.
10. Defective positioning belts / harnesses and lanyards shall be tagged "DEFECTIVE - DO NOT USE" and immediately removed from service.
11. Positioning devices shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 1300 Kg, whichever is greater.

31. LIFELINE SYSTEMS

a) Lifeline systems are points of attachment for Fall Protection Lanyards and Harnesses. Lifelines may be mounted either vertically or horizontally and provide fall protection for personnel working in elevated areas.

b) Lifelines shall not be used for any other purpose than fall protection.

c) Lifelines shall be protected against being cut or abraded (i.e., Softeners around lifelines at anchorage point).

d) A Competent Person (s) at least weekly to ensure system and equipment integrity shall inspect lifelines. The project shall fit a colored tag to readily identify that the lifeline has been inspected and is fit for use prior to beginning any work involving the lifeline system.

32. LIFELINE PLACEMENT / INSTALLATION

a) Use the Engineered Systems included in this procedure or the project will be required to design and engineer a system for their particular needs. Approved-Engineering Drawings must be kept on file at the project site. The Client's registered Professional Engineer must approve all engineered systems. The minimum Crosby Clamps used on such a lifeline will be nothing less than 2 ass set in the standard of the Client Specification on site and will different from the type of lifeline used.

b) Lifelines must be installed and used under the supervision of a qualified person. Only designated qualified persons that have been approved by the Project Manager / Superintendent and Safety Representative will be allowed to supervise the installation. Written documentation on personnel qualified to supervise the installation of lifelines shall be kept on file at the project.

33. HORIZONTAL LIFELINES

a) Systems must be designed and engineered to maintain a safety factor of at least two (2).

b) Use the engineered systems included in this procedure or the project will be required to design and engineer a system for their particular needs. This must be done under the approval of a Professional Engineer. Approved-engineered drawings must be kept on file at the project.

c) Lifelines shall be installed, removed, and used under the supervision of a designated qualified person(s).

d) Written documentation on personnel qualified to supervise the installation of lifelines will be kept on file at the project on site.

34. VERTICAL LIFELINES

a) Must have a minimum breaking strength of at least 3000Kg.

b) Use the engineered systems included in this procedure or the project will be required to design and engineer a system for their particular needs Approved-engineered drawings must be kept on file at the project.

c) Only designated qualified persons that have been approved by the Project Manager/ Superintendent and Safety Representative will be allowed to supervise installation.

d) Written documentation on personnel qualified to supervise the installation of lifelines will be kept on file at the site.

35. RETRACTABLE LIFELINE SYSTEM

a). Retractable lifelines are devices that when properly used, will serve to stop the free fall of an employee prior to the employee striking a lower surface.

b). Retractable lifeline devices shall be attached to an anchorage point capable of supporting 3000Kg or designed and installed as part of a fall arrest system that maintains a safety factor of two (2).

c). Retractable lifelines shall be secured by, as a minimum 10mm wire rope chokers or slings and 12mm shackles The slings and shackles designated for fall protection shall only be used for fall protection purposes and should be color-coded "RED" to readily identify them for that purpose. ROPE (synthetic or natural fiber) SHALL NOT BE USED TO SECURE THESE DEVICES.

d). A Competent Person(s), at least monthly shall inspect all slings, chokers, and shackles. The monthly color code scheme should be placed on the equipment to identify it as inspected and available for use.

e). Each retractable lifeline device shall be equipped with a rope tag line for extending the device to elevations below the point of attachment.

f). Retractable lifelines shall be placed above every temporary construction ladder that is to be used for repeated access/egress and exposes employees to a fall hazard greater than 3.5m. The retractable device shall be attached in such a manner that it does not interfere with the employee who is using the ladder for access or egress.

g). Retractable lifelines shall be used to provide a fall protection system for structural ironworkers during erection, prior to installation of other fall prevention/protection systems.

h). A Competent Person shall inspect retractable lifeline systems, at least monthly. The monthly color code scheme shall be placed on the equipment to identify it as inspected and fit for continued use.

i). Employees specifically trained and Designated Competent shall only install retractable lifelines devices for that task.

j). Retractable lifeline shall be attached directly to the full body harness. Attachment to a shock-absorbing lanyard is not acceptable.

36. WARNING LINES

Warning line systems are designed to be utilized while performing work on low-slope roofs. The warning line allows employees to readily note when they are approaching an unprotected roof edge.

1. The warning line shall be erected around all open sides of the roof work area:

   a. When mechanical equipment is not being used, the warning line shall be erected not less than 1.8m from the roof edge.
   b. When mechanical equipment is being used, the warning line shall be erected not less than1.8m from the roof edge that is parallel to the direction of mechanical equipment operation, and not less than 3m from the roof edge that is perpendicular to the direction of mechanical equipment operation.
   c. Points of access, material handling areas, storage areas, and hoisting areas shall be attached to the work area by an access path formed by two (2) warning lines.
   d. When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line system, shall be placed across the path at the point where the path intersects the warning line system placed around the work area, or the path shall be offset such that an employee cannot walk directly into the work area.

2. Warning lines shall consist of rope or wire cables, and supporting stanchions erected as follows.

   a. The rope or wire cable shall be flagged at not more than 1.8m intervals with high visibility material.
   b. The rope or wire cable shall be rigged and supported in such a way that its lowest point (including sag) is no less than 750mm from the walking/working surface and its highest point is no more than 900mm from the walking/working surface.
   c. After being erected, with the rope or wire cable attached, stanchions shall be capable of resisting, without tipping over, a force of at least 3Kg, applied horizontally against the stanchion, 750mm above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge.
   d. The rope or wire cable shall have a minimum tensile strength of 230Kg, and after being attached to the stanchions, shall be capable of supporting, without failure, the loads applied to the stanchions as prescribed in Step 2.c above.
   e. The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

3. Personnel working outside the protection of a warning line system shall be protected by either a personal fall protection system or a safety net system at all times when there is a fall potential 1.8m or more. A warning line system DOES NOT allow workers to be unprotected from potential fall exposures.

37. CONNECTORS TOGGLES

a). These devices lock into structural steel boltholes to provide an anchorage point for a shock absorbing lanyard. These devices are to be used by structural iron connectors and bolt up personnel during steel erection.

b). Connector's toggles shall be able to withstand 3000Kg impact load or twice the potential impact load of an engineered fall protection system.

38. CONCRETE FORM ANCHORAGE POINTS

a). These devices attach to patented concrete forms to provide an attachment point for a shock-absorbing lanyard. They are to be used when placing concrete forms at elevations where a fall exposure exists.

b). Concrete form anchorage points shall be able to withstand 5000 pounds impact load or twice the potential impact load of an engineered fall protection system.

i. Retractable lifelines
ii. Manlifts

39. OVERVIEW OF FALL PROTECTION PLAN

a). Be sure to add any project specific procedures, equipment, or hazards that are not included in the Procedure Emphasis should be placed on elimination of the exposure first and utilization of fall protection equipment as a last resort.

b). All work performed on heights must be regulated by a risk assessment approved by the client and must be available on site where the specific work is performed.

c). The risk of fall shall be eliminate where reasonably practicable utilizing the hierarchy of controls.
d). Standard Working Procedures shall be in place for the correct wearing and use of personal fall arrest and fall restraint equipment.

e). There shall be a work permit system in place to control all working at heights.

f). A documented risk assessment shall be conducted before the commencement of work and at any time the scope of work changes or the risk of a fall increases. The risk assessments shall include:

- Consideration for the potential of objects, as well as personnel, to fall.
- Selection of appropriate control measures using the hierarchy of controls.
- The possibility for weather and other environmental conditions to influence
- The working conditions.
- Selection of appropriate equipment.
- Selection of Anchor and tie off points.
- Condition of supporting structures such as roofs.
- Selection of appropriate barricading and/ or demarcation.
- Fall clearances.

g). All equipment shall be fit for purpose and undergo pre use checks and a minimum of six-monthly documented inspections by a competent authorized person. An equipment register and tagging system shall be in place to indicate compliance with this inspection. Testing shall be done in accordance with recognized standard.
h).
i). Where the work method requires persons to detach and re-attach at height, a duel lanyard system shall be utilized to ensure that at least one connection point is maintained at all times.
j).
k). Where the use of personal fall arrest equipment is required, a person shall not work alone and there shall be other personnel in the vicinity that can raise the alarm immediately should a person fall.
l).
m). Persons working at height shall ensure that their safety helmets are secured by using a helmet chinstrap to retain the helmet on the head.
n).
o). A system should be in place to prevent tools, materials and other objects from falling from height.
p).
q). Barricading and warning signage should be placed on all lower levels where personnel or objects may fall.
r).
s). Personnel operating elevated work platforms and cages shall be trained and certified for the specific equipment they are using.
t).
u). The site emergency response plans should include plans for the rapid retrieval of personnel in the event of a fall from height.

40. HANDS ON DEMO OF EQUIPMENT

(Set up a mock work area where the instructor can demonstrate and employees can practice hands on use of equipment. As a minimum, the demo shall include the following items.)

A. Harness and Lanyard

1. Teach and demonstrate proper donning procedure (per manufacturer's guideline).
   a. Proper fit
   b. Proper positioning

2. Demonstrate correct use and storage of lanyards.
   a. Secure overhead to limit fall potential to a maximum of 1.8m
   b. Minimize swing fall hazard by securing lanyard directly overhead.
   c. Allow adequate clearance to prevent striking objects below (shock absorber will elongate upon activation).
   d. Never snap two (2) lanyards together for extra length.
   e. Never tie knots in a lanyard.
   f. Steel lanyard required for welders.
   g. Shock absorber end must be secured adjacent to harness.
   h. Never hook shock absorbing lanyards to a retractable reel.
   i. Store lanyards rolled up out of the way to eliminate a trip or snag hazard.

B. Explain and demonstrate proper use of "D"-Rings.
   a. Front "D"-Ring must only be utilized for attachment to rail mounted ladder climbing devices.
   b. Side "D"-Rings are designed only for positioning.
   c. Back "D"-Ring located between the shoulders must be used to attach shock absorbing lanyard to the harness. (Also to be used for direct hook up to retractable lifelines)

C. Review manufacturers recommended inspection procedure (by user before each use).
   a. Faulty latches or snaps
   b. Cuts and abrasions
   c. Burns
   d. Dry rot
   e. Chemical damage
   f. Excessive wear
   g. Loose or torn stitches

D. Movement and access in elevated areas.
   a. Always tie-off before accessing work areas where a fall exposure exists.
   b. Two (2) lanyards will be required to provide continuous tie-off while climbing through pipe racks or structures.
   c. Tie-off to approved anchorage points (refer to written procedure).
   d. IF FALL PROTECTION TIE-OFF IS NOT AVAILABLE, DO NOT ACCESS THE AREA!
   e. ALWAYS connect the second lanyard before unfastening the first lanyard when traveling in elevated areas.

E. Explain and demonstrate use of anchorage devices such as straps, connector toggles, etc.

F. Retractable Lifelines

1. Inspect daily prior to use.
   a. Check housing for dents or signs of abuse.
   b. Check cable for kinks, bird caging, inlaying, broken wires, heat damage and excessive wear.
   c Pull on cable and make sure it moves smoothly.
   d. Give the cable a quick pull to ensure the brake is engaging properly.
   e. Check snap hooks for sign of alterations, distortions, cracks, dents or cuts.
   f. Check pressed metal sleeves on cable for cracks or excessive wear.
   g. Check anchorage for proper connections.

2. Proper care of unit.
   a. Never drop the unit from any height.
   b. Protect the cable from sharp corners and edges.
   c. Don't allow foreign matter to enter the housing.
   d. NEVER permit the cable to re-reel uncontrollably back into the device.
   e. Do not leave cable extended for prolonged periods of time.
   f. Do not stretch welding leads or electrical cords across the cable.

3. Demonstrate and review proper use of unit.
   a. Snap hook shall be secured directly to the back "D"-Ring. (Do NOT use safety lanyard for attachment to retractable lifeline.)
   b. Swing fall must be minimized. Never install the unit where the cable will make an angle of greatest than thirty degrees (30°) with vertical.
   c. Allow a minimum clearance of 1m in the event of a fall.
   d. Do not work with cable at full extension (at least 900mm must remain on the device).
   e. Cable should not pass over sharp corners.
   f. Only designed for one (1) person at a time (36-130Kg).
   g. Never to be used as a work positioning device.
   h. Do NOT allow cable to pass under arms, between legs, or wrap around any part of the body.
   i. Do NOT climb above the anchorage point.
   j. To arrest a fall, a Competent Person prior to being put back in service must inspect the unit.

RESCUE PLAN FOR WORKING AT HEIGHTS

RESCUE PROCEDURE IN THE CASE OF A PERSON FALLING FROM AN UNPROTECTED HEIGHT USING A FALL ARREST SYSTEM

1. **Purpose**

   a) The purpose of this procedure is to prevent an accident from happening and to rescue a person if he should fall from an unprotected height.
   b) This rescue should take place within 5 minutes from the accident occurring to prevent the person going into Suspension Trauma.
   c) Full body Safety harnesses are classified as Personal Protective Equipment and PPE should only be used when all others means of safeguarding the employees have been addressed and no other option is available but to use PPE

2. **Rescue procedure conscious patient**

   a) In the event of an accident occurring and where the person is not injured or unconscious, such person should immediately get himself onto a solid platform where he can stand (without undoing the lanyards) and wait for someone to bring a ladder.
   b) If there are safe means of climbing down in the case of Scaffolding the person should climb down and report the accident immediately to the Project Safety officer. The person must go for medical treatment.

3. **Rescue procedure unconscious patient**

   a) In the event of an accident occurring and where the person is unconscious or injured, such person should be attended to immediately.
   b) Backup in the sense of the local Fire Department should be called immediately.
   c) If the person is hanging from scaffolding a platform should be build at the area where the person is hanging and he must be pulled towards the scaffold and placed with his back on scaffold planks with other employees assisting the person.
   d) Only when the person is safely on the scaffold platform should his lanyards be unhooked.
   e) Immediate medical attention should be rendered and if the person is not breathing and no pulse can be detected, then CPR must be started and the rescue party must then wait for a professional local team to lower the person further down to the ground.
   f) The local authorities has specialized equipment where they can lower the person down without jeopardizing his safety or aggravating his injuries

4. **When working on the tower crane**

   a) When working on top of the tower crane.
   b) If a person has fallen over the edge and is suspended hanging on their harness and fall arrest equipment.
   c) If the person is responsive use the standard rescue kit and assist him / her to get back onto the crane boom or down to the ground. The training techniques covered in the fall protection plan US Id: 229995 will be sufficient for this.
   d) If the victim is unresponsive use the SnatcherTm rescue kit to access him / her and get them down on to th ground.

5. **When working scaffold structures**

   a). When working on a scaffold structure with a responsive and or unresponsive victim, use the standard rescue kit turned around in a lowering mode.
   b). Access the victim, connect the rope to him /her, tension the rope through the friction device decender, remove the lanyard and lower the victim down to the ground.
   c). Ensure that the rope on the rescue system exceeds that of the height of the lower prior to starting any work on the structure.
   d). The rescue can be performed using the rescue techniques covered in the fall protection plan US Id: 229995 will be sufficient for this. Competence needs to be proven against this unit standard.

6. **When working on top of the slab section**

   a). When working on top of the slab section with a responsive or unresponsive victim.
   b). Use the Snatcher remote rescue kit to access the victim.
   c). Lift the victim to release the weight off the lanyard.
   d). Cut the victims lanyard and lower them to the ground.
   e). Competence for this rescue has already been proven in US ID: 229995.

7. **Suspension trauma**

   a). Suspension trauma is harness induced death caused by blood circulation that is cut off and a lack of muscle movement that will cause a lack of oxygen on cellular level.
   b). Suspension trauma is a very serious emergency that will cause death or organ failure if not treated correctly.

8. **Communicating this procedure**

   a) This procedure should be communicated to all employees and it should be displayed in all relevant working areas and notice boards.

COMMUNICATION SHEET

Presented By_____

Date_____

Name	Coy No. / Company Name	Foreman / Supervisor Name	Signature

ECI

TRANSNET

AUDIT EVALUATION

ECTPHG-TM-011

NAME OF CONTRACTOR	WBHO
DATE	27-Jan-17
AUDIT TEAM	C Minnie
CONTRACTORS REPRESENTATIVES	N De Klerk & G Mulder
SITE / PROJECT LOCATION	TNPA Building

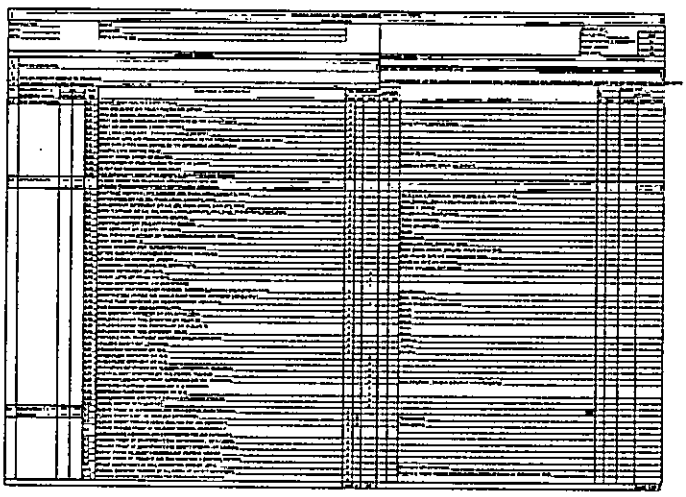
SUMMARY OF COMPLIANCE AND ALLOCATION OF POINTS

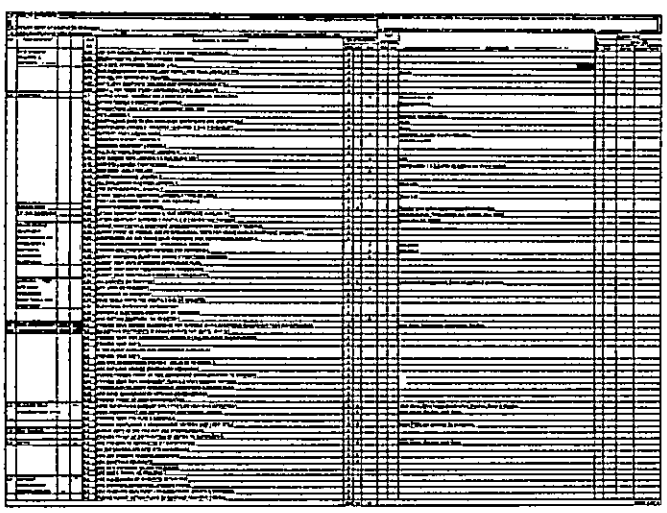
	ACTUAL POINTS	N/A		
SUMMARY OF - PAGE 1	240	52	4	184
SUMMARY OF - PAGE 2	292	40	16	236
SUMMARY OF - PAGE 3	208	32	12	164
SUMMARY OF - PAGE 4	276	16	6	254
SUMMARY OF - PAGE 5	252	120	8	126
SUMMARY OF - PAGE 6	228	104	10	114
SUMMARY OF - PAGE 7	272	60	16	196
SUMMARY OF - PAGE 8	236	184	4	48
SUMMARY OF - PAGE 9	484	160	90	234
TOTAL - ACTUAL POINTS	2488			
TOTAL - POINTS NOT APPLICABLE		768		
TOTAL - POINTS NOT TO STANDARD			164	
TOTAL - POINTS TO STANDARD				1556
TOTAL - POINTS APPLICABLE (TO STANDARD + NOT TO STANDARD)				1720
PERCENTAGE OBTAINED				90.47

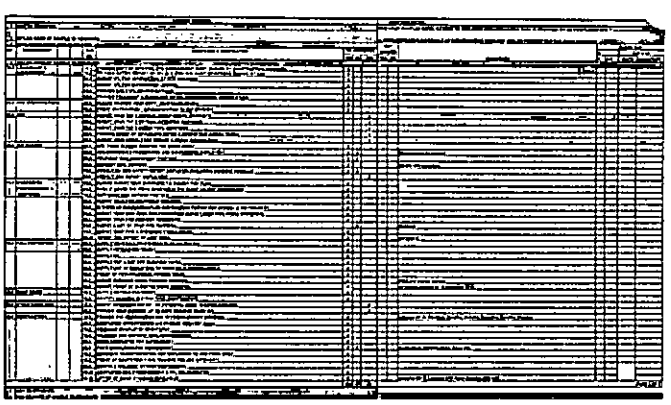
REMARKS

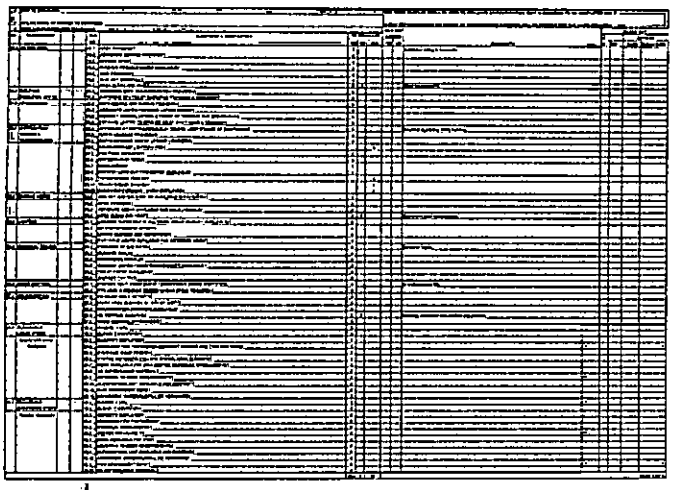
SIGNED: Construction Manager: _____ Auditor: _____

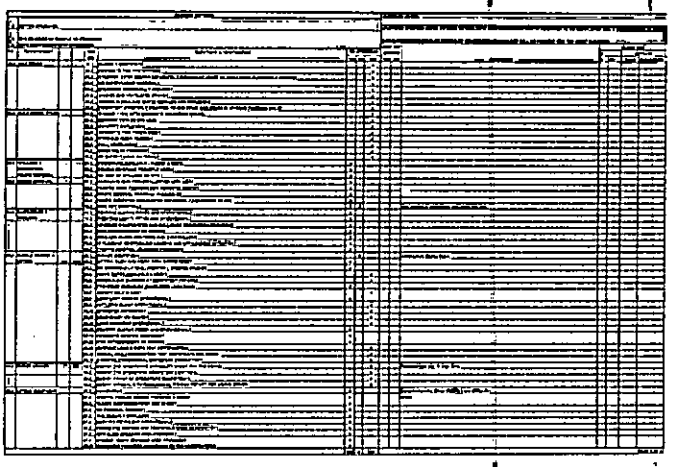
Date: _____ _____

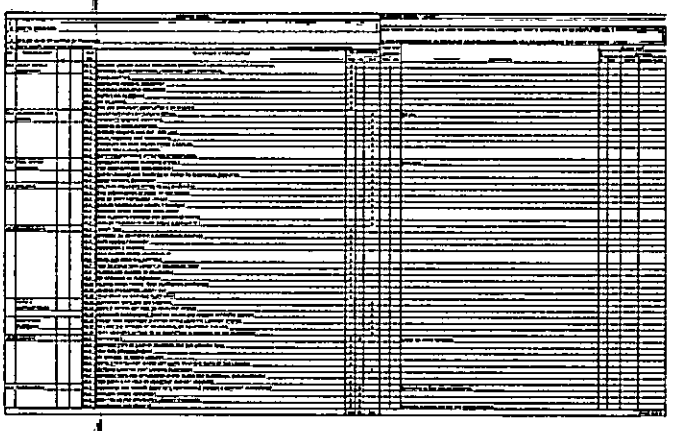


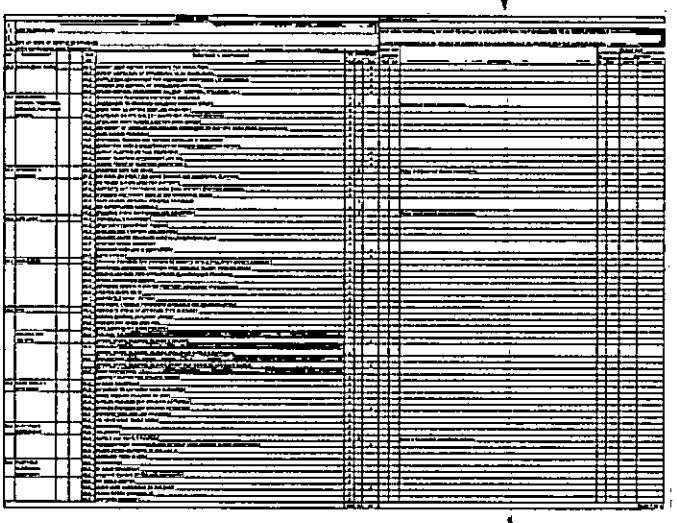


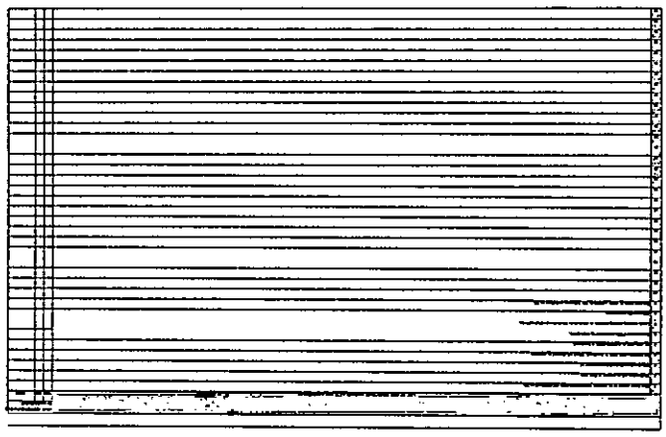


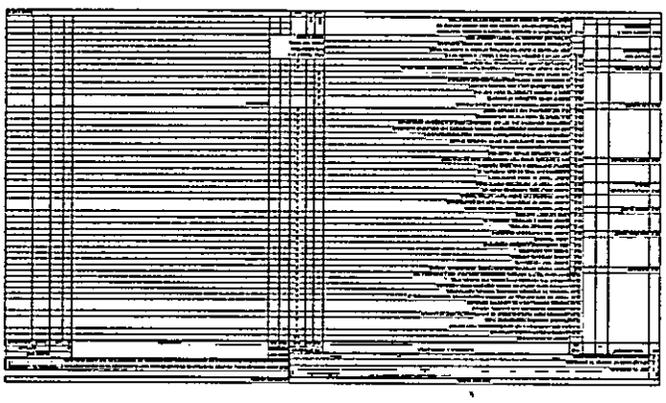


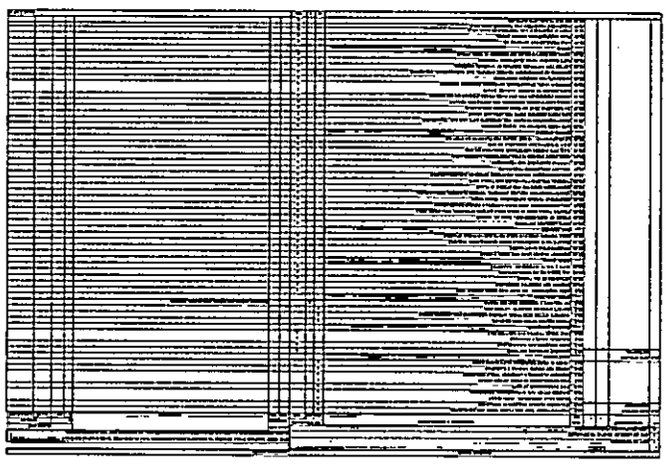












Contract name	N2 Grahamstown	Date of Incident	17 January 2017
Contract Code	61281	Time of Incident	08:00
Division	R&E	Injured / Responsible person's name	S Ditlanga

Corresponding Unique Incident Number from Flash Report	CORRECTIVE MEASURE / DATE / CONTRACT NUMBER: 01/17/01/2017/61281

This document needs to be completed for any of the flowing:
1. Any serious accident which resulted in the injured having to receive medical attention from a Doctor or Hospital, any Fatality, Major damage to Plant / Vehicles / Equipment / Material.
2. Any serious Incident which had the potential to cause an LTI, Reportable Injury, Damage of more than
3. R 100 000-00 to Plant / Equipment / Material.
4. Any Major Non conformance which was issued by a Client Agent, OHS Coordinator, Department of Labour Inspector / Department of Minerals and Energy Inspector or External auditor.
5. Please complete by typing the information required or when options are available then mark the correct choice with an "x".

Level 1		Level 2	
Damages / Loss exceed R500000		Damages / Loss exceed R200000	
Max Business Interruption		IOD's not hospitalised MTC	
Death / Hospitalization	X	Significant Fraud / Theft / Politics, SAPS Investing	

The Incident Investigation team consisted off the following persons:

NAME	COMPANY & DESIGNATION	CONTACT NO.
G Kleinsmit	WBHO – Safety Director	0834426785
NC de Klerk	WBHO – HR &Safety Manager	0823726169
VM Ntshobola	WBHO – Safety Officer	0761064484
G Forward	WBHO – Contract manager	0824921267
W Broekman	WBHO – Contract Director	0834403849

SHORT DESCRIPTION OF INCIDENT

Employee was working next to the N2 when a driver of a vehicle passing by fell asleep. His vehicle left the road and collided into the employee next to the road

INITIAL FINDINGS

The employee were injured when the vehicle of a 3rd party left the road and drove into him

DIRECT CAUSE

Driver of the vehicle fell asleep

WBHO CONSTRUCTION (PTY) LTD | OCCUPATIONAL H & S MANAGEMENT SYSTEM | OHS | Section 4.5.3.5
INVESTIGATION FORM (SERIOUS INCIDENT) | REV | 6.3 | 04/12/13
Record Keeping | Project OHS File, Employee File, Insurance Department, OHS Department, Archive | PAGE | 2 of 13

INCIDENT / ACCIDENT DETAILS		DETAILS OF EMPLOYER	
AREA LOCATION OF INCIDENT	N2 Grahamstown	COMPANY NAME	Inyameko Trading 1218
CONTRACT DIRECTOR	W Broekman	SCOPE OF WORK	Applying of slurry
CONTRACT MANAGER	G Forward	MANDATORY AGREEMENT IN PLACE	Yes
SUPERVISOR OF CONSTRUCTION WORK	E Dudula	APP. CONSTRUCTION WORK SUPERVISOR	T Ditlanga
INCIDENT DETAILS		**GENERAL INFORMATION**	
SECTION	N2 outside Grahamstown	RISK ASSESSMENT IN PLACE	Yes
NO OF WORKMAN INVOLVED	1	POLICE NOTIFIED	Yes 17/01/2017
WITNESSES	1	LOCAL AUTHORITIES NOTIFIED (INSPECTOR)	Yes 17/01/2017
DAMAGE TO PLANT / MATERIAL	Damage to 3rd party vehicle	POLICE CASE NUMBER IF APPLICABLE	MAS 01/2017 Grahamstown
EXPECTED COSTS INVOLVED		STATEMENTS TAKEN	Yes X No
INJURED DETAILS		PHOTOGRAPHS TAKEN	Yes X No
NAME	S Ditlanga		
ID NUMBER	7702045720087		
COMPANY NUMBER			
OCCUPATION	General Worker		
PERIOD ON CONTRACT	2 Weeks		
LENGTH OF EXPERIENCE	2 Years		
UNDERGONE SAFETY INDUCTION	Yes		
TRAINING RECORDS	N/A		
INJURIES SUSTAINED	Broken leg, broken arm and injuries to his head		
EXPECTED PERIOD OF DISABLEMENT	2 Months		

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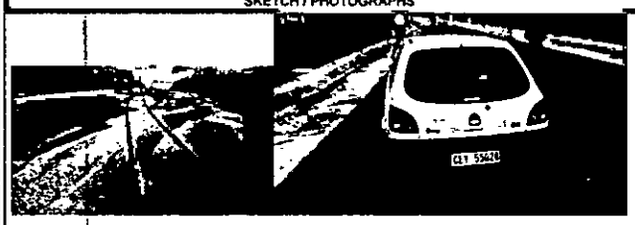
SKETCH / PHOTOGRAPHS



Identify the Loss (Mark applicable Box with an "X")

Fatality		Injury	X	Illness		Fire Damage		Crime Loss	
Pollution		Damage		Sub Quality Products / Service		Financial Loss		Environmental Impact	
Production		Other		Specify Other:					

Conduct a Risk / Loss Potential Evaluation (Mark applicable box with an "X")

Consequence			Frequency of Exposure			Probability of occurrance		
Major (A) 100	Serious (B) 10	Minor (C) 1	High (A) 100	Moderate (B) 10	Low (C) 1	High (A) 100	Moderate (B) 10	Low (C) 1
	X			X				X

Risk Results = C x E x P = 100

Gather Event Information / Evidence

PEOPLE	
Environment: e.g. wind, rain, ice, heat, humidity, noise, lighting, etc.	Sunny day with mild wind
Positions of people, equipment, material and their relationships.	Employee's working next to the road
Any other witnesses.	Yes E Dudula
Was anything moved, turned off or on, or taken from the scene?	No
Was the site emergency response plan followed?	Yes
What attracted the witness attention to the incident?	Sound of moving car
What will the witnesses do to prevent a recurrence?	N/A
Were hazards identified and risks evaluated?	Yes
Were codes and standards available and incorporated into control plan?	Yes
Were physical barriers (PPE) and behavioural controls selected for activity?	Yes

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Were any special emergency controls required for this activity?	Yes	
If a safe work procedure was required for activity, was it available and functioning?	Yes	
Were job descriptions prepared and followed?	Yes	
Were controls and barriers in place and working?	Yes	
Did the supervisor observe the activity in progress?	Yes	
If drugs, alcohol, family problems, or emotional disturbances contributed to any performance error observed in incident, were efforts made to solve these problems before the incident?	N/A	
If supervisors or fellow employees observed performance errors, were good-faith efforts made to correct these errors?	N/A	
If a similar incident occurred before, was adequate remedial action taken?	N/A	
Did management take reasonable measures to prevent this incident?	Yes	
Did you have any scenario prior to the incident and did you discuss such concerns with your supervisor / management / safety coordinator?	Yes	
PARTS		
Components of equipment, materials and parts of structures that is fractured, distorted, scarred, charred or ruptured.	N/A	
Parts suspected of internal failure or subject to sudden stoppage or abnormal stress as a consequence of the incident.	N/A	
Parts suspected of improper assembly (mating).	N/A	
Parts suspected of deficient material in fabrication, improper tempering or heat treatment, or improper bonding.	N/A	
Parts or components that seem faulty in workmanship, deficient in design or seem to have inadequate interface with other equipment or materials.	N/A	
Parts improperly mounted or inadequately supported, such as lines, tubing, fittings, wiring and controls, and subject to cyclical operation, vibration, or reactive movement of pressure or tension.	N/A	
Parts requiring lubrication or surface conditioning.	N/A	
Controls and position of operation indicators.	N/A	
Parts that are power sources, engines, motors, pumps, transformers, relays.	N/A	
Substitute or modified component parts.	N/A	
Foreign objects and parts that seem different in colour, shape, size, location.	N/A	
Fluid spills and stains, as well as parts that show signs of leakage.	N/A	
Safety colour coded parts indicating possible hazards.	N/A	
Fire damaged parts i.e. heat discolouration, soot patterns, distortion of metal structures, calcinations of concrete structures.	N/A	
Electrical failure evidence such as power sources, or keys, limit switches and wires.	N/A	
Substitute or modified component parts.	N/A	
Foreign objects and parts that seem different in colour, shape, size, location.	N/A	
Fluid spills and stains, as well as parts that show signs of leakage	N/A	
Safety colour coded parts indicating possible hazards.	N/A	
Fire damaged parts i.e. heat discolouration, soot patterns, distortion of metal structures, calcinations of concrete structures.	N/A	
Electrical failure evidence such as power sources, or keys, limit switches and wires.	N/A	
PROCESS		
If the incident involved a motor vehicle, process considerations will include:		
• Speed / speed limit.	Yes	
• Weather conditions.	Sunny	
• Purpose of trip, e.g. delivery, travelling to the office, etc.	3rd Party	
• Time limitations.	N/A	
• Time already travelled vs. Distance covered.	2 hours	
Rest periods, etc.		
If the incident involved a boiler / vessel under pressure, it should be obvious that information on the following would be essential:		
• Pressure in the vessel at the time of the incident.	N/A	
• Normal operating conditions or starting up?	N/A	
• Water level	N/A	
• Chemical composition of the water / water treatment procedure / monitoring, etc.	N/A	
Incidents involving processes, e.g. drilling, support, scraping / cleaning, barring, etc.		
• Hole position	N/A	
• Ventilation	N/A	
• Loose rocks / hanging wall	N/A	
• Temporary support	N/A	
• Ridging	N/A	
• Pinch bars	N/A	

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Scraper attachments	N/A
Determining normal process conditions and determination if abnormal process conditions existed at the time of the incident.	N/A

POSITION

Positions of the dead, injured persons and witnesses at the time of the incident.	Next to N2 between Grahamstown and Peddie
Machines, vehicles and other types of equipment involved in or affected by the incident.	N/A
Part broken off or detached from equipment and materials?	N/A
Objects which were broken damaged or struck during or as a result of the incident.	N/A
Gouges, scratches, dent, paint smears, rubber skid marks, etc. On surface.	N/A
Tracks or similar traces of movements.	N/A
Defects or irregularities in surfaces.	N/A
Accumulations of or stains from fluids, whether existing before the incident or spilled as a result of the incident.	N/A
Spilled or contaminated materials	N/A
Safety devices and equipment (some of these are not actually parts but are very useful elements of evidence)	N/A
Results of the contact – deflection of objects and bodies from the line of motion or propelled from the point of contact.	N/A
Relationships to standards – correct operating positions, movement within an area, and arrange of materials.	N/A
Interference factors – visibility compromised or motions restricted by obstructions, congestion, etc.	N/A
Controls and their functional positions	N/A
Safety devices / systems and their functional positions.	N/A
Broken parts.	N/A
Obstructions	N/A
Sources of distraction, light, noise, temperature.	N/A
Supports.	N/A
Geological disturbances	N/A
Signs	N/A
Measure results of the contact, relationships to standards, interference factors	N/A
Arrest of debris	N/A
Sources of distractions of adverse environmental conditions	N/A
Evidence of deterioration, abuse and lack of proper maintenance.	N/A
Location of parts, or other evidence, overlooked during early stages of investigation.	N/A
Controls and position of operator indicators	N/A

PAPER

Records that establish management policies governing the activity involved in the incident.	N/A
Conditions reports, hazard reports and analysis records that reflect decisions regarding the incident environment.	N/A
Facility specifications and descriptions that construct the work environment.	N/A
Purchasing specifications and directives that reflect decisions regarding equipment and work materials.	N/A
Equipment installation, repair, maintenance and critical parts inspection records that reflect priorities and control of work.	N/A
Equipment manufacturer's company's operator manuals, work instructions, operator training criteria and skill certification requirements that reflect program standards.	N/A
Employee selection, placement, and training records that relate to operators, repair and maintenance workers and supervisors.	N/A
Work records that relate to the task and individual employee with respect to task assignments, classification, hazard exposure and the physiological or health and hygiene factors	N/A
Recruitment, selection, hiring and training for all levels	N/A
Proper job analysis of critical steps and hazards.	N/A
Career patching / succession planning	N/A
Planned job observations of work or actions.	N/A
Personal communication – individual instructions.	N/A
Physical protective measures.	N/A
Personal protective equipment	N/A
Emergency response preparedness.	N/A
First aid training for employees.	N/A
Safety and loss control promotion.	N/A
Loss reporting and investigation.	N/A
Engineering controls on equipment and materials.	N/A
Purchasing controls on equipment and materials	N/A
Planned inspections of equipment and facilities	N/A

Environmental controls for comfort and safety.	N/A
Work rules and practices.	N/A
Change management.	N/A

IDENTIFY the agency (item / substance that harmed / imposed the loss) [Mark applicable Box with an "X"]

General Agencies (Items / substances)		Identify type of contact		Occupational Hygiene Agencies (Item / substance)
Fall of ground		Struck against (running or bump into)		Biological
Transport	X	Fall from elevation to lower level		Chemical
Building / structure		Caught in (pinch and nip points)		Dust
Electricity		Caught between or under (crushed / amputated)		Ergonomics
Pressure pos / neg		Overstress (overexertion, overload, overexposure, ergonomic)		Fire
Hand tools		Struck by (hit by moving object)	X	Fumes
Animals / insects /people		Fall on same level (slip and fall, trip over)		Gas
Burning and scalding		Caught on (snagged, hung)		Heat
Drives belts and chains		Contact with (electricity, heat, cold, radiation, chemical, noise)		Lighting
Machinery		Handling (lifting, pushing, pulling)		Noise
Compressed air		Inundation		Oxygen deficiency
Lifting equipment		Other		Psychological
Obstruction				Radiation
Power tools				Steam / smoke
Explosive device				Vibration
Material / goods				Other
Splinters				
Trucks and earthmoving machines				
Ladders / stairs				
Metal – hot				
Motor vehicles	X			
Scaffolding				
Other				

DEFENCE FACTORS FAILURE [Mark applicable Box with an "X"]

Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE	Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE	Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE
WBHO Rules				Training / procedures				Rules and procedures			
Rescue system procedures				Barriers				Ventilation			
				Blasting procedures				Controls			
Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE	Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE	Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE
Hazard identification				Road surfaces				Support systems			
Uncontrolled water flow				High walls & faces				Protection systems or procedures			
				PPE							
Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE	Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE	Defence Factors	ABSENT	SOME FAILURE	TOTAL FAILURE
Warning systems or procedures				Escape systems / procedures				Detection systems / procedures			
Recovery systems / procedures				Climate / controls				Other			

PERSONAL FACTORS [Mark applicable Box with an "X"]

FOLLOWING PROCEDURES

Violation by individual	Violation by group	Violation by supervisor	Operation of equipment without authority
Improper position or posture for the task	Overexertion of physical capabilities	Work or motion at improper speed	Improper lifting
Improper loading	Shortcuts	Other	
Specify Other:			

USE OF TOOLS / EQUIPMENT

Improper use of equipment	Improper use of tools	Use of defective equipment (owner)	Use of defective tools (owner)
Improper placement of tools, equipment or materials	Operation of equipment at improper speed	Servicing of equipment in operation	Other
Specify Other:			

USE OF PROTECTIVE METHODS

Lack of knowledge of hazards present	Personal protective equipment not used	Improper use of proper personal protective equipment	Servicing of energized equipment
Equipment or materials not secured	Disabled guards, warning systems or safety devices	Personal protective equipment not available	Other
Specify Other:			

INATTENTION / LACK OF AWARENESS

Improper decision making or lack of judgement	Distracted by other concerns	Inattention to footing and surroundings	Horseplay
Acts of violence	Failure to warn	Use of drugs and alcohol	Routine activity without thought
Other			
Specify Other:			

CONDITIONS

PROTECTIVE SYSTEMS

Inadequate guards / protective devices	Defective guards / protective devices	Inadequate personal protective equipment	Defective personal protective equipment
Inadequate warning systems	Defective warning systems	Inadequate isolation of process or equipment	Inadequate safety devices
Defective safety devices	Other		
Specify Other:			

TOOLS, EQUIPMENT & VEHICLES

Defective equipment	Inadequate equipment	Improperly prepared equipment	Improperly prepared tools
Defective tools	Inadequate tools	Defective vehicle	Inadequate vehicle for purpose
Improperly prepared vehicle	Other		
Specify Other:			

WORK EXPOSURES TO

Fire / explosion	Noise	Energised electrical systems	Energised systems, other than electrical
Radiation	Temperature extremes	Hazardous chemicals	Mechanical hazards
Clutter or debris	Storms or acts of nature	Slippery floors / walkways	Other
Specify Other:			

WORK PLACE ENVIRONMENT / LAYOUT

Congestion or restricted motion		Inadequate or excessive illumination		Inadequate ventilation		Unprotected height	
• Controls less than adequate	X	• Displays less than adequate		• Labels less than adequate		• Locations out of reach or sight	
• Conflicting information is presented		Other					
Specify Other:							

IDENTIFY THE TASK / ENVIRONMENTAL CONDITIONS THAT CONTRIBUTED TO THE EVENT

Check question: does the item describe something about the task demands, work environment, individual capabilities or human factors that promoted errors / violations or undermined the effectiveness of system defences?

HUMAN FACTORS [Mark applicable Box with an "X"]

PHYSICAL CAPABILITY

Vision deficiency	Hearing deficiency	Other sensory deficiency	Reduced respiratory capability
Other permanent physical disabilities	Inability to maintain body positions	Restricted range of body movement	Substance sensitivities or allergies
Inadequate size or strength	Diminished capacity due to medication	Other	
Specify Other:			

PHYSICAL CONDITION

Previous injury or illness	Fatigue	• Due to work load	• Due to lack of rest
• Due to sensory overload	Diminished performance	• Due to temperature extremes	• Due to oxygen deficiency
• Due to atmospheric pressure variation	• Blood sugar insufficiency	• Impairment due to drug or alcohol use	Other
Specify Other:			

MENTAL STATE

Poor judgement	Memory failure	Poor coordination or reaction time	Emotional disturbance
Fears or phobias	Low mechanical aptitude	Low learning aptitude	Influenced by medication
Other			
Specify Other:			

MENTAL STRESS

Preoccupation with problems	Frustration	Confusing directions / demands	Conflicting directions / demands
Meaningless or degrading activities	Emotional overload	Extreme judgement / decision demands	Extreme concentration / perception demands
Extreme boredom	Other		
Specify Other:			

BEHAVIOUR

Improper performance is rewarded	• Saves time or effort	• Avoids discomfort	• Gains attention
Improper supervisory example	Inadequate identification of critical safe behaviours	• Proper performance is criticised	• Inappropriate peer pressure
• Inadequate performance feedback	• Inadequate disciplinary process	Inappropriate aggression	Improper use of production incentives
Supervisor implied haste	Employee perceived haste	Other	
Specify Other:			

SKILL LEVEL

Inadequate assessment of required skills	Inadequate practice of skills	Infrequent performance of skills	Lack of coaching on skills
Insufficient review of instruction to establish skills	Other		
Specify Other:			

Job Factors [Mark applicable Box with an "X"]

TRAINING / KNOWLEDGE TRANSFER

Inadequate knowledge transfer	• Inability to comprehend	• Inadequate instructor qualifications	• Inadequate training equipment
• Misunderstood instructions	Inadequate recall of training material	• Training not reinforced on the job	• Inadequate refresher training frequency
Inadequate training effort	• Inadequate training program design	• Inadequate training goals / objectives	• Inadequate new employee orientation
• Inadequate initial training	• Inadequate means to determine if qualified for the job	No training provided	• Need for training not identified
• Training records incorrect or out of date	• New work methods introduced without training	• Decision made not to train	Other
Specify Other:			

MANAGEMENT / SUPERVISION / EMPLOYEE LEADERSHIP

Conflicting roles / responsibilities	• Unclear reporting relationship	• Conflicting reporting relationship	• Unclear assignment of responsibility

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• Conflicting assignment of responsibility		• Improper / insufficient delegation of authority		Inadequate leadership	-	• Standards of performance missing or not enforced	
• Inadequate accountability		• Inadequate / incorrect performance feedback		• Inadequate work site walk-through		• Inadequate safety promotion	
Inadequate correction of prior hazard / incident		Inadequate identification of worksite / job hazards		Inadequate management of change system		Inadequate incident reporting / investigation system	
Inadequate / lack of safety meetings		Inadequate performance measurement and assessment		Lack of visible well leadership in safety		Other	

Specify Other:

PURCHASING, MATERIAL HANDLING & MATERIAL CONTROL

Incorrect item received		• Inadequate specifications to vendor		• Inadequate specifications on requisition		• Inadequate control on changes to orders	
• Unauthorised substitution		• Inadequate product acceptance requirements		• No acceptance verification performed		Inadequate research on materials / equipment	
Inadequate mode or route of shipment		Improper handling of materials		Improper storage of materials / spare parts		Inadequate material packaging	
Material shelf life exceeded		Improper salvage and / waste disposal		Inadequate use of safety and health data		Other	

Specify Other:

ENGINEERING / DESIGN

Inadequate technical design		• Design input obsolete		• Design input incorrect		• Design input not available	
• Design output inadequate		• Design input infeasible		• Design output incorrect		• Design output inconsistent	
• No independent design review		Inadequate standards, specifications, / design criteria		Inadequate assessment of potential failure		Inadequate ergonomic design	
Inadequate monitoring of construction		Inadequate assessment of operational readiness		Inadequate monitoring of initial operation		Inadequate evaluation and / documentation of change	
Other							

Specify Other:

Identify the organisational factors that contributed to the event (Mark applicable box with an X)

Check question, does the item identify a standard Organisational Factor present before the event and which resulted in the task / environmental condition or allowed these conditions to go unaddressed

WORK PLANNING

Inadequate work planning		Inadequate preventive maintenance		• Assessment of needs		• Lubricating / servicing	
• Adjustment / assembly		• Cleaning / resurfacing		Inadequate repair		• Communication of needed repair	
• Scheduling of work		• Examination of parts		• Parts substitution		Excessive wear and tear	
• Inadequate planning for use		• Extension of service life		• Improper loading		• Use by untrained people	
• Use for wrong purpose		Inadequate reference materials or publications		Inadequate audit / inspection / monitoring		• No documentation	
• No correction responsibility		• No accountability for corrective action		Inadequate job placement		• Appropriate personnel not identified	
• Appropriate personnel not available		• Appropriate personnel not provided		Other			

Specify Other:

RISK ASSESSMENT / WORK RULES / POLICIES / STD'S / PROCEDURES

Lack of PSP for the task		• Lack of defined responsibility for PSP		• Lack of task safety analysis		• Inadequate task safety analysis	
Inadequate development of PSP		• Inadequate coordination with process / equipment design		• Inadequate employee development		• Inadequate definition of corrective actions	
• Inadequate format for easy use		Inadequate implementation of PSP, due to deficiencies		• Contradictory requirements		• Confusing format	
• More than one action per step		• No check-off spaces provided		• Inaccurate sequence of steps		• Confusing instruction	
• Technical error / missing steps		• Excessive references		• Potential situations not covered		Inadequate enforcement of SP	
• Inadequate monitoring of work		• Inadequate supervisory knowledge		• Inadequate reinforcement		• Non-compliance not corrected	
Inadequate communication of PSP		• Incomplete distribution to work groups		• Inadequate translation to appropriate languages		• Incomplete integration with training	

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• Out of date revisions still in use		Inadequate observation of PSP		Other			

Specify Other:

COMMUNICATION

Inadequate horizontal communication between peers		Inadequate vertical communication between supervisor and employee		Inadequate communication between different organizations		Inadequate communication between work groups	
Inadequate communication between shifts		Inadequate communication methods		No communication methods available		Incorrect Instructions	
Inadequate communication due to job turnover		Inadequate communication of safety and health data, regulations or guidelines		Standard terminology not used		Verification / repeat back techniques not used	
Messages too long		Speech interference		Other			

Specify Other:

CONTRACTOR SELECTION AND OVERSIGHT

Lack of contractor pre qualifications		Inadequate contractor pre qualifications		Inadequate contractor selection		Use of non-approved contractor	
Lack of job oversight		Inadequate oversight		Other			

Specify Other:

Identify the organisational factors that contributed to the event (Mark applicable box with an X)

Check question: does the item identify a standard Organisational Factor present before the event and which resulted in the task / environmental conditions or allowed these conditions to go unaddressed

PLANNING AND LEADERSHIP

Planning and implementing		Management commitment		Documents and data control		Committees and employee involvement	
External regulations and standards	X	External relations		Management reviews		Inspections	
Planned general inspections		Specialised OHS equipment inspections		Mobile and material handling equipment		Preventative maintenance	
Statutory compliance		Housekeeping inspections		Other			

Specify Other:

COMPETENCE TRAINING AND COMMUNICATIONS

Employee orientations / awareness		Competency and training needs identified		Training program effectiveness		Training program content and delivery	
One on one communications		Group OHS meetings		Programme promotions		Other	

Specify Other:

MANAGEMENT OF OCCUPATIONAL RISK AND CHANGE

Identifying operational risk	X	Operational analysis		Significant task identification and analysis		Management of change	
Other							

Specify Other:

OPERATIONAL MANAGEMENT AND DESIGN

Planning for product realisation		Processes related to interested parties		Design and development		Production and service operations	
Control of measuring and monitoring devices		Other					

Specify Other:

PURCHASING SYSTEMS

Equipment, materials and suppliers		Contractors		Other			

Specify Other:

WORK PROCESSES AND OPERATING PERMITS

Site permits and high work controls		Externally required permits		Organisational OHS rule programme		Other	

Specify Other:

OCCUPATIONAL HEALTH SYSTEMS

Occupational medicine and occupational hygiene administration		Hazard recognition and evaluation		Hazard controls		Occupational hygiene monitoring	
Health management system records		Other					

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Specify Other:

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment requirements		Personal protective equipment available		Personal protective equipment compliance		Other	

Specify Other:

INCIDENT / NON CONFORMITY REPORTING, INVESTIGATION AND ANALYSIS

Incident / non conformity investigation process		Middle and senior management participation		Incident analysis		Record keeping	
Other							

Specify Other:

EMERGENCY PREPAREDNESS

Emergency preparedness administration		Emergency response plans		Emergency response teams		Emergency equipment	
Mutual aid		Other					

Specify Other:

MEASURING, MONITORING AND AUDITS

Routine process measurements		System audits		Other			

Specify Other:

CORRECTIVE AND PREVENTIVE ACTION SYSTEMS

Corrective and preventive action process		Corrective and preventive action communications		Control of non conforming products		Other	

Specify Other:

POSITION EVIDENCE, PROCESS EVIDENCE, PARTS EVIDENCE, PAPER EVIDENCE:

Attach all relevant documentation e.g. Risk assessments, meeting minutes, Inductions, toolbox talks, appointments, checklists, etc relevant to the accident to this document.

OTHER RELEVANT EVIDENCE:

Any information which has relevance to the accident.

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SUMMARY CHART WITH [illegible] ACTION (S)

Action No.	[illegible]	[illegible]	[illegible]	[illegible]	Corrective Action [illegible]	To be Actioned By	[illegible] Completion Date	[illegible]	Signature of [illegible]	Date Closed [illegible]
1	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	Type of Contact		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
			[illegible]							
			[illegible]							
			[illegible]							
			Conditions							
			Conditions							
			[illegible] Factors							
			Human Factors							
			[illegible]							
			Job Factors							
			Job Factors							
			Job Factors							
			Organisational Factors							
			Organisational Factors							
			Organisational Factors							

INVESTIGATOR	[illegible]	17 JANUARY 2017	
OHS CO-ORDINATOR	[illegible] DE KLERK	17 JANUARY 2017	
GROUP OHS MANAGER			
SUPERVISOR			

Note 1	[illegible]

CONTRACT MANAGER	E FORWARD	17 JANUARY 2017	
CONTRACT DIRECTOR	W BROEKMAN	17 JANUARY 2017	
MANAGING DIRECTOR			

Auditor

George Kleinsmit – WBHO Group OHS Director

Audit Attendees

1. Jonathan Syster
2. Elvis Nyati
3. Timothy Nkabindi

Processes Audited

1. Haul and Fill / Cut Works
2. Concrete Works
3. Excavation Works and Pipe Installations
4. Lifting operations
5. Supplier, Mandatary Contractor Compliance
6. Working at Heights.
7. Heavy Mobile Equipment
8. Communication.
9. Access scaffolding
10. Rebar Bending and cutting
11. Night Shift Work
12. Batch plant operations
13. Man-machine Interface, Traffic Management Plan
14. General Observations

Executive summary

Deviations found

a) Risk Assessments in general is good, but there are too many different revisions in use.

b) Some risk assessments are not identifying all hazards, therefore no controls in place to manage the risk.

c) Not all required signatures are available on all risk assessments.

d) Control measures recorded on the risk assessments are not physically implemented on site.

e) Checklists are on non WBHO control formats and is currently a paperwork exercise.

f) The follow through of the checklist process is not happening, w.r.t. the signing off and follow up of faults found.

g) Wrong checklist are being used for the wrong plant / machine

h) Checklists remain in the books inside the cabs, rendering the effectiveness of the purpose for the pre start inspections futile.

i) Subcontractors are not using a standard checklist for their vehicles and or plant.

j) Also not closing out the process as described in f) above.

k) Service providers / deliveries are of a major concern as they arrive on site without the necessary PPE, Inductions, DSTI's, Risk assessments, etc.

l) DSTI's needs to be done properly by the supervisors. There are gaps in the identification of the hazards and effective control measures to reduce the risks. The quality of the information provided needs to be improved

Recommendations

a) Revise the risk assessments for the audited processes. Make it specific to the site and add previously omitted hazards.

b) Where signatures are required, all required persons shall acknowledge the risk assessment.

c) Get the correct Checklist from the workshops for the different plant / machinery items.

d) Where the process requires the Construction supervisor to sign off on the checklist acknowledging the faults found on the checklist, he should do so and deliver the checklist to the Workshop Foreman who will repair faults and sign off that the faults were repaired. Safety department to draft a procedure for this process.

e) A fail proof process needs to be developed for the service providers / deliveries and this procedure should include the buyers and an effective communication method between the delivery trucks, buyers and site supervision. I further propose that the vehicles be directed to a centralised point of arrival, where a basic check is done on the vehicle condition, PPE adherence and should then be escorted by the Construction Supervisor to the area of storage. A simple induction / DSTI be conducted with the delivery team / service provider, all members sign acknowledgement of the communication, before work starts. After off load the truck be escorted off site again. Pre-determined Risk assessments can be drawn up for the obvious deliveries such as cement, the hazards and risks can then be part of the induction / DSTI. On the PPE, basic PPE such as high vis vest and hardhats can be borrowed to the service provider / delivery team and I suggest steel toe tip gumboots be kept for the people who arrives without PPE. These should be recovered before the service provider / delivery truck leaves site.

f) Further DSTI training for Construction supervisors recommended. This can be an in-house training session.

1. Haul and Fill / Cut Works

a) Risk Management

Well documented. Additional RA's were used as Toolbox Talks to enhance the site awareness. Risk Assessments are done in a team.

Not all hazards identified and therefore not all effective controls for the hazards implemented. Inclement weather conditions, the effects thereof and when it is not safe for the plant / machinery to operate are a few of the hazards not well documented.

Various Risk Assessment formats from DRA in use, making it difficult to track and trace and to manage the risks effectively. Latest revision includes residual risk after all suggested controls are implemented and working effectively. This is what should be used going forward and needs to be continuously monitored against the risk register. Some of the risks could become lower risks and some might be higher if incidents occur.

There are different PTO documents in use. These needs to be standardised and the latest revision should be used.

b) Control

Three Week Rolling Horizon is used for the identification of future activities. PTO schedule is available and is controlled by a weekly report to management. Event reports follow the same process, but no active root cause investigation is conducted. An example is a supplier truck who entered the site and was parked at the site office. The driver had none of the correct PPE, yet the process is that suppliers are to be escorted into the site. No effective control for event notification.
No follow up is conducted on issues raised on the PTO's. On one form, further training was suggested for the Flagmen, but no evidence could be produced whether this took place.

c) Observations

Lack of flagmen due to long weekend on site with all local personnel off site. The supervisors in each section of work have managed this task.

Roads are wet and in parts slippery due to high volumes of rain encountered.

Trenches next to the haul road has barricading in the form of snow netting, but these are damaged when work on the haul road is taking place. Recommend the implementation of berms on the side and edges of excavations to be made visible to the operators / drivers.

2. Concrete Works

a) Risk Management

Well documented and managed. Only two PTO's have been conducted on the mixing operations since 26 April 2017.

DSTI is not fully completed; PTO section on the DSTI format is not completed.

b) Controls

Not all Hazards on the DSTI's are identified. Simple controls like PPE requirements, such as dust masks are not identified or put as a control. These are identified in the Issue Base RA, but not drawn over into the DSTI.

d) Observations

Not all rebar-exposed tips are covered with rebar caps. Access onto the rebar structure is from a made shift wooden staircase. Planks used for the steel fixers are not of equal shape and thickness, could pose a fall risk. Pedestrian walkways at export facility is not defined or managed. Recommend a traffic management plant to include pedestrian walkways between the concrete structure and the laydown area (steel yard).

3. Excavation Works and Pipe Installation.

a) Risk Management

IB004 – Risk ratings needs to be revised. Colour coding does not respond to the Matrix. Not all hazards are identified, such as excavated material left within 1,5m from edges, which will contribute to the collapse of ground. RA communication sheet refer to different SWP numbers.

There are currently 3 RA formats / revisions in use. Some of the formats does not include residual risk and some of the Risk Matrixes are unclear as to the correct use of it.

Continuous Risk assessments i.e. Machine Checklists are with workshop supervisor, Daily excavation checklists.

Pipe installation TSRA's well documented.

DSTI document is fair. Issue Based RA and Task Specific RA documents have different formats, which makes it difficult to trace back to activities or specific items.

Documents submitted for Excavation permit not fully completed.

b) Control

Documents are controlled, but from the start of the project, there has been various changes to Risk Documents, which make the standard difficult to trace.

Hazards and Risks are identified, but not all hazards and risks are identified.

The appointed / responsible person for the activity does not complete daily checklist.

e) Observations

There is a section of trench next to the haul road towards the export facility, which has not been barricaded with snow netting and there is excavated material on the edge of the excavation on the one side. Excavation is filled with water and mud. Local villagers are crossing the trench with homemade bridge-planks. Due to the rain, sides have collapsed into the trenches.

4. Lifting operations

a) Risk Management

Issue based RA does not have a reference to the SWP. The SWP, which is available, contradicts the IBRA.

Do not have an IBRA for a Telehandler. The Telehandler is not in use yet but it will be required to have an IBRA.

Wrong checklist are in use and does not address the lifting tackle of the Mobile crane and truck mounted crane as is required to be checked by the operator.

The quality of the documents sampled not all talking to each other and some documents have been handed out to be re-communicated and has not yet been received back.

Appointment for LMI not available.

Checklists are kept at the Workshop.

The Construction Supervisor and mainly the Workshop Foreman do not sign off mobile Crane checklist. The mobile crane operator uses a Crane truck checklist. On 29/08/2017, the spare wheel is out of order and this is classified as a class "A" hazard, rendering crane inoperable. No indication that the spare wheel has been replaced / repaired. Historically the Construction Supervisor and Workshop Foreman do not sign off the checklists. The checklists in use does not correspond to the WBHO controlled (plant) checklists. The checklist in use for the crane truck and mobile crane does not cater for the daily inspection of lifting tackle as is required.

b) Control

Over inspection from the Safety officers are not evident in the checklists observed. The checklist is not followed through to the responsible persons for repair / maintenance.

Over inspection should be controlled on a vehicle / plant register to compare the checklist on a random sample inspection / control from the safety department.

c) Deviations

Barricading around the drop zones of the cranes are not been complied with as stated in the risk assessments.

Checklist for lifting tackle is critical and a competent person should be appointed to check these at regular intervals.

Checklist for the Crane truck does not include the daily inspection by the operator for the lifting tackle. Lifting tackle is done on a separate checklist specifically for lifting tackle.

Daily operator checklist are not consistent with the company procedures and does not make provision for the lifting tackle to be inspected as is required.

Lifting tackle are inspected monthly by a competent person, but is not signed off by the responsible person.

The crane truck is operating on site with a defective web sling, left back light not working and reverse lights not working. The operator / driver do not indicate these on the checklists as faulty.

There is no ladder for the operator to climb onto the back of the truck where his slings are being stored.

5. Supplier, Mandatary Contractor Compliance

a) Risk Management

The system allows for a service provider agreement through the Conakry office. No proof that this is happening. There is currently no procedure as to what procedures should be followed when the supplier / Delivery arrives at the gate / on site.

No proof that service providers / deliveries agree to the terms of the OHS service provider agreement. No copies available in the site safety files.

b) Control

Currently, there is no control over the service providers / deliveries when they arrive at the site gate. They are not escorted onto the site, they just drive onto site No pre-communication of deliveries, which are on their way to site. On the second day of this audit, a cement delivery truck was escorted to the export facility yard. The delivery truck arrived with a team with virtually no PPE. The Driver of the truck then had a fit because the safety rep of the area stopped him with the supervisor to conduct a DSTI with them and to ensure they are "helped" with some of the basic PPE. We do not need this type of behaviour from a delivery team / service provider.

c) Observations

No proof that Service provider OHS agreements are send to the service providers and no proof that service providers agree to the terms and conditions of the OHS agreement Currently no system in place to stop service providers before they get onto site and to escort the service provider onto the site. No proof of induction conducted on drivers, no check on service provider vehicles for compliance, no check on operators / drivers for minimum PPE requirements.

Various Service providers / deliveries found on site without the necessary PPE, one person was found at the yard sleeping underneath his truck, which was parked at an incline.

6. Working at Heights

a) Risk Management

A fall protection plan is available and implemented on the project. Although not much work at heights are conducted at the moment, the following areas are seen as height work- hooking / unhooking on the roofs of containers, excavations, batch plant, rebar structure at the export facility, working on stockpiles, maintenance / repair on top of plant items, roof work at laydown area and ladder / stairs.

No indication that the fall protection plan was communicated with employees. IBRA and TSRA's address fall protection for the different activities

b) Control

No emergency drill conducted testing the effectiveness of the fall protection plan and suggested rescue plan.

c) Observations

Workshop Assistant Mechanic was observed standing on top of a steel container without any fall protection / fall arrest equipment. Later another employee was found on another container, which was off loaded in the yard, unhooking the chain sling by standing and walking on top of the container without any fall protection / fall arrest equipment.

Excavations are not protected with a barrier preventing persons and or animals falling into excavations / trench.

Batch plant handrails on the staircase does not comply with standards, it is too high and there is no knee rail in place.

7. Mobile Plant / Equipment

a) Risk Management

Risks are identified in various IBRA's and TSRA's.

IBRA and TSRA are well documented, but does not identify all hazards associated with each operation. Daily checklist are not the WBHO standard documentation. Document control is not in place for the documents in use for all Mobile Equipment as well as for LDV's. In general, the Mobile equipment checklists along with the LDV checklists are completed and are available. Some checklist are poorly

b) Control

Construction Supervisors and Workshop Foreman do not always sign off daily inspections. Outdated documents are in use and not compliant with the WBHO procedure manual.

c) Observations

The risk remains that critical faults can be identified by the operator, verified by the Construction Supervisor but not repaired by the workshop as the workshop foreman does not sign off on the daily inspections This could lead to an unsafe mobile equipment / LDV being used and which can cause an accident but the checklist are not being completed, or half completed.

Some checklist are signed by the construction supervisor, but not by the Workshop Foreman.

The above is applicable to the hired in plant companies as well.

8. Communication

a) Risk Management

Communication is through Notice boards, SMI boards, Daily Toolbox Talks, Daily morning Progress meetings, Construction Supervisor Daily DSTI's, TSRA and IBRA discussions. PTO's are conducted per schedule to ensure the employees understand what has been communicated.

Daily SHE meetings with the Client (DRA).

Communication between peers and management is via cell phones.

b) Control

No formal communication process available for communication between WBHO – Client, Client – WBHO, Different levels of communication between management and labour and vice versa, between service provider and WBHO. Recommend a formalised communication process document to be implemented.

c) Deviations

Communication with suppliers and delivery trucks are of a concern. The same goes for the communication between the buyers and site personnel on service providers and deliveries No official procedure in place for the management of this process.

The concern is further, between the management and labour and the follow-up (PTO) to ensure the labour understand task allocated to them / they understand the message which was communicated to them. Reputable translators to be used for the communication process between management and employees.

9. Access scaffolding

a) Risk Management

Risk assessments needs to be compiled for the activity.

Training for the erectors to be arranged and at least two inspectors to be appointed.

No documents available for review as the activity has not started yet.

b) Observations

None to be reported.

10. Rebar Bending and cutting

a) Risk Management

Risks are identified and mitigated in IB 030 RA. SOP not signed off by site management.

b) Control

Controls in the form of guards around nip points are in place, although the guard over the cutting blade is hand controlled and is therefore dependant on human interface. The operation was observed and the operator of the machine closed the guard every time he was cutting the re-bar.

c) Observations

Rebar needs to be stored on wooden supports. Walkways to be kept between the stored rebar.

11. Night Shift Work

a) Risk Management

TSRA 007 is well documented, although no mention is made of the LUX levels for the lighting plants.

b) Control

Lighting plants are strategically placed in the quarry and other parts of the project where night work is conducted. The TSRA mentions fatigue management.

c) Observations

No LUX measurements available for any of the lighting plants.

12. Batch plant operations

a) Risk Management

IB 029 refer to the risk assessment for Batch Plant operations. Although there are various controls listed, some are not complied with. Lock out procedure for the Batch Plant is not available.

SOP is vague in the operation of the batch plant and Needs to be revised for this specific Batch Plant. Pre-start checklist is not available for the Batch Plant.

b) Control

Effective engineering controls are listed on the Risk assessment but is not in place on the plant. Pre-start checklists are not completed.

Operator SWP in place, but needs to be tested for effectiveness.

c) Observations

Guards not in place for pulley at the bottom of the plant – see photograph. The first roller on the conveyor is at eye level and not guarded. I refer you to the Batch Plant Awareness 2013-08 (attached).

Batch plant should be fitted with visible Emergency Stop switch. A specific Lockout procedure to be developed for the Batch Plant.

Concrete run off from the conveyor and the wash facility for the trucks needs to be contained. I suggest the areas to be lined with a plastic lining and to consider sedimentation ponds as per the Plant department Batch Plant installations The area where the trucks receive the concrete is bunded on three sides, is level and has two holes in the bund wall on the one side. This will not prevent contamination of the soil. Recommend a hump be installed on the side, which is not bunded, and the holes to be fitted with a valve, which could be linked to the sedimentation ponds.

13. Man-machine interface, Traffic Management Plan

a) Traffic management plan for the operations is required. This plan should include pedestrian walkways and the management of the interface between man-machine.

14. General Observations

Although the site has not had much labour on site during the visit, I have to comment on the poor ablution condition in the yard. The facilities are dirty and needs some repair. The facilities are used for storage as well, these should be removed.

Cold drinking water at the yard should also be considered. The site has various containers for water.

Due to the rainy season, malaria cases has picked up and continuous awareness needs to be implemented. The main aim is to take as much pre-cautions as possible, but the employees needs to ensure they report as soon as they have symptoms. If Malaria is diagnosed early, the recovery time is much less and the not as dangerous as when it is reported when the individual is properly sick. The Malaria policy needs to be followed.

The OHS structure needs to be formalised. The three Safety officers needs to rotate in such a way that there are always two officers available on the site. Health and Safety reps needs to be utilised as assistance to the three senior safety officers.

All risks management documentation w.r.t. the processes audited should be reviewed for effectiveness and practicality. A general filing clean-up should be considered, as some of the files are over loaded with documents. Monthly self audits needs to be rotated between the three senior safety officers.

End of audit

WBHO CONSTRUCTION (PTY) LTD	OCCUPATIONAL H & S MANAGEMENT SYSTEM	O H S	Section 4.4.4.12.1
	HEALTH AND SAFETY REP CHECKLIST / REPORT	REV	6.3 15/11/13
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OHS Representative Name	Hendrix Sigma	Section / Work Area	RCB LINE
Contract Name	RCB LINE	Date	17.08.2017

Group Description	Sub Group Description	Description	TO STANDARD YES	TO STANDARD NO	Hazard Rating A	Hazard Rating B	Hazard Rating C
01 - PREMISES & HOUSEKEEPING	01.01 - BUILDINGS & FLOORS	Are the Buildings Damaged?	YES	NO	A	B	C
		Are the Floors Damaged?	YES	NO	A	B	C
		Are the Floors Dirty?	YES	NO	A	B	C
		Are the Floors Slippery?	YES	NO	A	B	C
	01.02 - LIGHTING	Is there any Lights Not Working?	YES	NO	A	B	C
		Is there sufficient Lights?	YES	NO	A	B	C
		Is there Glaring (Too Much) of Lights	YES	NO	A	B	C
	01.03 - VENTILATION	Is Natural Ventilation adequate (Enough)?	YES	NO	A	B	C
		Is Mechanical Ventilation adequate?	YES	NO	A	B	C
		Is Mechanical Ventilation Working?	YES	NO	A	B	C
	01.04 - ABLUTION FACILITIES & CHANGE ROOMS	Are Toilets Hygienic?	YES	NO	A	B	C
		Are Urinals Hygienic?	YES	NO	A	B	C
		Are there toilet Seats available?	YES	NO	A	B	C
		Is Toilet Paper Supplied?	YES	NO	A	B	C
		Is Toilet Soap Supplied?	YES	NO	A	B	C
		Are the Towels / Hand Dryers Working?	YES	NO	A	B	C
		Are the Change Rooms hygienic?	YES	NO	A	B	C
		Are Regular Inspections / Control done?	YES	NO	A	B	C
	01.05 - KITCHENS, LUNCH ROOMS & CAFETARIAS	Are the Canteens / Kitchens Hygienic?	YES	NO	A	B	C
		Are the Lunch Rooms Hygienic?	YES	NO	A	B	C
		Are Electrical Appliances safe?	YES	NO	A	B	C
		Are Regular Inspections / Control done?	YES	NO	A	B	C
		Is there any Unauthorised or Private Equipment?	YES	NO	A	B	C
	01.06 - POLLUTION (AIR/DRAINS/ WATER)	Is there adequate Disposal / Collection?	YES	NO	A	B	C
		Is there Routine Checks?	YES	NO	A	B	C
		Is there any contamination?	YES	NO	A	B	C
01 - PREMISES & HOUSEKEEPING	01.07 - AISLES, STORAGE & STACKING & STORAGE PRACTICES	Is Demarcation of Aisles & Storage Areas done?	YES	NO	A	B	C
		Is there Cluttered & Obstructed Areas?	YES	NO	A	B	C
		No Keep Clear or No Stacking Areas under Electrical Distribution Boards and Gear	YES	NO	A	B	C
		Is there Unsafe Stacking and Storage?	YES	NO	A	B	C
		Does the Stacking & Storage Obstructs Flow & Services?	YES	NO	A	B	C
		Is there sufficient Racks and Cupboards?	YES	NO	A	B	C
		Is the Responsible Person Assigned?	YES	NO	A	B	C
		Are the Stacked or Stored Goods in Danger of Collapse?	YES	NO	A	B	C
		Is there any Redundant Material in the Factory?	YES	NO	A	B	C
		Is there any Redundant Material in the Yard?	YES	NO	A	B	C
		Is Regular Inspections to Identify Redundant Material done?	YES	NO	A	B	C
	01.08 - SCRAP,	Is there sufficient Bins?	YES	NO	A	B	C

'A' Hazard Any condition or practice that has potential for causing loss of life body part and or extensive loss of structure, equipment or material. Generally this means that immediate corrective action is required, Activity should be discontinued until the hazard is corrected
'B' Hazard Any condition or practice with the potential for causing a serious injury, illness or property damage. Urgent situation Requires attention as soon as possible
'C' Hazard Any condition or practice with a probable potential for causing a non-disabling injury or non-disruptive property damage. These types of hazards should be eliminated without delay, but the situation is not an emergency

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	HEALTH AND SAFETY REP CHECKLIST / REPORT	REV	6.3 15/11/13
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OHS Representative Name	Hendrix Sigma	Section / Work Area	RCB LINE
Contract Name	RCB LINE	Date	17-08-17

Group Description	Sub Group Description	Description	TO STANDARD YES	TO STANDARD NO	Hazard Rating A	Hazard Rating B	Hazard Rating C
02 - MECHANICAL, ELECTRICAL & PERSONAL SAFEGUARDING	WASTE & REFUSH REMOVAL SYSTEMS	Is there sufficient bin?	YES	NO	A	B	C
		Is there adequate Removal?	YES	NO	A	B	C
		Are there Separate Bins / Containers to Separate Material?	YES	NO	A	B	C
	02.01 - MACHINE GUARDING	Are Guards provided?	YES	NO	A	B	C
		Is there any Loose Guards?	YES	NO	A	B	C
		Is there any Broken Guards?	YES	NO	A	B	C
		Are the Guards adequate?	YES	NO	A	B	C
		Is there any Protruding Shafts?	YES	NO	A	B	C
		Is the Grease Nipple inside Machine Guards?	YES	NO	A	B	C
	02.02 - LOCK-OUT / TAG OUT SYSTEMS	Is the Lock-Out / Tag-Out System Operational?	YES	NO	A	B	C
		Are the Switches Lockable?	YES	NO	A	B	C
		Is there Locks Available?	YES	NO	A	B	C
		Is Broken Equipment / Mobile Equipment Locked / Tagged-Out?	YES	NO	A	B	C
		Are Valves locked-Out?	YES	NO	A	B	C
		Does Written Work Procedures indicates Switches and Valves to be Locked / Tagged Out during Maintenance?	YES	NO	A	B	C
	02.03 - LABELING OF ELECTRICAL SWITCHES AND VALVES	Are they Labeled?	YES	NO	A	B	C
		Are Labels Missing?	YES	NO	A	B	C
	02.04 - LADDERS, STAIRS, WALKWAYS & SCAFFOLDING	Are they Identified?	YES	NO	A	B	C
		Are they on Registers?	YES	NO	A	B	C
		Is there Usage of Unsafe / Dangerous Equipment?	YES	NO	A	B	C
		Is the storage Incorrect / Wrong?	YES	NO	A	B	C
		Are the Pre-Use Inspections Performed?	YES	NO	A	B	C
	02.05 - LIFTING GEAR AND TACKLE	Is the Equipment Identified?	YES	NO	A	B	C
		Are they on Registers?	YES	NO	A	B	C
		Is there Usage of Unsafe / Dangerous Equipment?	YES	NO	A	B	C
		Is the storage Incorrect / Wrong?	YES	NO	A	B	C
		Are Pre-Use Inspections Performed?	YES	NO	A	B	C
		Are Operators Trained?	YES	NO	A	B	C
	02.06 - PRESSURE VALVES	Are there Pressure Vessel Registers?	YES	NO	A	B	C
		Are All Pressured Vessels on Register?	YES	NO	A	B	C
		Is Safety Valve Locked or Sealed?	YES	NO	A	B	C
		Is there Red Line on the Pressure Gauge?	YES	NO	A	B	C
		Are Cylinders correctly Stored?	YES	NO	A	B	C
		Are Cylinders Secured?	YES	NO	A	B	C
		Are Pressure Gauges on Cylinders Defective?	YES	NO	A	B	C
		Are Pneumatic Grinders / Tools on Register?	YES	NO	A	B	C
		Is Pressure Test Certificates Valid?	YES	NO	A	B	C

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'B' Hazard Any condition or practice with the potential for causing a serious injury, illness or property damage. Urgent situation Required attention as soon as possible
'C' Hazard Any condition or practice with a probable potential for causing a non-disabling injury or non-disruptive property damage. These types of hazards should be eliminated without delay, but the situation is not an emergency

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OHS Representative Name	Hendrix Sigma	Section / Work Area	RCB LINE
Contract Name	RCB LINE	Date	18.08.2017

Group Description	Sub Group Description	Description	TO STANDARD YES	TO STANDARD NO	Hazard Rating A	Hazard Rating B	Hazard Rating C
	02.07 - HAZARDOUS CHEMICAL & SUBSTANCE CONTROL	Are Chemicals Identified?	YES	NO	A	B	C
		Is MSDS Available for Chemicals Used?	YES	NO	A	B	C
		Are Alternative Chemicals to be the Approved Supplied on a Regular Basis?	YES	NO	A	B	C
		Is Radio Active Source Locked?	YES	NO	A	B	C
		Is Radio Active Source Identified?	YES	NO	A	B	C
	02.08 - MOTORISED VEHICLES & EQUIPMENT	Are they Identified?	YES	NO	A	B	C
		Is there Vehicle / Equipment Inspections done?	YES	NO	A	B	C
		Is there any Defective Items?	YES	NO	A	B	C
		Is there adequate Driver Training?	YES	NO	A	B	C
		Are Unsafe Driving Habits Observed?	YES	NO	A	B	C
		Is there Unauthorised Drivers?	YES	NO	A	B	C
	02.09 - PORTABLE ELECTRICAL EQUIPMENT	Is it Identified?	YES	NO	A	B	C
		Is it on Register?	YES	NO	A	B	C
		Is there Damaged Cables?	YES	NO	A	B	C
		Is there Damaged Plugs?	YES	NO	A	B	C
		Are the On / Off Switches Working?	YES	NO	A	B	C
	02.10 - ELECTRICAL INSTALLATIONS	Is there Unsafe Installations?	YES	NO	A	B	C
		Is there Open Conductors?	YES	NO	A	B	C
		Are the Distribution Boards locked?	YES	NO	A	B	C
		Is Earth Leakage Working?	YES	NO	A	B	C
		Is there Routine Checks?	YES	NO	A	B	C
	02.11 - HAND TOOLS	Are Defective Tools Used?	YES	NO	A	B	C
		Are Explosive Power Tools Identified?	YES	NO	A	B	C
		Are Explosive Power Tools Checked?	YES	NO	A	B	C
		Are Explosive Power Tools Maintained?	YES	NO	A	B	C
		Are Valves, Levers or Switches Accessible?	YES	NO	A	B	C
	02.12 - ERGONOMICS	Is there Uncomfortable Work Positions?	YES	NO	A	B	C
		Are I Seat / Chairs in Poor Condition?	YES	NO	A	B	C
		Are 90D Areas Demarcated / Marked	YES	NO	A	B	C
	02.13 - PERSONAL PROTECTIVE EQUIPMENT	Is there adequate Training to Identify Safety Signs?	YES	NO	A	B	C
		Is Hard Hat Protection Areas Identified?	YES	NO	A	B	C
		Are Hard Hats Issued?	YES	NO	A	B	C
		Are Hard Hats Worn?	YES	NO	A	B	C
		Is Eye and Face Protection Areas Identified?	YES	NO	A	B	C
		Is Eye Protection Issued?	YES	NO	A	B	C
		Is Eye Protection Worn?	YES	NO	A	B	C
		Are Safety Footwear Areas Demarcated?	YES	NO	A	B	C
		Is Safety Footwear Worn Where Required?	YES	NO	A	B	C

'A' Hazard Any condition or practice that has potential for causing loss of life, body part and or extensive loss of structure, equipment or material. Generally this means that immediate corrective action is required, Activity should be discontinued until the hazard is corrected
'B' Hazard Any condition or practice with the potential for causing a serious injury, illness or property damage. Urgent situation. Required attention as soon as possible.
'C' Hazard Any condition or practice with a probable potential for causing a non-disabling injury or non-disruptive property damage. These types of hazards should be eliminated without delay, but the situation is not an emergency

WBHO CONSTRUCTION (PTY) LTD	OCCUPATIONAL H & S MANAGEMENT SYSTEM	O H S	Section 4.4.4.12.1
	HEALTH AND SAFETY REP CHECKLIST / REPORT	REV	6.3 15/11/13
Record Keeping	Project OHS File, Site Agent, Contracts Director, OHS Officer, Contractors, Archive	PAGE	4 of 6

OHS Representative Name	Hendrix Sigma	Section / Work Area	RCB Line
Contract Name	RCB Line	Date	18-08-2017

Group Description	Sub Group Description	Description	TO STANDARD YES	TO STANDARD NO	Hazard Rating A	Hazard Rating B	Hazard Rating C
		Is the Issued Safety Footwear Adequate?	YES	NO	A	B	C
		Is the Protective Clothing Suitable for Operation?	YES	NO	A	B	C
		Is Protective Clothing Provided where Required?	YES	NO	A	B	C
		Is Clothing Worn / Dirty / Unserviceable?	YES	NO	A	B	C
		Is there Storage Facilities for the Clothing?	YES	NO	A	B	C
		Are Respiratory Equipment Lockers Provided?	YES	NO	A	B	C
		Is Respiratory Equipment Provided?	YES	NO	A	B	C
		Are employees wearing the Respiratory Equipment Provided?	YES	NO	A	B	C
		Is Respiratory Equipment Dirty / Not Serviced / Cartridges Expired?	YES	NO	A	B	C
		Respiratory Requirement Training Has Provided	YES	NO	A	B	C
		Are Noise Areas Demarcated / Marked?	YES	NO	A	B	C
		Is Hearing Protection Issued?	YES	NO	A	B	C
		Is Hearing Protection Worn?	YES	NO	A	B	C
		Is the Safety Harness Areas Demarcated?	YES	NO	A	B	C
		Are Safety Harnesses Issued or Used?	YES	NO	A	B	C
		Are Safety Harnesses Identified / Numbered?	YES	NO	A	B	C
		Are Safety Harnesses Unserviceable / Damaged?	YES	NO	A	B	C
		Are Hand Protection Areas Identified?	YES	NO	A	B	C
		Is Hand Protection PPE Issued?	YES	NO	A	B	C
		Is Hand Protection PPE adequate / Worn?	YES	NO	A	B	C
		Is Hand Protection Provided and Worn?	YES	NO	A	B	C
		Is there Safety Notices or Safety Signs?	YES	NO	A	B	C
		Are Safety Signs Standard?	YES	NO	A	B	C
		Is there Maintenance on Safety Signs?	YES	NO	A	B	C
		Is there Electrical Warning Signs?	YES	NO	A	B	C
		Are Emergency & Safety Signs Obstructed?	YES	NO	A	B	C
		Are Unused Emergency & Safety Signs Removed?	YES	NO	A	B	C
		Is Emergency & Safety Signs Indicating the Wrong Equipment or Directions?	YES	NO	A	B	C
03 - FIRE PROTECTION & PREVENTION	03.01 - EXTINGUISHING EQUIPMENT	Are Equipment Areas Identified?	YES	NO	A	B	C
		Do Equipment Numbers Correspond?	YES	NO	A	B	C
		Is Equipment Obstructed?	YES	NO	A	B	C
		Is Equipment Service Due Date Expired?	YES	NO	A	B	C
		Are Equipment Seals Broken?	YES	NO	A	B	C
		Is there Damage to Equipment, Brackets or Purpose Made Cabinets?	YES	NO	A	B	C
		Is Equipment Standing on Floors?	YES	NO	A	B	C
		Is there Demarcation on Floors?	YES	NO	A	B	C
		Is Equipment Defective?	YES	NO	A	B	C
	03.02 - FIRE ALARMS	Is Fire Alarm System in Place?	YES	NO	A	B	C
		Does everyone have Knowledge of the Alarm System?	YES	NO	A	B	C

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WBHO	OCCUPATIONAL H & S MANAGEMENT SYSTEM	O.H.S	Section 4.4.4.12.1
	HEALTH AND SAFETY REP CHECKLIST / REPORT	REV	6.3 | 15/11/13
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Record Keeping: Project OHS File, Site Agent, Contracts Director, OHS Officer, Contractors, Archive

OHS Representative Name	HENDRIX SIAME	Section / Work Area	RCB LINE
Contract Name	RCB LINE	Date	18-08-2017

Group Description	Sub Group Description	Description	TO STANDARD YES	TO STANDARD NO	Hazard Rating A	B	C
04 - EMERGENCY PLANNING & RESPONSE	04.03 - FIRE DRILL AND EVACUATION	Is Backup System in Place?	YES	NO	A	B	C
		Do Employees have Knowledge of the Fire Alarm System?	YES	NO	A	B	C
		Is there a Fire Team?	YES	NO	A	B	C
		Was Training / Evacuations Practiced?	YES	NO	A	B	C
		Is there an Evacuation Procedure?	YES	NO	A	B	C
		Was a Fire Fighting Drill done?	YES	NO	A	B	C
		Are MSDS Available?	YES	NO	A	B	C
	04.04 - STORAGE OF FLAMMABLES / CHEMICALS & EXPLOSIVE MATERIAL	Are they Becoming More than a Single Days Production?	YES	NO	A	B	C
		Is Separate Storage Provided?	YES	NO	A	B	C
		Are Liquids in Unidentifiable Containers?	YES	NO	A	B	C
		Are MSDS Available for Flammables?	YES	NO	A	B	C
		Is Combustible Material in Flammable Liquid Store?	YES	NO	A	B	C
	04.01 - FIRST AID	Is First Aid Room / Boxes Inadequate?	YES	NO	A	B	C
		Are First Aid Boxes Identified?	YES	NO	A	B	C
		Are Signs Visible / Unobstructed?	YES	NO	A	B	C
		Is First Aider Names on First Aid Boxes?	YES	NO	A	B	C
		Is there a Method / Procedure of Summoning First Aiders / Medical Assistance/	YES	NO	A	B	C
	04.02 - WRITTEN SAFE WORK PROCEDURES & WORK PERMITS	Are Hazardous Jobs / Tasks Identified?	YES	NO	A	B	C
		Is there Written Practices for the Hazardous Job or Task?	YES	NO	A	B	C
		Are Permits Work Areas Identified?	YES	NO	A	B	C
		Is Work Permit System in Place?	YES	NO	A	B	C
		Are Permits Issued & Signed by the Responsible Person	YES	NO	A	B	C
		Is the Inspection of Work Areas Before / After Work Performed?	YES	NO	A	B	C
05 - ENVIRONMENTAL	05.01 - POLLUTION PREVENTION	Are Spillages Cleaned?	YES	NO	A	B	C
		Are Workers Trained on Spillage Cleanup?	YES	NO	A	B	C
		Are Possible Environmental Emergencies Identified?	YES	NO	A	B	C
		Are there Methods for Oil Disposal?	YES	NO	A	B	C
		Are MSDS's Available?	YES	NO	A	B	C
		Is there a procedure for Handling of Hazardous Materials?	YES	NO	A	B	C

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WBHO	OCCUPATIONAL H & S MANAGEMENT SYSTEM	O.H.S	Section 4.4.4.12.1
	HEALTH AND SAFETY REP CHECKLIST / REPORT	REV	6.3 | 15/11/13
		PAGE	6 of 8

Record Keeping: Project OHS File, Site Agent, Contracts Director, OHS Officer, Contractors, Archive

OHS Representative Name	HENDRIX SIAME	Section / Work Area	RCB LINE
Contract Name	RCB LINE	Date	18-08-17

Group Description	Sub Group Description	Description	TO STANDARD YES	TO STANDARD NO	Hazard Rating A	B	C

COMMENTS ON THE CONDITIONS FOUND TO BE SUB STANDARD:

COMMENTS AND ACKNOWLEDGEMENT BY SAFETY CHAIRMAN

There are certain activities on Site due to completion of major works. Please ensure that house keeping is done and all material is stacked accordingly.

Signed Safety Chairman: SAS DATE 22/8/17

ACKNOWLEDGEMENT BY EMPLOYER REPRESENTATIVES

SIGNED SITE MANAGER: ✓ David Bulgay DATE 18/08/17

AUDITOR SIGNATURE: _____ DATE _____

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YEBELO CONSTRUCTION (PTY) LTD	OCCUPATIONAL H & S MANAGEMENT SYSTEM	OH S.	Section 4.4.4.2.5
	PLANNED TASK OBSERVATION REPORT	REV	6.1 09/10/2015
		PAGE	1 of 1
Record Keeping	Project OHS File, Supervisor, OHS Officer, Archive		

PLANNED TASK OBSERVATION REPORT

CONTRACT NAME: 92 RIVONIA ROAD

CONTRACT NUMBER: 460525

NAME OF EMPLOYEE: THEMBELA SITHOLE

EXPERIENCE (MONTHS / YEARS): 05 YEARS

TASK OBSERVED: SETTING OUT

REASON FOR OBSERVATION: IS TO CHECK IF THE PERSON SKILLED PERFORM THE TASK WITHOUT ANY DEVIATION

DATE OBSERVED: 10/05/17

REFERENCE TO RA AND SWP NO:

	YES	NO
Is the correct Personal Protective Equipment used?	✓	
Are the employees physically fit for the task performed?	✓	
Was related training given?	✓	
Is the task performed to standard?	✓	
Are the correct tools being used?	✓	

General comments and comments on revision required to Risk Assessment and / or SWP:

COMPANY MUST PROVIDE PROPER TRAINING SINCE HE WAS TRAINING ON SITE.

Person conducting observation: PETROS NKUNA — Name — Signature

Reviewed with the employee: THEMBELA — Name — Signature

Discussed with: THEMBELA — Name — Signature

Final comments and recommendations:

Follow up date for review:

YEBELO CONSTRUCTION (PTY) LTD	OCCUPATIONAL H & S MANAGEMENT SYSTEM	OH S.	Section 4.4.4.2.5
	PLANNED TASK OBSERVATION REPORT	REV	6.1 09/10/2015
		PAGE	1 of 1
Record Keeping	Project OHS File, Supervisor, OHS Officer, Archive		

PLANNED TASK OBSERVATION REPORT

CONTRACT NAME: 92 RIVONIA ROAD

CONTRACT NUMBER: 460505

NAME OF EMPLOYEE: NKOSINATHI NXUMALO

EXPERIENCE (MONTHS / YEARS): 14 YEARS

TASK OBSERVED: CASTING COLUMNS

REASON FOR OBSERVATION: IS TO CHECK IF THE EMPLOYEE POSSESSE THE COMPETENCY TO DO THE JOB CORRECTLY

DATE OBSERVED: 17/05/17

REFERENCE TO RA AND SWP NO:

	YES	NO
Is the correct Personal Protective Equipment used?	✓	
Are the employees physically fit for the task performed?	✓	
Was related training given?	✓	
Is the task performed to standard?	✓	
Are the correct tools being used?	✓	

General comments and comments on revision required to Risk Assessment and / or SWP:

Person conducting observation: PETROS NKUNA — Name — Signature

Reviewed with the employee: NKOSINATHI — Name — N.Z. NXUMALO — Signature

Discussed with: NKOSINATHI — Name — N.Z. NXUMALO — Signature

Final comments and recommendations:

Follow up date for review:

COMPRAC GAUTENG (PTY) LTD

1	Improvement Notice	0
2	Contravention Notice	2
3	Prohibition Notice	2
4	FIELD SERVICE REPORT NO: 195091-195092	

HEALTH AND SAFETY INSPECTION REPORT

The Health and Safety Inspection was conducted on 1ST AUGUST 2017 for GROWTHPOINT ZENPROP - DISCOVERY NEW HEAD OFFICE (WEST TOWER)

STATISTICS:

Incidents Reported

LTI Lost Time Injury(s)		MTC Medical Treatment Case(s)		FIRST AID		NEAR MISS	
Week	PTD	Week	PTD	Week	PTD	Week	PTD
0	7	0	25	0	29	0	50

Frequency Rates (PTD)

LTIFR Lost Time Injury Frequency Rate	0.13	TIFR Total Injury Frequency Rate	1.14

Hours Worked

Reporting JULY 2017:	1 463 854	Project to Date (PTD):	APPROX. 10 715 561

Injuries and Incidents:
- Nothing to report at this time.

Objectives:
- Ensure good housekeeping is implemented and maintained.
- Ensure access management is implemented and maintained.
- Ensure that scaffold is cleared.
- Ensure that the correct method is maintained.
- Ensure spray painting is performed in an enclosed area and that all employees are equipped with and use the required PPE for the task at hand.

Prohibitions:

	Prohibitions Raised		Prohibitions Closed-out		% Prohibitions closed	
	Week	PTD	Week	PTD	Week	PTD
Unsafe Acts	0	108	0	108	0%	100%
Unsafe Conditions	2	260	0	258	0%	99%
Total	2	368	0	366	0%	99%

Site compliance pertaining to construction non-conformities:

	Complying		Not Complying		
	Week	PTD	Week	PTD	Comment
Visible Leadership	9	117	2	178	Poor housekeeping. Poor access management.
100% tie off	0	7	0	153	
Barricading / Excavations	0	19	0	3[illegible]	
Task Specific Risk Assessments	0	0	1	42	No ventilation while spray painting
Safe Lifting Practices	0	7	0	27	
Plant and Equipment	0	35	0	56	
Personal Protective Equipment	0	14	0	45	
Electrical Installations and equipment	0	1	0	81	
Use of motorized equipment	0	0	0	0	
Toolbox talks / DSTTs done	0	0	0	0	
Lifting machinery	0	0	0	2	
Scaffolding compliance	0	2	2	100	Waste on scaffold, unsafe use of scaffold
Environmental aspects	0	31	0	25	
Total	0	283	5	972	Physical Compliance factor for this inspection

Legal Compliance and Risk Management:
- Nothing to report at this time.

Top Hazards:
- Scaffold.
- Housekeeping.
- Spray Painting.
- Access management.

Positive Observations:
- Nothing to report at this time.

Improvement Opportunities:
- Refer to listed hazards.

SITE INSPECTION REVIEW

Notices Issued/ Action Register

REF	DEVIATION	IN	CN	PH	REMEDIAL ACTION	COMPLETION DATE
P1-4	Housekeeping on the 4th and 5th floor west tower and scaffold on the ground floor was found not maintained were numerous debris and combustible materials was accumulating.		√		Tiber Construction / WBHO Joint Venture to ensure that these areas are cleaned up. Ensure good housekeeping is implemented and maintained.	Immediately
P5	Poor access management was identified where numerous employees was accessing the site by accessing the wall.			√	Tiber Construction / WBHO Joint Venture to ensure that this is addressed. Ensure access management is implemented and maintained.	Immediately
P6	A scaffold inside the atrium on the 5th floor was identified with waste on the platform.		√		Tiber Construction / WBHO Joint Venture to ensure that scaffold are cleared.	Immediately
P7	An employee was identified using a scaffold structure inside the atrium unsafely.		√		All contractors to ensure that the correct method is maintained	Immediately
P8	Employees were identified spray painting in the executive boardroom with no ventilation and not equipped with and use of the required PPE, e.g. masks and safety glasses.			√	Tiber Construction / WBHO Joint Venture to ensure that spray painting is performed in an enclosed area and that all employees are equipped with and use the required PPE for the task at hand.	Immediately

IN – IMPROVEMENT NOTICE: Not critical. Agree a defined period to rectify the situation. *(Not more than 3 days)*
CN – CONTRAVENTION NOTICE: Should relate to a legal or system compliance failure. *(End of shift for rectification)*
PH – PROHIBITION NOTICE: Critical deviation with high risk exposure. *(Work stopped and deviation immediately addressed)*

PHOTO	OBSERVATION & REMEDIAL ACTIONS
P1  P2  P3 	OBSERVATION: Photos 1-4 [illegible] Housekeeping on the 4th and 5th floor west tower and ac on the ground floor was found not maintained were nume debris and combustible materials was accumulating. T... causes the risk of employees sustaining serious injuries in the event of tripping and falling or a fire. REMEDIAL ACTION: Tiber Construction / WBHO Joint Venture to ensure that these areas are cleaned up. Ensure good housekeeping is implemented and maintained. → AREA CLEANED AS OF 01/08/2017 - RELEVANT SUBBIES CALLED AND INSTRUCTED TO CLEAN. 01/09/2017. Picture 3 and 4. COMPLETE 09/08/2017 DAMIEN OS

H.S.I. REPORT	Document Number: HSIGAU-001 · Revision Number: 02 · Date: 21 November 2011

P4

OBSERVATION:
Photo 4

CONTRAVENTION NOTICE - C.R.27(a)(b)

Housekeeping on the 4th and 5th floor west tower and scaffold on the ground floor was found not maintained were numerous debris and combustible materials was accumulating. This causes the risk of employees sustaining serious injuries in the event of tripping and falling or a fire.

REMEDIAL ACTION:

Tiber Construction / WBHO Joint Venture to ensure that these areas are cleaned up. Ensure good housekeeping is implemented and maintained

P5

OBSERVATION:
Photo 5

PROHIBITION NOTICE - C.R.27(f)

Poor access management was identified where numerous employees was accessing the site by climbing the wall. This causes the risk of members of the public sustaining injuries/liability claims in the event of unauthorised entry

REMEDIAL ACTION:

Tiber Construction / WBHO Joint Venture to ensure that this is addressed. Ensure access management is implemented and maintained. Security Guard appointed to monitor the area at all times 14/08/2017.

P6

OBSERVATION:
Photo 6

CONTRAVENTION NOTICE – C.R.16; SANS 10085.1

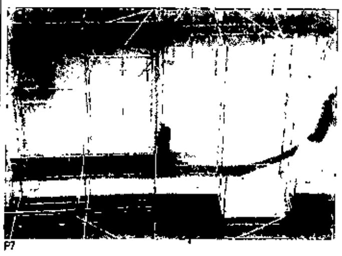
A scaffold inside the atrium on the 5th floor was identified with waste on the platform. This causes the risk of employees sustaining serious injuries in the event of materials falling from height.

REMEDIAL ACTION:

Tiber Construction / WBHO Joint Venture to ensure that scaffold is cleared.

Picture 1 And 6.
All Material Removed 14/08/2017

H.S.I. REPORT	Document Number · Revision Number: 02 · Date: 21 November 2011



P7

OBSERVATION:
Photo 7

An employee was identified [illegible] the atrium unsafely. This causes the risk of employees sustaining serious injuries or fatality in the event of falling.

[illegible]

The offender cannot be identified 14/08/17

P8

OBSERVATION:
Photos 8

Employees were identified spray painting in the executive boardroom with no ventilation and not equipped with and use of the required PPE, e.g. masks and safety glasses. This causes the risk of employees sustaining serious injuries

REMEDIAL ACTION:

Tiber Construction / WBHO Joint Venture to ensure that spray painting is performed in an enclosed area and that all employees are equipped with and use the required PPE for the task at hand.

→ All employees using spray paint to use respirators at all time as all provided. 08/08/17

Divan van Heerden
ComPrac Gauteng (Pty) Ltd
Safety Practitioner
Mobile: 082 907 0606

CURRICULUM VITAE

PERSONAL INFORMATION

NAME:	**Daniel Tettey Anyanumeh**		
PRESENT POSITION:	HSE Officer	IDENTITY NO:	WBHOACB113
NATIONALITY:	Ghanaian	DATE OF BIRTH:	11TH April 1975
MARITAL STATUS:	Married	YEARS IN CONSTRUCTION:	13 Years
LANGUAGES:	English, Krobo, Twi And Ga	YEARS WITH WBHO:	4 Years

EDUCATION AND QUALIFICATIONS:

Qualifications:

- Safety Management
- Occupational Health Safety & Environment
- Occupational Health and Safety Certificate
- Construction Technician Certificate Iii
- Senior Secondary School Certificate.

Education:

Kaneshie SEC. TECH. SCH.	3years + SSSCE (1995)
Accra Polytechnic	3years + CTC III (2003)
Ghana Red Cross Society.	First Aid Certificate For Drivers (2016).
University Of Mines And Technology.	Safety Management (2015).
Logos Business School.	Occupational Health, Safety & Environment Management Certificate (2015).
Ghana Red Cross Society.	First Aid Certificate For Drivers (2012).
St. John Ghana.	First Aid At Work Certificate (2012).
Institute Of Commercial Management (ICM).	Occupational Health And Safety Management Certificate (2010).
National First Aid And Ambulance Drivers Training Centre (NAFAAD).	Automated Exernal Defibrillator Certificate (2010). First Aid Certificate (2010). Cardio Pulmonary Resuscitation Certificate (2010).

WBHO	Curriculum Vitae Template	Doc No.	TEN C-B 016
		Rev. No.	00
		Rev. Date	06/05/2015

EXPERIENCE

YEAR	POSITION	DESCRIPTION	VALUE Millions
		WBHO CONSTRUCTION (PTY) LTD.	
2016 – 2017	HSE Officer	Kumasi City Mall	US$ 50m
2015 – 2016	HSE Officer	Alvanti Place Project. (Bulk Earthworks).	US$ 1.8m
2015	HSE Officer	Achimota Retail Centre	US$ 33m
2013-2015	HSE Officer	West Hills Mall – Ghana	R490m
		PREVIOUS EMPLOYMENT	
Feb 2013 – Aug 2013	HSLP Officer	M. Barbisotti And Sons Limited (Mbs) La Beach Towers.	
Feb 2012 – Feb 2013	HSLP Officer	M. Barbisotti And Sons Limited (Mbs) Newmont Gold Mines – Akyem Project.	
Jun 2008 – Feb 2012	Safety Officer	Ghana And Italy 5 Stars Hotel Deveelopment (G&I 5* Hotel); Movenpick Ambassador Hotel.	
Mar 2007 – Jun 2008	Site Engineer	Sierra Construction Limited; Simulator Building For Ghana Airforce Base.	
Jul 2005 – Dec 2006	Site Supervisor	Sequential J/A Construction; Africa Concrete Product (Acp) Estates At Pokuase.	
Sep 2004 – Jul 2005	Safety Officer	Bet Ghana Limited.	
Nov 2003 – Aug 2004	TUTOR	National Service; Lakanti L/A J.S.S. Jasikan District.	

WBHO	Environmental Policy Statement	Doc No.	POL-ENV 01
		Rev. No.	00
		Rev. Date	31/01/2017

ENVIRONMENTAL POLICY STATEMENT

WBHO is a construction company conducting business in the building, civil, roads, earthworks and mining sectors. As a company, we believe in the constitutional right of all employees, clients and communities to exist and work in an environment conducive to sustainable development and are committed to the highest standards of environmental protection throughout all phases of construction by upholding the basic principles of environmental management. As such, WBHO Construction fully acknowledges a moral and legal responsibility for the safeguarding of the environment and the well-being of all those affected by the Company's construction activities.

WBHO Construction recognizes that:

- A project exists within a physical and socio-economic environment which must be respected.
- All environmental impacts of a project should be addressed and managed responsibly.
- All interested and affected parties have the right to information relating to the environmental impacts of a project.
- The broader community should, if possible, enjoy sustainable benefit from a project.

In order to limit adverse effects on the environment and continually improve environmental performance WBHO shall:

1. Implement, document, review and maintain an Environmental Management System in line with acceptable international standards.
2. Comply with applicable environmental legislation and all other requirements.
3. Ensure communication of this Policy and the Environmental Management System through induction and training.
4. Identify and manage significant aspects in order to prevent environmental degradation and harm arising from construction activities.
5. Avoid, reduce, reuse or recycle waste as far as possible.
6. Measure, monitor and report on our direct and indirect emissions in order to reduce greenhouse gas emissions associated with climate change.
7. Ensure transparent communication with all interested and affected parties on environmental matters.
8. Periodically undertake audits to assess the effectiveness of the Environmental Management System to ensure continual improvement and compliance.
9. Review progress on objectives by reporting on environmental performance.

E.L. Nel: _____ **Date: 31/01/2017**

Chief Executive Officer

Unity Terminal Kpone

GHANA PORTS AND HARBOURS AUTHORITY

WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 01
SITE ESTABLISHMENT

APPROVAL			
PREPARED BY	SUBMITTED BY	APPROVED BY	APPROVED BY
DATE	DATE	DATE	DATE
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE

DOCUMENT CHANGE / REVISION RECORD			
REVISION	DATE	SECTION	REASON FOR REVISION

TABLE OF CONTENTS

1 PURPOSE

The purpose of this method statement is to clearly elaborate on the overall methodology including equipment and material to be used by WBHO construction during the site camp establishment.

2 SCOPE

The method statement relates to the clearing and establishment of site offices, parking area, kitchen, ablution facilities, storage containers, waste management area and laydown area at the project.

3 REFERENCES

Facilities Regulations - OHS Act Section 85 of 1993

Occupational Health and Safety Act 85 of 1993

WBHO Environmental Management System

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Clearing & topsoil removal	-	Earthworks foreman / grader operator
Fencing	-	Fencing contractor
Establishment	-	Site Agent / Manager
Offloading of containers	-	Crane truck operator
Waste management	-	Waste contractor

5 REQUIREMENTS

Suitable flat area big enough for dimensions of layout plan.

Site establishment to be properly fenced off.

Accessible from main road, without being a danger to traffic.

Site establishment in environmentally acceptable area with limited extent.

Contract agreement and permission letter of landowner.

Storm water and erosion control.

6 METHOD

Construction Camp

- The construction camp shall be located at the position agreed with by the ECO.
- The construction camp may not be located in the wetland conservation area.
- The size of the construction camp must be minimized to the best possible minimum size.
- The construction camp must be well demarcated with adequate signage and fencing.
- Alien vegetation re-growth must be controlled throughout the entire site during the construction period using mechanical and chemical removal.
- Herbicides may be used to control listed alien weeds and invaders only.
- The Material Safety Data Sheets (MSDSs) for the herbicides must be made available to the ECO on request.
- Herbicides are to be stored in the hazardous materials storage area.

Sensitive areas

- The wetland conservation area must be well demarcated and signed
- The chrome remediation area is to be fenced off.

Stormwater drainage

- Attend to drainage of the construction camp to avoid standing water or sheet erosion.
- The drainage system at the construction camp shall be checked regularly to ensure water flow remains unobstructed
- Stormwater control must be maintained and flow must be directed into existing stormwater infrastructure
- Municipality stormwater system inlets must be covered by means of biddim throughout construction period.
- Build up silt and sediment must be removed as and when necessary.

Stockpiles

- Stockpiles created during site establishment are to be maintained as flat as possible and must not be adjacent to the wetland conservation area
- Stockpiles to be covered for wind screening to prevent soil loss
- Topsoil stockpiles must be labelled as a "no-go area" ensure to erect the signage.

Material Storage

- All material storage areas must be identified and designated within the construction camp.
- An area for fuel storage must be identified and must be secured within the construction camp. No excessive amounts of fuel should be stored on site.
- The hazardous store area must be designated within the construction camp
- The store must be clearly demarcated and sign boarded and must have fire extinguishers in close proximity
- An inventory of goods stored must be maintained and updated weekly

- Hazardous chemical working / refuelling areas must be bunded with an impermeable liner to protect groundwater quality. This can be done using a plastic liner covered with soil.

Waste

- Bins and / or skips must be provided within the construction camp and at convenient intervals.
- The bins and skips must be clearly labelled according to the type of waste they handle.
- The waste management area is to be designated and demarcated within the construction camp.
- Storage of hazardous waste must be within a hard surfaced, bunded area located under cover
- There must be a regular schedule for removal of waste.
- Appropriate and adequate spill kits must be available at the site camp.

Eating Area

- A designated shaded eating area will be established and adequate seating must be provided.
- Excavation for containment tank will be coordinated with the engineer. All safety specification for excavation to be followed like barricading.
- Bins with lids must be provided for domestic waste. Bins to be emptied into skips on a regular basis.

Drinking water

- Drinking water shall be sourced from a municipality source

Construction Water

- Construction water shall be sourced from municipality sources
- No water shall be extracted from a borehole or a river without proper documentation.

Ablution facilities

- Chemical toilets and conservancy based ablution units may be used.

ANNEXURE 1 – SITE LOCATION & LAYOUT

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GHANA PORTS AND HARBOURS AUTHORITY

WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 02
STORMWATER MANAGEMENT

APPROVAL			
PREPARED BY	SUBMITTED BY	APPROVED BY	APPROVED BY
DATE	DATE	DATE	DATE
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DOCUMENT CHANGE / REVISION RECORD			
REVISION	DATE	SECTION	REASON FOR REVISION

TABLE OF CONTENT

1 PURPOSE

The purpose of this document is to describe the methodology to be followed at the project for the management of stormwater.

2 SCOPE

The method statement is applicable to the construction works been carried out at the project for the duration of the contract.

3 REFERENCES

WBHO Environmental Management System

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Reasonable measures to limit erosion and sedimentation.

Maintenance of the system.

6 METHOD

6.1 Stormwater management

- Levelled areas between offices will be protected from erosion and storm water by a layer of G5 material or well compacted or vegetation.
- Storm water channels should be excavated at the construction site to encourage the flow of water to the municipality system.
- Stormwater from site offices must be channelled to encourage water flow into the street municipality stormwater system if applicable or
- Encourage the flow of water naturally into the streams
- Ensure that the area of water stagnation is identified and repaired as such.
- The municipality stormwater inlets should be covered by means of biddim if applicable to trap silt and sediment loads
- Ensure that the trapped debris is always removed after significant rains.
- Where feasible v-drains will be used to channel surface water run-off
- Silt fences (geotextile fabric) maybe installed at the exit points of the drains and inlets of the municipal storm water system (See annexure A).
- Storm water drains to be inspected every 7 days or after any precipitation more than 10mm for damage or sediment build-up
- Temporary stockpiles should be monitored for erosion activities.
- Slopes on site must be monitored and alternative measures must be taken in cases of erosion.

ANNEXURE A: Use of geotextile covers

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WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 03
SPILL MANAGEMENT

APPROVAL			
PREPARED BY	SUBMITTED BY	APPROVED BY	APPROVED BY
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REVISION	DATE	SECTION	REASON FOR REVISION

TABLE OF CONTENT

1 PURPOSE

The purpose of this document is to describe the methodology to be followed at project for the management of spill incidents

2 SCOPE

The method statement is applicable to the construction works been carried out at the project for the duration of the contract.

3 REFERENCES

WBHO Environmental Management System

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Main contractor and sub-contractors are required to comply with the following:

- Mitigating, reporting, investigating and closing off incidents as per this document.

6 METHOD

6.1. Storing of Hazardous

6.1.1 Fuel: Concrete Bunds

- Areas designated for storage of hydrocarbons must be illustrated on a site drawing and approved by the engineer.

- The bunds must be able to contain 110% of the volume of the stored material.
- The bund must be fitted with a drainage valve that can be closed.
- Concrete bunds established for hydrocarbons stored in smaller volumes and in smaller containers such as 220L drums should be fitted with a roof where possible and relevant MSDS.
- Bunds must be labelled accordingly

6.1.2 Liquids, gels, paints, adhesives

- Storage areas must be lockable, ventilated and with an impervious floor area with a bund of adequate containment (at least 1 5 times the volume of the combined contents) for potential spills or leaks.
- Storage areas must display the required safety signs depicting "No Smoking", No Open Flames" and "Danger".
- Containers must be clearly marked to indicate contents as well as safety requirements
- Sufficient care must be taken when handling the materials to prevent pollution. Training on the handling of dangerous and toxic materials must be conducted for all staff prior to the commencement of the use thereof.

6.2 Storing of Gas

Gas Stores

- Should be stored according to SANS 10087-7

6.3 Hazardous bins

- Bins to be enclosed and clearly marked, placed on impermeable surfaces within a bund.

6.4 Spill Kits

- Spill kits which can be able to contain contents of 200L should be strategically placed closer to the hazardous storage facilities onsite.
- Hydrocarbon spill bags must be provided for in the construction trucks
- Properly marked

6.5 Spill Drills

- Emergency Spill drills may be conducted at the intervals as per project's training matrix, refer to ENV section 3.6.5 of the EMS.

6.6 Response

6.6.1 Spill Reporting (See Annexure A for more information)

- All spills no matter how insignificant must be reported to the Safety officer and recorded.
- Information to be recorded for minor spills (less than 5L) includes the date of the incident, location of the incident and the remedial action. This must be documented on register as per EMS 3.6.3
- In the event that the spill is greater that 5L an incident report as per EMS 3.6.2 must be completed and closed off. The incident register as per EMS 3.6.3 must also be completed as a cross reference for the incident report.
- Any spills greater than 20L must be reported as per above and include an incident investigation to determine the root cause of the spillage and determine corrective action to prevent similar incidents in the future.
- All investigations must be signed off by the relevant Site Agent.

6.6.2 Spill Containment and Cleaning

- Ensure that all the relevant MSDS's are readily available on site for the materials being utilized.
- In the event of a spill ensure that it is contained by any means possible until the oil spill kit arrives with the correct containment material.
- This is especially important when such a spill occurs near a body of water.
- On an impermeable surface make use of the absorbent materials supplied in the spill kit.
- On porous surface such as soil, excavate the contaminated material as soon as possible to prevent it from leaching further down.
- Place the contaminated material in the bags provided and remove to the hazardous storage facility at the site lay down areas.
- Store the contaminated material safely until it can be removed by an approved service provider.

6.6.3 Follow up actions

- Ensure that all the necessary reporting documentation has been completed.
- Return to the spill site to ensure that the area is satisfactorily cleaned.
- Ensure that all relevant safe disposal documentation is on file from the service provider before the incident report can be closed off.
- Ensure that mitigation measures put in place are being adhered to in order to prevent a reoccurrence of the incident.

ANNEXURE A – EMS Incident Protocol (ENV 3.6.1)

LOW SIGNIFICANCE	**Minimal environmental impact** • No disruption of project • No public concern or attention • Low level compliance and legal issues • Remediation immediately	• Ensure spillage is contained – drip tray • Ensure that no further damage take place • Record all the details of the incident. • Photographs • Consult MSDS • Clean up spill with spill kit in prescribed manner • Toolbox talk	• Immediate Supervisor • Project DEO • Workshop mechanic and / or service crew • Storemen	• Incident Report • Checklist • Any documentation required by the Client. • Revise method statement
MEDIUM SIGNIFICANCE	**Medium environmental impact** • Brief disruption to project or part there off • Local public attention and concern • Minor legal issues, non compliance and breach of law • Short term remediation	• Ensure no further spillage or damage • Record all the details of the incident • Photographs • Consult MSDS • Clean up spill with spill kit in prescribed manner • Drizit or Rapid Spill Response if spill is to big for spill kit • Environmental awareness / re-induction	• Immediate Supervisor • Project DEO • Site Agent / Manager • Environmental Dept	• Incident Report • Investigation form • Checklist • Any documentation required by the Client • Revise existing method statement • Method statement for future prevention • Site instruction for rehabilitation
HIGH SIGNIFICANCE	**Serious environmental impact** • Partial shutdown of project or part there off • Regional public attention and concern • Serious breach of law, prosecution and / or penalties • Medium term remediation	• Ensure no further spillage or damage • Secure and evacuate area • **DRIZIT / RAPID SPILL RESPONSE** • Notify emergency services • Notify authorities • Record all the details of the incident • Photographs / MSDS's	• Immediate Supervisor • Project DEO • Site Agent / Manager • Emergency services • Drizit / Rapid Spill • Affected parties • Environmental Group Manager • Divisional MD • Regional / National authorities	• Incident Report • Investigation form • Checklist • Any documentation required by the Client. • Revise existing method statement • Method statement for future prevention • Site instruction for rehabilitation • Report to regional / national authorities

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DISASTER	**Extreme environmental impact** • Substantial or total loss of project • National / International public attention • Considerable penalties, multiple lawsuits, prosecution and jail terms • Long term remediation	• Ensure no further spillage or damage • Secure and evacuate area • **DRIZIT / RAPID SPILL RESPONSE** • Notify emergency services • Notify authorities • Record all the details of the incident • Photographs / MSDS's	• Immediate Supervisor • Project DEO • Site Agent / Manager • Emergency services • Affected parties • Environmental Group Manager • Divisional MD • CEO • Regional / National authorities	• Incident Report • Investigation form • Checklist • Any documentation required by the Client. • Revise existing method statement • Method statement for future prevention • Site instruction for rehabilitation • Report to regional / national authorities

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GHANA PORTS AND HARBOURS AUTHORITY

WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 04
CONTAMINATED WATER MANAGEMENT

APPROVAL			
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DOCUMENT CHANGE / REVISION RECORD			
REVISION	DATE	SECTION	REASON FOR REVISION

TABLE OF CONTENT

1 PURPOSE

The purpose of this document is to describe the methodology to be followed at the project for the management of wastewater

2 SCOPE

The method statement is applicable to the construction works been carried out at the project for the duration of the contract.

3 REFERENCES

WBHO Environmental Management System

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Maintenance of the system.

6 METHOD

6.1 Office camp

- Wastewater generated in the camp will be channelled to a conservancy tank via a temporary sewerage system. The accumulated wastewater will be removed from site by an approved contractor until permanent systems are put in place. There after waste water will be connected into the municipality sewerage system.
- The conservancy tank will be buried and installation will take place in accordance with the method outlined in the installation guide
- The temporary sewer line will consist of a 110 diameter UPVC sewer pipe class 51. The pipeline will be buried in a trench dug by a Tractor Loader Backactor (TLB). The pipeline will be laid at a fall of no less than 1:100 in the trench. Proper plumbing compression bends will be used in the line of the pipe At every bend in the pipe a rodding eye will be installed. This is to allow access with a sewer rod to unblock the line when necessary.
- On completion of the pipeline it will be pressure tested to check for any leaks. If the test is satisfactory, the trench will be backfilled. The toilets will be connected to the line from inside the building.
- Until these facilities are constructed, temporary toilets will be made available in the laydown These mobile chemical toilets will be supplied and disposed by a licensed transporter at a permitted sewage treatment plant
- Once the sewerage system has been installed and toilets connected, the chemical toilets shall be removed

6.2 Workshop

- Contaminated water generated in the workshop area shall be be contained by a steel floated and bunded concrete floor, channelled to a sand, oil and grease trap.
- The grease trap will be inspected on a weekly basis by the workshop manager and an approved contractor shall be contacted to clean the system when required.
- Water that has passed through the trap will be contained in a 40 000 litre conservancy tank. Water will be tested for pollutants and used for dust suppression if results are to specification.

6.3 Wash bay

- Contaminated water in the wash bay area shall be contained by a steel floated and bunded concrete floor, channelled to a lined water settlement system.
- Hydrocarbons in the system shall be absorbed by a floating oil sock placed in every compartment. These oil socks shall be inspected regularly and replaced when necessary.
- Water in the final settlement tank shall be tested for pollutants and pumped into water tankers to be used for dust suppression if test results are to specification.
- If specifications are not met, water will be pumped into the evaporation pit.
- Contaminated water storage areas shall not be allowed to overflow

6.4 Dewatering

- Dewatering of excavations, as a result of ponding of rain water, shall be carried out by mechanical pumping of water into the stormwater system through a biddem filter.
- Drip trays shall be positioned under pumps to contain any possible spillage
- If water is contaminated, this must be reported to the EO by the driver. Absorbent pads and oil sock (available in wheelie bin spill kit at every working area) will be used to absorb spill. Water will be tested as is, and pumped into the water truck and decanted if hydrocarbon levels meet grey water standards/ are satisfactory.

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WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT

Number 05

HANDLING, STORAGE AND MANAGEMENT OF HAZARDOUS

APPROVAL			
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DOCUMENT CHANGE / REVISION RECORD			
REVISION	DATE	SECTION	REASON FOR REVISION

TABLE OF CONTENT

1 PURPOSE

The purpose of this document is to describe the methodology to be followed at the project for the management of hazardous storage and waste disposal thereof.

2 SCOPE

The method statement is applicable to the construction works been carried out at the project for the duration of the contract.

3 REFERENCES

WBHO Environmental Management System, Revision 03, 2012

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Reasonable measures to limit erosion and sedimentation.

Maintenance of the system.

6 METHOD

6.1 Fuel Tanks Storage

- Ensure that all relevant permits are in place for the storage of hazardous/flammable materials
- Bulk fuel storage tanks must be placed out of the way of traffic to reduce the risk of ruptures, further than 3.5 meters from buildings, and away from storm water inlets to avoid water contamination.
- Tanks should be stored inside an impermeable bunded area that can contain 110% of the total volume.
- Tanks should be as far removed from occupied buildings / containers as possible.
- Bunded area to be protected by an earth berm to prevent plant from colliding with structure.
- The bund should have a valve and a sump so that contaminated rainwater can be safely drained.
- The filler taps of the tank (refuelling hose) must be inside the footprint of the bund wall.
- Ensure that all the relevant MSDS are available at the point of storage.

6.2 Hazardous Waste Storage Facilities

- The surface shall be hardened, impenneable and bunded
- A 6m^3 enclosed skip shall be sourced from a competent waste management company
- Hydrocarbon spill kit must be provided
- Fire extinguishers must be in place
- The provided skip must be properly labelled as hazardous.
- They must be easily accessible for removal of waste from site
- The skip must only accommodate hazardous waste
- Ensure that the supplied skip is intact with no holes
- Material Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site.

6.3 Waste Disposal

- A licensed waste management company shall collect, transport and dispose waste (Annexure A must be completed where applicable by the designated personnel onsite)
- Waste shall be disposed at a licensed facility (Annexure A must be completed where applicable by the site designated personnel)
- Proof of waste collection (manifests) and disposal (safe disposal certificates) shall be filed onsite

6.4 Waste Records

- Copy of all applicable waste management facility permits where waste is removed to.
- Safe waste disposal documentation
- Copies of waste management checklist.
- Copies of waste collection and disposal receipts
- Annexure A Waste Management checklist shall be completed where applicable upon the use of a service provider for disposal and recycling of waste.

6.5 Awareness

- Waste management awareness shall be conducted with employees on site through the mandatory site induction and through toolbox talks.
- Waste prevention and minimisation activities shall be discussed during monthly subcontractor coordination meeting to reinforce project goals.
- Subcontractors will be expected to make sure all their employees comply with this method statement.

6.6 Other Requirements

- Concrete waste must be disposed of at an appropriate waste site
- A separate drum must be available for storage of contaminated soil
- A sufficiently sized skip/drums should be available, in particular the south-west of the site, where potentially chrome contaminated soil can be stored until disposal at a registered landfill site.
- Transport of hazardous materials around the site must be limited, and materials must be transported in
- sealed bags/containers.
- Mixing/decanting of all chemicals and hazardous substances (including cement mixing) must take place
- either on a tray or on an impermeable surface. Waste from these must then be disposed of at a suitable waste site
- Cement mixing is not permitted where run off can enter any stormwater drains.
- Decanting of any chemical must be done within the confines of a suitably sized drip tray.
- Decanting from large containers (e.g. 210L drums) must be done using a hand pump.
- Drip trays are to be cleaned out daily and material collected disposed of as hazardous waste.
- Spill kits are required to be checked regularly and maintained.
- Empty cement bags are to be disposed of as hazardous waste

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GHANA PORTS AND HARBOURS AUTHORITY

WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 06
AIR AND NOISE QUALITY

APPROVAL			
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WBHO	ENVIRONMENTAL MANAGEMENT SYSTEM METHOD STATEMENT	ENV Section 3.4.1 REV 00 | 04/07/2016 PAGE 2 of 4

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WBHO	ENVIRONMENTAL MANAGEMENT SYSTEM METHOD STATEMENT	ENV Section 3.4.1 REV 00 | 04/07/2016 PAGE 3 of 4

1 PURPOSE

The purpose of this document is to describe the methodology to be followed at the project for the management of air and noise.

2 SCOPE

The method statement is applicable to the construction works been carried out at the project for the duration of the contract.

3 REFERENCES

WBHO Environmental Management System, Revision 03, 2012

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Maintenance of the system.

6 METHOD

6.1 Dust Management

- A water tanker will be deployed to spray water on dust prone areas, particularly roads.
- Dust prone areas will be treated as and required

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WBHO	ENVIRONMENTAL MANAGEMENT SYSTEM METHOD STATEMENT	ENV Section 3.4.1 REV 00 | 04/07/2016 PAGE 4 of 4

- During high wind conditions intervals may be increased as per instruction of the Environmental Officer.
- The driver shall be instructed to travel at a constant speed while spraying and to refrain from stopping the vehicle with sprayers on, unless instructed by a flagman. This will prevent excessive runoff of water.
- Water will be obtained from permitted sources until such time that supplies are available on site
- All vehicles shall adhere to the speed limits as indicated and use the shortest possible haul distance to minimise the generation of dust.
- The stockpile will be sprayed by water tankers to reduce the effect of dust in dry and windy conditions.
- 19-22mm crusher stone will be spread by the offices in the laydown area or alternatively vegetating the area with indigenous vegetation.
- Employees will be issued with FFP2 standard dust masks if required

6.2 Noise Management

- A complaints register must be maintained on site at all times and be made accessible to the surrounding community (or any affected person(s)) to record complaints regarding noise and/or excessive levels of dust. Any complaints should be investigated.
- Screening/ enclosures or barriers are to be used where feasible to reduce noise impacts if complaints occur
- Speeding must be prohibited.
- Construction vehicles must be regularly maintained to ensure that excessive emissions and noise are controlled.
- When demolishing structures on site consider methods which produce low dust and noise levels.
- Limit noisy activities to daytime after 07h30 and before 17h00 on weekdays.
- Work outside of the standard operating limits could include emergency work, safety work(s), and delivery of materials or equipment. This needs to be discussed prior to commencement and when feasible before it actually occurs.
- Stationary plants generating noise (generators and compressors) are to be placed as far away from any residential properties as possible.

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WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 07
SPOIL DUMPING

APPROVAL			
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1 PURPOSE

The purpose of this document is to describe the methodology to be followed at the project for the management of Spoil sites.

2 SCOPE

The method statement is applicable to the construction works been carried out at the project for the duration of the contract.

3 REFERENCES

WBHO Environmental Management System

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Maintenance of the system.

6 METHOD

6.1 Construction

- A detailed plan on spoil site location must be submitted to the client.
- The designated storage area must be kept fenced or secured to keep people and animals out. This area must be located in or near the construction camp enclosure.
- General building/other materials include non-hazardous materials and chemicals. These must be kept in this designated area.
- Materials must be stacked (as indicated in Annexure A) in a way that they cannot fall and cause injury or damage to property or the natural environment.
- There must be a separate, clearly demarcated spoil site for potentially contaminated soils.
- The soil is to be tested for hexavalent chromium and disposed of accordingly.

6.2 Rehabilitation

- Side tipping of spoil and excavated materials shall not be permitted – all spoil material must be disposed of as directed by the Engineer.
- No building rubble, spoil materials or waste materials may be dumped on any adjoining sites.
- The remaining building materials must be removed from the site.
- All excess material and rubble must go to an approved, designated landfill and a safe disposal certificate must be obtained.

Annexure A: Spoil Site

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METHOD STATEMENT
Number 08
TRAINING

APPROVAL			
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TABLE OF CONTENT

1 PURPOSE

The purpose of this document is to describe the methodology to be followed at the project for the environmental awareness training.

2 SCOPE

The method statement is applicable to the construction works been carried out at the project for the duration of the contract

3 REFERENCES

WBHO Environmental Management System, Revision 03, 2012

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Maintenance of the system.

6 METHOD

6.1 Training

- A suitable venue with facilities needs to be provided where environmental awareness courses as well as inductions can be provided for employees, as well as employees of any sub-contractor employed by the principal contractor.
- The training and induction will be done in the site induction facility. Information posters shall be erected in the building, depicting actions to be taken to ensure compliance with environmental law and specifications
- A training officer will be appointed to handle induction and basic environmental awareness training
- Basic Environmental Awareness Training will be presented by means of a Toolbox Talk (Part of the WBHO EMS)
- General Environmental induction (Annexure A) and Site Specific Safety induction will be presented at the same time, before any work starts
- In the event of an accident or emergency during induction, procedures will be followed as outlined in MS 7 Emergency Response.
- No more than 20 people shall attend a session at a time
- A session is expected to last 30minutes and will be held in the morning during normal working hours on a daily basis or as and when required
- All employees shall sign an attendance register upon completion of induction and training
- Further training will be conducted in the form of Toolbox Talks as per the WBHO Environmental Management System
- Refresher courses shall be held on a quarterly basis as determined by the register
- Environmental induction will be refreshed on an annual basis
- Proof of attendance needs to be held on file.

ANNEXURE A: General environmental induction

GENERAL ENVIRONMENTAL INDUCTION

1. Each employee remains responsible for his or her actions towards the environment.
2. All environmental incidents must be reported to the environmental or safety officer and stopped immediately if possible.
3. No persons shall be allowed to litter on site. Use bins or collect refuse and take it to a designated area in the yard. All refuse bins or skips to have lids or netting
4. All waste and residue shall be collected and removed from site to an appropriate waste disposal facility and waybills will be kept on file. Waste generation must be limited as far as possible.
5. Everyone will be made aware of restricted or sensitive areas. Restricted or sensitive areas will be demarcated and declared "NO GO" areas during the construction phase. No unauthorized person will enter such an area.
6. All environmental signs and notices displayed must be obeyed
7. No person would be allowed to interfere with local fauna through harassing, feeding, fishing, hunting or snaring of any animals. If animals are spotted and need to be removed, inform the environmental or safety officer who will contact the appropriate people.
8. No person would be allowed to interfere with local flora through gathering firewood, planting, removing or pruning any shrubs or trees.
9. No vegetation will be damaged or cleared unless permission or permits are in place.
10. No vegetation will be damaged or cleared outside the demarcated construction areas.
11. No vehicles or persons will travel outside the demarcated areas or off existing roads. No short cuts will be allowed.
12. The use of ablution facilities will be strictly enforced. No urinating or defecating on site.
13. The use of eating facilities will be strictly enforced and scrap food will be contained in refuse bins which will be cleaned out regularly to prevent infestation of vermin.
14. No wastage of water will be allowed on site.
15. No water will be used from any source unless permission or permits are in place.
16. No fires are allowed anywhere on site, except in a designated and constructed braai area.
17. No smoking on site, except in the designated smoking areas. Butts and matches in bins.
18. No pollution of air (dust and smoke), water (litter, oil, fuel, chemicals) or soil (litter, oil, fuel, chemicals) will be permitted on site.
19. Noise must be kept to acceptable levels and no working outside the stipulated work hours will be permitted.
20. No persons are allowed to discuss environmental issues with interested and affected parties. Please refer them to project management.

Acknowledge by	Presented by
Name _____	**Name** _____
Co. No. _____	**Co.No.** _____
Signature _____	**Signature** _____
Date _____	**Date** _____
Contract _____	

Unity Terminal Kpone

GHANA PORTS AND HARBOURS AUTHORITY

WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 09
DUST CONTROL

APPROVAL			
PREPARED BY	SUBMITTED BY	APPROVED BY	APPROVED BY
DATE	DATE	DATE	DATE
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE

DOCUMENT CHANGE / REVISION RECORD			
REVISION	DATE	SECTION	REASON FOR REVISION

TABLE OF CONTENT

1 PURPOSE

The purpose of this document is to ensure that dust generated at the project site (see annexure A) is effectively controlled and in compliance with the Client specifications.

2 SCOPE

The method statement relates to the management of dust generated throughout the duration of the contract at project.

3 REFERENCES

WBHO construction Minimum Requirements, Revision 03, 2012

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Main contractor and sub-contractors are required to comply with the following:

- Implementation of dust suppression schedule if required
- Sourcing of water for dust suppression
- Conducting awareness talks regarding generation of dust.
- Adherence to all relevant legislation regarding dust generation

6 METHOD

6.1. Site Office/camps

The following mitigation shall be applicable at the site office where construction camps are placed:

- The area shall be levelled and the soil stabilised, dust suppression shall be conducted by means of water bowser truck during the levelling and stabilising process.
- Concrete or Gravel material shall be applied in open spaces between the site office camps. If it is the G5 in use it should be of good quality, appropriate density, well stabilised and covering all the exposed areas satisfactorily. In future, if the Gravel material is contaminated it should be replaced with the new material and the contaminated ones disposed as such.
- Alternatively, the area could also be landscaped by using indigenous grass species. The landscaped area must be watered appropriately and monitored to avoid water wastage and starting of erosion. The landscaped area must be kept tidy. The area shall not be walked on by personnel, rather paved thoroughfare shall be established.

6.2 Construction Site

6.2.1 Routes

The following method is applicable at the temporary construction routes

- Bowser trucks may be used to supress dust on these routes, the frequency of dust suppression may depend on the necessity as identified by designated personnel.
- In areas which are in accessible by bowsers, dust suppression maybe done manually by using extendable water pipes and water containments. No dust suppression shall be done by using contaminated water onsite. Contaminated water shall be disposed as such.
- No dust suppression shall be carried on the day it rained unless there is clear visibility of dust.
- Where possible a dust suppression schedule may be drafted and followed if it is convenient to do so.

6.2.2 Construction Vehicles

- Construction vehicles shall adhere to site specific speed limits at all times, exceeding such will lead to the disciplinary actions as per company's and client procedures

6.2.3 Awareness

- Tool box talks shall be scheduled and conducted with the site drivers to avoid generating dust unnecessarily.

6.3 Stockpiles

- Finely divided materials such as stockpiles of sand, subsoil and cementitious products should be stored where practicable under cover or in sealed containers
- Sources of dust such as spillage of finely divided materials should be removed promptly.

6.4 Access routes

- All access routes leading to Loftus park are public and paved and therefore no dust suppression required.

6.5 Documentation

- All complaints relating to dust will be recorded in the Complaints Register (3 3.1 of the EMS) and shall be addressed accordingly.
- Any incidents relating to dust will be recorded on the Incident Register (3 6.2 and 3.6.3 of the EMS).
- The contractor will pay a fine of 000 for the excessive generation of dust on site

ANNEXURE A – The Site

Unity Terminal Kpne

GHANA PORTS AND HARBOURS AUTHORITY

WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 10
SOLID WASTE MANAGEMENT

APPROVAL			
PREPARED BY	SUBMITTED BY	APPROVED BY	APPROVED BY
DATE	DATE	DATE	DATE
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE

DOCUMENT CHANGE / REVISION RECORD			
REVISION	DATE	SECTION	REASON FOR REVISION

TABLE OF CONTENT

1 PURPOSE

The purpose of this method statement is to ensure that solid waste produced at the project is properly identified, effectively controlled, legally transported and disposed according to the national legislation, client Environmental management programmes and any other applicable international agreements and/or standards.

2 SCOPE

The method statement relates to the management of Solid waste generated at the project.

3 REFERENCES

WBHO minimum requirements, 2015

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Main contractor and sub-contractors are required to comply with the following:

- Taking responsibility for waste management on site through control and monitoring of waste, minimising the amount of waste generated and avoiding any littering on site.
- Participating in the implementation of waste handling measures as may be appropriate for the protection of the environment
- Maintaining accurate waste handling compliance records and statistics
- Applicable permits by service providers
- Provision of the correct and properly labelled waste bins (wheelie bins and skips).

- Conducting proper training and awareness regarding the handling of waste.
- None littering on-site
- No burning of any form of waste
- Adherence to all relevant legislation regarding waste management

6 METHOD

6.1 Storage Facilities

- A suitable number of 6m³ skips shall be sourced from a competent waste management company and placed in a demarcated area in the laydown area and site office.
- Ensure that the facilities are clearly marked.
- These skips must be easily accessible for removal of waste from site as well as to empty wheelie bins from site office.
- They shall accommodate waste in the form of builder rubble, metal, wood, domestic and recyclable waste.
- Ensure that the supplied skips are intact
- Adequate number of marked wheelie bins (200L) shall be made available on site for strategically placement.
- Wheelie bins shall be made available at the demarcated eating areas. Only domestic waste shall be allowed in these bins.

6.2 Generation and Disposal

The solid waste produced at the project shall be segregated as follows:

Rubble	Metal
Bricks	Rebar
Mortar	Offcut-pipes
Broken bricks	Wire
Tiles	Ducting
Concrete	
Wood	Domestic/Office
Timber	Food
Shutter board	Glass
Brandering	Plastic
Pallets	Paper

- Recycling of waste is encouraged where possible and the recycled quantity may be recorded

6.3 Records and Monitoring

- Waste collection and disposal receipts shall be kept onsite
- Annexure A Waste Management checklist shall be completed where applicable upon the use of a service provider for disposal and recycling of waste

6.4 Communication

Waste management and recycling will be discussed with each employee on site through the mandatory site induction and through toolbox talks.

Waste prevention and recycling activities will be discussed at each monthly subcontractor coordination meeting to reinforce project goals and communicate progress to date.

The subcontractor will be expected to make sure all their employees comply with the Waste Management Plan with the help of inductions and toolbox talks.

ANNEXURE A-WASTE MANAGEMENT CHECKLIST

Serial	Documentation Required	Available/ Not Available	Expiry Date	Remarks
GENERAL WASTE				
If Disposed				
1	Permit / registration of waste disposal site		N/A	
2	Registration as waste transporter			
3	Collection notes		N/A	
4	Proof of safe disposal		N/A	
If Recycled				
1	Authority to undertake a listed activity • Recycling and sorting of Glass, Paper Plastic, Aluminium etc.		N/A	
2	Registration as a waste transporter			
3	Collection note (per mass)		N/A	
HAZARDOUS WASTE				
If Disposed				
1	Permit / registration of waste disposal site		N/A	
2	Registration as a waste transporter			
3	Collection notes		N/A	
4	Proof of safe disposal		N/A	
If Recycled				
1	Registration as a waste transporter			
2	Air Pollution Prevention Act (APPA) Permit		N/A	
3	Authority to undertake a listed activity - Bioremediation - Recycling		N/A	
4	Permit for temporary storage & handling of hazardous waste			
5	NORA / ROSE membership certificate			
6	Effluent discharge permit			
7	Collection note		N/A	
BIO-HAZARDOUS WASTE				
Medical Waste				
1	Air Emission license (AEL) for incinerator		N/A	
2	Registration as a medical waste transporter			
3	Registration to dispose medical waste			
Sewerage				
1	Letter of permission for temporary tie in available			
2	Permit / registration of disposal site		N/A	
3	Registration as a waste transporter (class 6.2 infectious hazard)			
4	Collection notes		N/A	
5	Proof of safe disposal		N/A	

Unity Terminal Kpone

GHANA PORTS AND HARBOURS AUTHORITY

WBHO CONSTRUCTION (PTY) LTD

METHOD STATEMENT
Number 11
FUEL STORAGE TANKS AND REFUELLING

APPROVAL			
PREPARED BY	SUBMITTED BY	APPROVED BY	APPROVED BY
DATE	DATE	DATE	DATE
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE

DOCUMENT CHANGE / REVISION RECORD			
REVISION	DATE	SECTION	REASON FOR REVISION

TABLE OF CONTENT

1 PURPOSE

The purpose of this method statement is to clearly outline the methodology to be followed for the establishment of fuel storage tanks and refuelling procedure at the project.

2 SCOPE

The method statement relates to the management of fuel storage facility and refuelling at project for the duration of the contract.

3 REFERENCES

WBHO Environnemental Management System, Section 3.6, Revision 03, 2012

WBHO Environmental Policy, Revision 2016

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project/Site Manager shall be responsible for overall construction activities inclusive of ensuring that all safety and environmental measures are implemented.

Safety officer shall ensure that all personnel involved in this activity are competent to perform the task and that the training provided is sufficient in that the trainee will respect the environment and safety rules.

Foreman/Supervisor shall be supervising closely the activity designated to them and ensure that all instructions are followed and that safety and environmental procedures of the project is strictly adhered to.

Workers this Method Statement is binding to all employees and it is also the responsibility of the individual employee to comply.

5 REQUIREMENTS

Main contractor and sub-contractors are required to comply with the following:

- Training of operators on refuelling procedure as per site training matrix.
- Reporting and cleaning of hazardous substance spillages.

6 METHOD

6.1 Fuel Tanks Storage

- Ensure that all relevant permits are in place for the storage of hazardous/flammable materials
- Bulk fuel storage tanks must be placed out of the way of traffic to reduce the risk of ruptures, further than 3.5 meters from buildings, and away from storm water inlets to avoid water contamination.
- Tanks should be stored inside an impermeable bunded area that can contain 110% of the total volume.
- Tanks should be as far removed from occupied buildings / containers as possible.
- Bunded area to be protected by an earth berm to prevent plant from colliding with structure.
- The bund should have a valve and a sump so that contaminated rainwater can be safely drained.
- The filler tap of the tank (refuelling hose) must be inside the footprint of the bund wall.
- Ensure that all the relevant MSDS are available at the point of storage.

6.2 Refuelling bay

- The area where the plant / bowser park to be refuelled should have an impermeable concrete slab to prevent contamination of soil if any spills should occur. Drip trays may also be used if it is not feasible to install a concrete slab.
- Fire extinguishers should not be placed directly next to tank. All "no-smoking", "no open flame" and "danger" signs should be clearly posted.
- A wheelie bin spill kit to be present at all times near diesel storage tank.
- A hand carried spill kit must be present at all times when bowser is refuelling on site

6.3 Refuelling

- Operators will be trained to refuel in accordance with Risk Assessment
- When refuelling plant on site from a bowser, a designated area must be identified and marked with cones and drip trays must be placed under the hoses and nozzles
- Both plant and pump must be switched off before hoses are coupled and wheel chocks must be placed under wheels.
- When filling plant / bowser a fire extinguisher should be placed close to the refuelling.
- A fire extinguisher must be kept close to the refuelling point
- In the event of a fuel hose or connection failing during refuelling, the driver will immediately activate the emergency stop valve.
- No smoking will be allowed during refuelling
- No operator to be allowed inside plant when refuelling.
- Necessary PPE should be worn and the correct hoses, nozzles and flash back cables should be used.
- In case of fire, site emergency fire management procedure should be followed.

6.4 Spill Incidents and Reporting

- Minor spills of less than 5 litres: excavate the contaminated soil/or gravel and place in an impervious bag which must be stored in a dedicated, impervious hazardous waste bin.
- Large spills of 5 to 25 litres: excavate the contaminated soil and/or gravel to the full depth and extent where the contaminant has saturated the soil/gravel and place in an impervious bag or container which must be stored in the dedicated hazardous waste bin. The contaminated material including all absorbents and drenched spill kit material used must be disposed of at a licensed facility. Record the spill in the incident register with the date, cause and remedial action taken.
- Major spills of more than 25 litres: a specialist contractor must be used for the excavation, containment and immediate removal of contaminated soil, gravel and other materials to a licensed hazardous waste disposal site or facility licensed for bio-remediation of contaminated soil. Record the spill in the incident register with the date, spilled volume, volume of contaminated soil, cause of the spill and remedial action taken; and attach the certificate of safe disposal or bio-remediation
- All large and major spills of hazardous substances must be reported to the Safety Officer, Environmental Control Officer and Project Manager.

ANNEXURE A

Unity Terminal Kpone

GHANA PORTS AND HARBOURS AUTHORITY

WBHO

WBHO CONSTRUCTION (PTY) LTD

CONTRACTORS' ENVIRONMENTAL MANAGEMENT PLAN

APPROVAL			
PREPARED BY	SUBMITTED BY	APPROVED BY RE	APPROVED BY ECO
DATE	DATE	DATE	DATE
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE

DOCUMENT CHANGE / REVISION RECORD			
REVISION	DATE	SECTION	REASON FOR REVISION

CONTENTS

1 PURPOSE

This Contractors' Environmental Management Plan explains the methodology, which will be used in implementing the Client's Environmental Management Plan (EMP) for the project, as well as compliance with the Company's minimum requirements and the ISO 14001 system.

2 SCOPE

The document relates to aspects such as site establishment, waste management, hydrocarbon storage, laydown areas, dust control, management of cement, plant and equipment etc.

3 REFERENCES

- WBHO Environmental Management System
- WBHO Environmental Legal Register
- ISO 14001:2004 & ISO 14001:2015

4 ROLES AND RESPONSIBILITIES

Main tasks and associated responsibilities are as follows:

Project Director - TBA
Site Management - TBA
Environmental Officer - TBA
Safety Officer - TBA
Waste Management - TBA

5 REQUIREMENTS

A Designated Environmental Officer who will manage the EMS on site.

A laydown area large enough for material storage which is easily accessible.

Entrance to be accessible from main road, without being a danger to traffic.

Site establishment in environmentally acceptable area with limited extent.

Contract agreement and permission letter of landowner.

Storm water and erosion control where necessary.

6 METHOD

General

This document will be provided to all sub-contractors as an appendix to their formal contract. All sub-contractors must comply with these requirements at all times and non-compliance may result in fines being issued.

Administrative Requirements

WBHO will be implementing an ISO14001 accredited Environmental Management System on site. The system will be made site specific and will be implemented to ensure compliance with the EMP and all other environmental requirements for the site.

This Environmental Management System is designed to adhere to applicable legislation, ISO 14001 requirements and all other requirements imposed on construction activities where WBHO are involved.

POLICY AND PLANNING

- Policy (ENV 2.1.1)

The Environmental Policy will be reviewed at least once a year with the Management Review and is the documented commitment of WBHO to uphold the basic principles of environmental management through a management system based on international system standards, compliance to legislation and the prevention of negative impacts on the environment.

- Objectives (ENV 2.5.4.1)

WBHO has derived objectives or targets from its Policy and they will include the prevention of pollution as well as legal and other requirements. The aim of objectives and targets will be to achieve and ensure continual improvement

- Legal requirements (ENV 2.3.1)

Environmental management is bound by legal requirements and this forces WBHO to have knowledge of environmental legislation. This is achieved by a legal register which is a live document updated by a professional legal firm or person.

- Aspects & Impacts (ENV 2.4.2)

To be aware of the possible impacts WBHO can have on the environment, a generic aspect / impact register was drafted. This is to be used as a guideline to draft site specific aspect / impact registers.
This must be used in conjunction with the EMP from the client

- Procedures (ENV 2.5.2 – 15)

Procedures are a specified way to carry out an activity or process. The Environmental management System has procedures regarding documentation, communication, emergency planning etc. procedures needs to be reviewed on a regular basis.

IMPLEMENTATION & OPERATION

- Roles and responsibilities (ENV 3.1.1 & 3.1.2)

Roles and responsibilities need to be established in an organization to determine responsibility and legal accountability. It also ensures that personal know who is responsible for implementing and maintaining the EMS. Organograms depicting the structures are available and an appointment letter for an environmental officer is included in the system. Every site must have an environmental officer who is responsible to maintain the EMS on site.

- Competence, training and awareness (ENV 3.2.1 & 3.2.2, ENV 3.5.1 - 23)

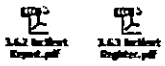
Training is done on different levels throughout WBHO. Training starts with induction for all employees on site from where a training matrix indicates further training. Training can be done through toolbox talks on site as well. Toolbox talks are done once a week with all site personnel and an attendance register is drawn up to keep track.

- Communication (ENV 3.3.1 – 3, ENV 3.4.1, ENV 3.5.1 – 23)

Communication takes place on different levels, externally and internally. External communication can be through documents (EMP), meetings or complaints. Internal communication can be through toolbox talks, method statements and meetings

- Incidents & Emergencies (ENV 3.6.1 – 3)

Incident procedures must be displayed and people must be aware of the required actions during and after an incident. Incident reports must be completed by the DEO and an incident register must be kept in the site EMS file.
The incident register must accompany the monthly report.



MONITORING

- Checklists (ENV 4.1.1 – 5)

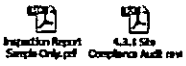
The startup and monthly checklist gives an indication of legal compliance that needs to be adhered to while the daily checklist give an indication of site conditions and facilities. Checklists will be completed by the DEO. The Waste Management checklist and the Borrow pit checklist is there to assist with legal compliance and the management of service providers. When the sites shut down over holiday periods, the Site Shut Down Checklist will be completed prior.

- Non-conformances (ENV 4.2.1, ENV 4.2.2)

This refers to a non-fulfillment of a system requirement and must be documented on a Non-conformance report and corrective actions must be proposed. Non-conformances must be documented on a NCR register which must accompany the Monthly Report. Repeated deviations in inspection and audit reports must also be listed as a Non-conformance.

- Internal audits (ENV 4.3.1 – 4)

The Environmental Coordinator will conduct monthly inspections and internal audits will b conducted quarterly according to an audit schedule. Internal audits must consist of legal compliance audits as well as system/process audits. Audit findings must be communicated at board meetings and Management Review meetings.



MANAGEMENT REVIEW

Top Management will review the Environmental management System, at least once a year, to ensure the effectiveness of the system. This review shall include the assessing of the policy, the objectives and the need for change to the Environmental Management System due to change of business, client requirements or legislation.

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Laydown Yard and Site Access

- All lay-down and storage areas will be located at the designated areas indicated on the site layout drawing.
- Material deliveries will only take place in designated areas only.
- Site areas will be clearly signed in order for all visitors to know what is required of them and where they are meant to report.
- No contractors will be allowed to erect accommodation units on site.
- No new roads or tracks may be made without the written permission of the site manager and the Client.
- Pedestrian movement is to be restricted to clearly defined routes only.
- Speed must be restricted to 20 km/h (unless otherwise instructed by the client) on all roads and tracks in order to avoid accidents and the creation of excess noise and dust, etc.
- The main access points to the contract area will be controlled with security checking points.
- All access points will be clearly identified with proper signage and signs prohibiting unauthorised entry.

Vehicle Management

- Vehicles and plant must be serviced in a dedicated, concreted area with a fall to a central gully where spillage of oil and fuel will be managed properly. Drip trays can also be used to contain spillages.
- Routine maintenance must be conducted as per the plant maintenance schedules. Where possible the maintenance must take place in designated workshop areas. In the event of a breakdown immediate steps must be taken to prevent any spillage of fuel or oil.
- All water contaminated with hydrocarbons must be passed through an oil separation system. Oil collected must be retained in a safe holding tank, stored within a concrete bund and removed from site and disposed of in an acceptable manner (registered oil recycling company).
- Oil spills on the ground surface must be spaded-off immediately to the depth of oil penetration, contained and then removed from site and disposed of in an acceptable manner

(registered hazardous disposal site). All documentation for disposal to be on file as per Checklist 4.1.4 in the EMS.

- All used parts from serviced vehicles and other materials to be removed by the service truck (which may include but are not limited to oil filters, pipes, rags, cans etc.) must be collected and removed from site and disposed of in an acceptable manner (registered disposal site).
- Refuelling of vehicles must take place at a dedicated refuelling facility. Other machinery requiring refuelling, such as compressors and cranes, must be refuelled from a bowser in which case a drip tray should be used to contain any spillage that may occur.
- All washing of plant and vehicles to be done off site.
- All vehicles, plant and machinery identified as posing an environmental threat must be stopped and removed from site or repaired immediately.
- All vehicles will be maintained so that no excessive emissions are generated. Whenever plant is identified as emitting excessive smoke it will be recorded as an incident and reported to the onsite workshop.

Fuel and Chemical Management

- Adequate fire prevention measures will be arranged which will include suitable fire extinguishers, no smoking and no naked flame signs.
- All fuel storage and usage will be controlled by a designated person, this person will be responsible to ensure that leaks are prevented and that housekeeping is maintained around the storage areas at all times.
- Oil will be stored in drums inside the storage cage, or within a bunded hydrocarbon storage area.
- All the relevant Safety Data Sheets (SDS) will be made available at the point of storage.
- No smoking, no open flames, fire control area signage to be on display at store.
- Flammable substances must be stored in an imperviously bunded, well ventilated, lockable cage which must have a roof and must be able to contain 110% of the total store volume
- Display relevant signage (no smoking, fire control area).
- Fire extinguisher must be available, correctly signed and mounted on a pole close to the cage (no further than 3 m), not on the cage door.
- Inventory list and bund capacity to be on display.
- Proper decanting equipment such as funnels and hand pumps will be used for decanting shutter oil from drums.
- A wheelie bin spill kit will be kept close to the storage areas in case of spills.
- Significant spills will be recorded on an incident report and the incident register.

Waste Management

- Refer to the Waste Management Plan Method Statement

Material Management

- All lay-down and storage areas will be located at the designated areas indicated on site drawings.

- Areas should be set out in a manner which allows safe access.
- Stockpiles must be monitored and maintained in accordance with EMP requirements

Water Management

- Care should be taken during dewatering of excavations to prevent siltation of the storm water drains. Filter socks should be placed over outlet pipes where possible
- If ground water is contaminated with silt/debris, a settlement pond will be used to settle the sediment before discharging the water.
- Storm water inlets on site are to be lined with bid dim to prevent sediments from entering the storm water system This lining is to be regularly checked and repaired or replaced when necessary.
- Ensure sub-contractors are issued with a method statement regarding the de-watering and storm water management.
- No person(s) may, except with written consent of the Counsel and subject to any conditions it may impose, discharge, or permit to enter or place anything other than storm water into storm water systems
- Undertake regular inspections and maintenance on storm water drains.

Erosion and Sedimentation

- Erosion and sedimentation will be checked after heavy rains; remedial action will be taken if needed.
- Erosion and Sedimentation controls will be implemented Silt curtains will be installed if needed; to contain any silt collected by the flowing water. This will ensure that no excessive silt is discharged into a vegetated area. Stabilisation of cleared areas, berms and hay bales will be implemented if needed to prevent erosion.
- Rain water accumulation in the working area will be pumped out using a silt sock to catch excess sediments.
- Water will not be pumped directly into a natural ecosystem.
- Ground protection will be used at all time when working with hazardous substances to ensure no contamination of surface runoff.

Air Quality

- Dust arising as a result of construction works will be controlled by means of watering the affected areas.
- Dust generated from vehicular movement must be mitigated by road wetting and implementing speed limits in relevant areas.
- Loose material being hauled on trucks should be secured or covered to minimise dust when travelling.
- No burning of any waste or vegetation is allowed on-site.

- Vehicles and plant must be adequately maintained to minimise the emission of excessive fumes
- Complaints relating to dust will be recorded in the complaints register which is kept in the EMS file on site.

Noise

- Where possible, operations which result in undue noise will be kept to a minimum by ensuring that these activities only take place during normal working hours.
- Any after-hours work must first be authorized by the council or Client
- All engineering controls will be set in place to reduce any high noise machinery or activities.
- Employees will be required to wear suitable hearing protection where necessary.

Protection of Fauna and Flora

- Any existing indigenous trees or vegetation on site should only be removed if absolutely necessary. Permission should first be obtained for removal.
- Care should be taken not to damage any vegetation occurring around the site.
- Alien invasive species should be removed and disposed of, this will be done by hand pulling, weed cutters and an approved herbicide will be used if necessary.
- Indigenous plants will be relocated where possible.
- All employees will undergo environmental awareness and must report any fauna or flora incidents.
- Indigenous trees will be planted around disturbed areas.

Site of Heritage or Cultural Significance

- If any items of archaeological interest are found, this must be reported immediately to the Client and Local Authorities within 24 hours.
- The Engineer shall be informed and work in the immediate vicinity shall be stopped immediately.
- Reasonable precautions shall be taken to prevent any person from removing or damage any such article.
- Work may only presume once clearance is given in writing by an approved archaeologist.
- If any graves or middens found on site, the Engineer is to be informed and work in the immediate vicinity shall be stopped immediately.
- Arrangements must be made for an undertaker to carry out exhumation and reburial
- The undertaker and relevant authority shall be responsible for contacting the family of the deceased, and establishing a site for reburial.

Health and Safety

- A health and safety officer (HSO) will be appointed and will continuously monitor safety conditions on site.
- An occupational health and safety management system will also be implemented as per OHSAS18000 standards.

Socio-Economic Impacts

- The disruption of essential services, water and electricity will be kept to a minimum in order to minimise public inconvenience.
- All affected neighbours are to be notified of the disruptions in writing prior to commencement.
- Complaints received will be recorded in the complaints register (3.3.1 of the EMS) and will contain the following information:
- Time, date and nature of complaint;
- Response and investigation undertaken; and
- Corrective and preventative actions taken and by whom.

Emergency Procedures and Incidents

- A site specific Emergency Plan will be drafted with the guidance of the Emergency Protocol (ENV 3.6.1) for each potential accident and emergency situation.
- Each plan provides easy reference to relevant basic information for handling the situation.

Rehabilitation

- All remaining construction infrastructure, building rubble and waste will be removed from the site upon completion.
- Waste materials will be reused, recycled or disposed at a registered landfill site (last resort).
- All areas disturbed, including the construction camp, service roads, material storage and loading areas will be cleaned up and restored to original condition as far as possible.
- A rehabilitation plan will be compiled after construction commences.

DISASTER **DRILL 1 X PER YEAR** **IF POSSIBLE TO REINACT**	**Extreme environmental impact (Write in any possible disasters)** • **SPILL> 250 l in water course** • **Explosion with fatality** • **Uncontrolled fire that cannot be contained by Fire Department.** • **Diesel Bowser crashing and spilling into storm water.** • Substantial or total loss of project • National / International public attention • Considerable penalties, multiple lawsuits, prosecution and jail terms • Long term remediation	• Ensure no further spillage or damage • Secure and evacuate area • DRIZIT / RAPID SPILL RESPONSE • Notify emergency services • Notify authorities • Record all the details of the incident • Photographs / MSDS's • Call relevant Fire Department • Only trained people to try and contain fire • Notify the relevant parties, cordon off the area, use spill kits to contain as much of the spill as possible until emergency assistance arrives. Rehabilitate according to incident report corrective actions. • Drill to be held with local and neighbouring Fire Department or Spill response company	• Immediate Supervisor • Project DEO • Site Agent / Manager • Emergency services • Affected parties • Environmental Group Manager • Divisional MD • CEO • Regional / National authorities	• Incident Report • Investigation form • Checklist • Any documentation required by the Client. • Revise existing method statement • Method statement for future prevention • Site instruction for rehabilitation • Report to regional / national authorities • Evacuation Review to be filled in for effectiveness

DRIZIT ENVIRONMENTAL - 0800 202 202 (24 HOURS)

RAPID SPILL RESPONSE - 0800 172 743 (24 HOURS)

Quality Tender Submission

Kpone - Design & Construction of a Container Handling and Devanning Terminal Tema - Ghana

WBHO

CERTIFICATE

Standard: ISO 9001:2008

Certificate Registr. No.: 01 100 928515

TÜV Rheinland Inspection Services Certifies:

Certificate Holder:

WBHO Construction (Pty) Ltd
53 Andries Street
Wynberg
Sandton
2090
Republic of South Africa

Scope:

Building construction, civil engineering, roads & earthworks including water reticulation, storage and piping systems. Including plant and services.

An audit was performed, Report No. 928515. Proof has been furnished that the requirements according to ISO 9001:2008 are fulfilled.

The due date for all future audits is 11 - 11 (dd.mm).

Validity:

The certificate is valid from 2016-12-13 until 2018-09-14
First Certification 2016

South Africa, 2016-12-13

TÜV Rheinland Inspection Services (Pty) Ltd
92 Koranna Avenue
Doringkloof
Centurion
0140
Certification Body No. C09

sanas
C09

www.tuv.com

TÜVRheinland®
Precisely Right.

WBHO	Quality Policy Statement	Doc No.	POL-QA 01
		Rev. No.	05
		Rev. Date	07/10/2014

QUALITY POLICY STATEMENT

WBHO in its motto "Rely on our ability" signifies that of a focused group, which concentrates on providing its clients with a quality product. To this end the group mobilises its management skills and uses its resources in the most efficient and cost effective manner to produce projects to the required standard and quality.

WBHO ensures quality management by using best construction practices within the core activities of the group. By continually improving our processes we assure compliance to requirements and therefore enhancing client satisfaction. Commitment by Management is demonstrated through maintaining the ISO 9001 certification.

STRATEGIC QUALITY OBJECTIVES

1. To deliver our Projects in time, within budget and to the standard of quality required by our clients.
2. To create and maintain a culture of quality within the group.
3. To ensure that all our employees are trained in the Quality Management System and that this training is ongoing at all levels.
4. To meet all relevant statutory & legal requirements.
5. To provide the resources necessary to achieve the required level of quality.
6. To ensure that quality control and quality assurance mechanisms are being sufficiently and effectively applied and that documentary evidence of such are maintained.
7. To document and measure quality objectives and targets through internal audits and management reviews.
8. To ensure that all advisors, suppliers, sub-contractors and others who are involved in our projects meet the required quality standards.
9. To continually review, improve and implement quality management and best practice procedures.
10. To seek feedback from our clients and consultants as to the level of quality delivered.

E.L. Nel: _____ **Date:** **07/10/2014**

Chief Executive Officer

PROJECT QUALITY PLAN (PQP)
Rev.0 – 20/09/2017

Contract Name – KPONE – DESIGN AND CONSTRUCTION OF A CONTAINER HANDLING AND DEVANNING TERMINAL TEMA - GHANA

Client – JV DRIVER PROJECTS INC

Enquiry Number – No1201

Contractor – WBHO Construction Pty (Ltd)

Start Date – TBA

Completion date – TBA

	NAME	DESIGNATION	SIGNATURE	DATE
PREPARED BY	Chavroné Oelofse	Quality Administrator		20/09/2017
APPROVED BY				
CLIENT APPROVAL				

	Reason for Submission	Tick Appropriate	Remarks
1	Tender Submission	x	
2	New Submission		
3	Resubmission to address Client comments		
4	WBHO revision submitted for information		
5	Description name change		

Rev #	Date	Paragraph Changed	Description of change
00	20/09/2017		NEW

CONTENTS

1. Introduction

This is the Project Quality Plan (PQP) and the quality functions for the KPONE – DESIGN AND CONSTRUCTION OF A CONTAINER HANDLING AND DEVANNING TERMINAL TEMA - GHANA, performed by all personnel during the execution of the project.

2. Project Scope

The scope of works will consist of the Construction of a Container Handling and Devanning Terminal – Unity Terminal, Kpone.

For more information, refer to the Tender documents.

3. Conformance Criteria

The WBHO Quality Management System that will be used is based on the ISO 9001 system. All work performed will be according to Clients specifications, drawings and the contract quality requirements.

4. Management Responsibility

The contract senior management responsibility is to assure the implementation and the efficiency of the QMS throughout the project.

All personnel responsibilities will be clearly defined in the Responsibility Martix (F14) and will be approved by the Contract Director.

5. Site Related Quality Objectives (To be made Site Specific)

- To ensure that all personnel have undergone quality induction upon arrival on site.
- To ensure that all Method statements and QCP's are approved by the client prior to commencing any work.
- To ensure that all NCR's are closed within one month.
- To continuously review CA to eliminate detected non conformities.
- To ensure that the quality policy is communicated and understood.
- To provide documentary evidence of all quality Control measures.
- To ensure that quality control mechanisms are being sufficiently and effectively applied at all times.
- To ensure that suppliers, sub-contractors and others who are involved in our project meet the required quality standards.
- To seek feedback from our clients and consultants as to the level of quality delivered. (client meetings).

6. Project & Client Communication

WBHO maintains an open door policy with regards to client communication; this policy is evident at all levels of management.

Continual client communication ensures that the following aspects are covered and addressed:

- Project information
- Design queries and amendments.
- Client feedback, including complaints.

Communication will be in a form of meetings (frequency to be agreed with the client); site engineering queries / Request for information, site instructions, telephonic conversations, formal correspondence; faxes and e-mails etc. All records raised from these communications shall be maintained.

The Inspection and Test Request register (E08) will be the main interfacing document for client communication regarding Quality Control aspects.

7. Documentation & Records

All contract documentation internal and external shall be handled according to the Contract Agreement. The electronic and or manual document and records management system shall be approved by the contractor and project manager at the start of the project.

7.1 Control of External Documents (PRC 005)

Documents of external origin such as drawings, project specifications, construction standards, tender documentation, designs, instructions and correspondence will further be controlled. Controls implemented will ensure that the external documents are:

- identified and their distribution controlled
- accessible when required and correct revisions utilised
- removed from circulation when superseded, and identify as such

Control of these external documents will include a Document Stamping system, where stamps are not available a Hand Written control will be acceptable. This control is used to identify the following records and circumstances:

- date received
- revision status e.g. Revised or Superseded
- Identification e.g. Master Copy or Controlled Copy

- distribution list

7.2 Control of Internal Documents (PRC 004)

WBHO has established and implemented a documented Procedure Manual and Policy Statements to ensure that all internal documents are properly controlled. Reference: List of system documentation. (F06)

7.3 Document Hierarchy

The Quality Management System documentation are structured as follows:

Level 1:	Project Quality Plan
Level 2:	Quality System Procedures & Method Statements
Level 3:	Quality Control Plans, Test & Work Instructions
Level 4:	Inspection Checklists & Test Reports.

7.4 Level 1: Project Quality Plan (PQP)

The PQP shall be identified based on the current processes and/or activities related to this project, and shall be approved by the Contractor and Project Manager. The PQP shall be subject to change or updating as required. The new revised PQP shall be approved prior to implementing any changes and shall be communicated and distributed to all relevant parties.

7.5 Level 2: Method Statements (MS)

Method Statements shall be developed for major activities or specialised processes as and if required. All Method Statements shall be developed, submitted and implemented into the execution process and will form part of the QMS. Relevant QCP's will be reviewed and updated to incorporate required intervention.

All MS shall be submitted to the Contracts Manager and Project Manager for approval prior to the commencement of the described work.

7.6 Level 3: Quality Control Plans (QCP's)

For each process of the project, Quality Control Plans will be drawn up to identify the sequence of activities and the relevant documents needed to provide evidence of the activity acceptance.

The Quality Control Plan will address the following:

- Area or Process
- Activity to be performed

- Conformance criteria, specifications and references
- Checklist / Document applicable including identification
- Intervention levels and applicable signatories

The Quality Control Plans will be submitted to the Client's Representative for review and approval. There is a space allocated for each Quality Control Plan to be approved and signatory information added.

QCP's will include but not be limited to the following;

- General Requirements
- Bulk Earthworks
- Civil Works
- Concrete Works

Additional QCP's will be developed throughout the project if the need arises.

Intervention Levels are to be included in QCP's by site personnel

Hold (H)
Process is not allowed to proceed unless inspected and signed off by designated authorities. (Inspection checklists and QCP release must be signed by Client Rep.).

Verify (V)
Check that records, operations and results comply with requirements.
(Inspection checklists must be signed by Client Rep.)

Surveillance (S)
Ad hoc inspection conducted on a continuous process to ensure compliance

Witness (W)
Designated authority present at a test, activity or inspection while it is carried out. If the required notice is given, the contractor reserves the right to proceed if designated authority is not present at inspection.

Document Review (DR)
Prior to starting, a document review must be held by approved authority/ies, Resident Engineer and main Joint Venture partner, etc.

7.7 Level 4: Inspection Checklist & Test Reports (PRC 025)

All inspection, test and survey will be requested and controlled by means of the Inspection and Test Request Register (ITRR)

The WBHO controlled documents will be used at all times. Refer to List of Controlled documents.

Competent personnel will be assigned to carry out inspections of works to ensure that everything is as detailed in drawings and specifications.

Acknowledgement of these inspections will be signed on relevant checklist.

7.8 Control of Records (PRC 006)

Any document that can be used as objective evidence to prove that requirements have been fulfilled will be considered as records of the quality management system.

The following Quality records will further be kept to provide evidence of conformance to requirements:

i. Quality Control Plans
ii. Inspection Checklist
iii. Laboratory test results
iv. Concrete mix designs
v. Materials test certificates from the supplier
vi. Approved method statements
vii. Site Instructions and variation orders
viii. Request for information / Site Engineering Queries
ix. Minutes of Client meetings
x. Confirmation of Verbal Instructions
xi. Drawing register & transmittal slips
xii. Drawings
xiii. Snag/ Punch lists
xiv. As Build drawings
xv. Operation Manuals from suppliers
xvi. Certificate of Handover
xvii. Non- conformance Report
xviii. Quality Data Packs and handover documentation as per section 15

Once the contract is finalised, these records will be housed in a secure archiving system and kept for a maintenance period determined by the following:

- Client Requirements
- Legal and Statutory Requirements
- Relevant Operational Procedures

WBHO will ensure that all records in archiving system remain legible, readily identifiable and retrievable.

7.9 Compliance Reports

The characteristics and quality of all material and items to be used on the contract will be verified for their quality and contractual compliance.

Incoming materials, their testing and results thereof are to be documented, including off site inspections and checks prior to transportation. All records shall be traceable to applicable products. All non-conforming material shall be clearly identified and segregated.

8. Control of Non-Conformances (PRC 008)

Purchased products, materials and any undertaken work that does not conform to project requirements will be identified and controlled to prevent its unintended incorporation into the project.

Non-conformances will be dealt with in one or more of the following ways:

- Non-conformance corrected and re-inspected to meet requirements
- Non-conformance accepted and authorised for use under concession
- Non-conformance rejected as unsuitable

Costs associated to the non-conformances will be calculated and attached to the non-conformance report.

All the detected non-conformances will be formalised onto a non-conformance record form, which will then be summarised onto a non-conformance register. Records of non-conformances and corrective actions, including concessions, will be maintained.

All NCR's and related documentation will be forwarded to the Quality Assurance department, which will filter this data. This will be reported & revised at monthly divisional board meetings.

9. Internal Audits (PRC 007)

Internal audits will be conduct at planned intervals by the Quality Department and/or Quality consultant to ascertain whether the Quality Management System has been effectively implemented, maintained and conforms to the requirements of ISO 9001 standards.

The Quality Department will notify the site in advance about the intended audit. Audits to be conducted will include a minimum of the following;

- Initial implementation
- Gap analysis (one month after start of project)
- Surveillance audits.
- Final handover verification audit.

A referenced audit schedule will be defined and distributed at commencement of the project. (If Required)

10. Purchasing Process (PRC 014)

Purchasing documents shall contain information clearly describing product required, quantity needed, contract specification and requirements for the product approval.

Suppliers will be evaluated and selected based on their ability to supply product in accordance with our requirements. Site personnel will arrange with the supplier a visit to the supplier's premises to ascertain whether processes in place conform to our Contract requirements.

Records of supplier selection will be maintained.

11. Control of monitoring and Measuring Equipment (PRC 020)

The accredited (ISO 17025) company will calibrate all measuring and monitoring equipment at intervals specified by the manufacturer. The equipment will be entered into an Equipment Calibration Register, which will indicate the equipment serial no.; date of Calibration; planned calibration; Calibration certificate number and whether the equipment has been sent off site.

The following equipment (but not limited to) should go through this calibration process:

- Surveying Total Station
- Levelling Machine
- Cube press machine
- Laboratory scales
- Batch plant / Concrete Mixer / Premix Plant
- Laboratory weights

Copies of calibration certificates should be kept on site as evidence.
Calibration will be conducted in accordance with national / international standards.

12. Sub-contractors

Sub-contractors will prepare and submit a Project Quality Plan (PQP) and/or Method statements to the Site Management for approval. This is to take part prior to the start of their activity.

When the Sub contractor does not have a Project Quality Plan (PQP), then he will be obliged to use the WBHO Quality System.

Quality Control Plans for the subcontract activities will be drawn up and submitted to the Client representative for review and approval. Site surveillance and inspections as per approved QCP's on all sub-contractors will be done throughout the duration of the project.

13. Design (delete if not applicable)

ADD

14. Transformation (PRC 029 & PRC 030)

WBHO are committed towards transformation in the construction industry through the implementation of Skills Development, Enterprise Development (ED) and Preferential Procurement Programmes.

The outline of the Enterprise Development Programme is as follows:

- Selection of ED Beneficiaries
- Facilitation of Mentoring Meetings
- Compiling ED Beneficiary Portfolio's
- Development Plans including a business needs analysis for EDB's
- Induct Mentors on their roles in the ED Programme
- Reporting monthly development progress to Senior Management

- The outline of the Skills Development Programme:
- Personal Development Plan for all permanent employees
- Skills programmes on all Projects for Unskilled, Semi-skilled and skilled labour.
- Apprenticeship Programmes
- Mentorship Programmes
- Internship Programmes
- Bursary Programmes
- Reporting to Senior Management on the effectiveness of all the above programmes.

Outline of Preferential Procurement Targets:

- Previously disadvantaged businesses, particularly Black owned, Black women owned local businesses are our preferred product and service providers.

15. Quality Dossier (Data Pack)

WBHO will submit a quality data pack index for client's approval when required. The client may review the index against the requirements to make it site specific. After the index has been approved by the client, WBHO will be required to compile the quality data pack in line with the approved index.
A master quality data pack will be compiled progressively during construction and will contain the documents relating to the relevant stages of production.

DATA PACK INDEX
(Generic – to be made site specific)

I. Approved Method statement
II. Quality Control Plans (QCP)
III. Permits (e.g. blasting, transport, excavation)
IV. NCR Reports & Register
V. Concessions
VI. Inspection Records. (ITRR, checklists and test results)
VII. Survey Records
VIII. Calibration Certificates
IX. Material Test Certificates (e.g. steel, bricks)
X. Approved Mix Designs (e.g. concrete, mortar, stabilization, asphalt)
XI. Approved Welding procedures, welder qualifications & NDT Testing results
XII. As Build Data & Drawings
XIII. Handover / Completion Certificate
XIV. Site Instructions
XV. Site Engineer queries (SEQ)
XVI. Daily Diaries
XVII. Specialized Testing Results

16. Client Property

While the project is under construction due care will be taken to protect and safeguard client property.

Should any client property be lost, damaged or otherwise found to be unsuitable for use, the matter will be reported to the client immediately and all such records will be maintained.

17. Handover

A handover, whether it is partial or final, needs to be done by means of completing
A Handover Certificate (F32). Final and partial handover should be accompanied by an Internal Snag list (F08) Ensure that you obtain the signature of the Client/Engineer for acceptance of the handover (Partial/Final). All non -conformities are to be completed prior to application for acceptance/handover.

18. Appendices

- **Referenced procedures.**
- **List of System documentation. (Forms & Registers)**
- **Quality Control Plan**

Document number	Rev. Number	Description
PRC 001	01	Cross Reference Matrix Procedure
PRC 002	01	Interactions of Processes Procedure
PRC 003	02	Responsibilities and Authorities Procedure
PRC 004	03	Controls of Documents Flowchart
PRC 005	02	Control of External Documents Flowchart
PRC 006	02	Control of Records Flowchart
PRC 007	05	Internal Audits Flowchart
PRC 008	05	Control of Non-Conforming Product Flowchart
PRC 009	04	Corrective Actions Flowchart
PRC 010	02	Preventive Actions Flowchart
PRC 011	03	Competence, Training and Awareness Flowchart
PRC 012	03	Management Review Process Flowchart
PRC 013	03	Estimating Process Flowchart
PRC 014	02	Purchasing Process Flowchart
PRC 015	04	Supplier Approval Process Flowchart
PRC 016	02	Management System Planning Process Flowchart
PRC 017	02	Project Planning Process Flowchart
PRC 018	03	Development of Quality Control Plans Flowchart
PRC 019	02	Customer Satisfaction Process Flowchart
PRC 020	03	Controls of Monitoring and Measuring Equipment Flowchart
PRC 021	02	Plant and Maintenance – REFER to PLNM 001
PRC 022	03	Forms and Attachments Flowchart – REFER to F05

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PRC 023	10	Project Quality Plan - PQP
PRC 024	05	Archiving Process Flowchart
PRC 025	04	Development of Inspection and Test Request Register (ITRR) Flowchart
PRC 026	03	Revision Status of Drawings Flowchart
PRC 027	01	Laptop Theft Procedure
PRC 028	01	CSI Spend Procedure
PRC 029A	00	Enterprise Development Flowchart
PRC 029B	00	Enterprise Development Programme – Implementation and Procedure
PRC 030	00	Contract Cost Codes Procedure
PRC 031	01	Authorization of Documents Procedure
PRC 032	00	Bulk Materials Procedure
PRC 033	00	Buying Procedure (REMOVED – Refer to PRC 014)
PRC 034	00	Cost vs. Allowable Reporting Procedure
PRC 035	00	External Plant Hire Procedure - REFER PLN-PRC 001
PRC 036	01	Fuel Control Procedure
PRC 037	01	General Guidelines & Checklist Procedure
PRC 038	00	Internal Plant Hire Procedure - REFER PLN-PRC 002
PRC 039	01	Joint Ventures Procedure
PRC 040	01	Petty Cash Procedure
PRC 041	01	Record Keeping & Filing Procedure
PRC 042	01	Services Procedure
PRC 043	01	Shuttering & Support Work Procedure
PRC 044	01	Site & Building Control Procedure

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PRC 045	01	Site Assets Procedure
PRC 046	01	Site Establishment & Closure Procedure
PRC 047	01	Site Stores Procedure
PRC 048	00	Site Wages Procedure
PRC 049	01	Stationery Procedure
PRC 050	01	Subcontractors Procedure
PRC 051	01	Survey Equipment Procedure
PRC 052	01	Time & Attendance Recording Procedure
PRC 053	01	Wages Procedure
PRC 054	01	Personnel & Insurance Procedure
PRC 055	00	Booking of Training Procedure
PRC 056	01	Plant, Environment & Safety Training Procedure
PRC 057	01	Data Card Procedure
PRC 058	01	IT Purchases Procedure
PRC 059	00	Incident Procedure
PRC 060	02	Requesting PPE Procedure
PRC 061	00	Claims Flowchart Procedure
PRC 062	00	Third Party Flowchart Procedure
PRC 063	00	Booking of Training – Cape Town
PRC 064	01	Rating Guide 2012-2013
PRC 065	00	EE Development Programme
PRC 066	01	JV Monthly Expense Recovery Procedure
PRC 067	01	JV Management Accounts Procedure

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PRC 068	02	Change Management Procedure
PRC 069	01	Industrial Relations Procedure
PRC 070	00	Travel Insurance Procedure (Emergency Medical Evacuation)
PRC 071	00	Appointment Labour Brokers Procedure
PRC 072	00	Rental/Lease/Relocation Procedure
PRC 073	00	Vendor Blacklist Procedure
PRC 074	04	WBHO Procedure Document EE Information
PRC 075	00	Off-Site Inspection
PRC 076	00	HDPE Installation Procedure
PRC 077	00	Attix 5 Remote Backup
PRC 078	01	Written Off Procedure
PRC 079	02	Copier Meter Reading
PRC 080	01	Loan Copier Procedure
PRC 081	00	ESX01 Backup and Restore Procedure
PRC 082	01	Procedure for Call logging and history update on BLU
PRC 083	01	Procedure for delivery of new copiers
PRC 084	00	Bursary Application Process
PRC 085	00	Email Process
PRC 086	00	Terminated Users and Computers
PRC 087	00	WBHO LDC Employment Procedure
PRC 088	00	Fabrication & Installation of Steel Piping
PRC 089	00	Hydrostatic Pressure Testing
PRC 090	00	Material Handling & Storage

PRC 091	00	Pickle & Passivate
PRC 092	00	Checking Copiers
PRC 093	00	Delivery of Copiers
PRC 094	00	Off Hired Copiers
PRC 095	02	Procedure for putting Computers onto the Domain
PRC 096	00	Electronic Communications System Policy
PRC 097	00	WiFi Procedure
PRC 098	00	Disciplinary Hearing Procedure
PRC 099	00	Supplier Quality Control
PRC 100	09	Pipelines Project Quality Plan (PQP)
PRC 101	00	Structural Steel Procedure
PRC 102	00	Material Handling & Storage
PRC 103	00	Control, Baking & Issue of Electrodes
PRC 104	00	Qualification of Welding Procedures and Welders
PRC 105	00	Weld Repair
PRC 106	00	Inspection and Testing of Welding
PRC 107	00	Control of Welding
PRC 110	00	IT Notes – Location Procedure

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ENVIRONMENTAL		
2.5.1	03	Procedure Index
2.5.2	02	Environmental Aspects
2.5.3	02	Legal & Other Requirements
2.5.4	02	Objectives, Targets & Programmes
2.5.5	02	Responsibility & Resources
2.5.6	02	Performance Reporting
2.5.7	02	Training
2.5.8	02	Communication
2.5.9	02	Document and Record Control
2.5.10	02	Operational Process Control
2.5.11	03	Emergency Planning
2.5.12	02	Monitoring & Measurement
2.5.13	04	Non-conformance Control
2.5.14	02	Internal audits
2.5.15	02	Management Review
HEALTH & SAFETY		
4.2.2.1	06	Incentive Procedure
4.2.2.2	06	Fire Extinguisher Exchange Procedure
4.2.2.3	06	Monthly HS Report Procedure
4.2.2.4	06	Safety Training Procedure
4.2.2.5	6.1	NCR Control Procedure

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4.2.2.6	6.2	Risk Assessment Procedure
4.2.2.7	06	Legal & Other Requirements Procedure
4.2.2.8	6.1	Training Competency Procedure
4.2.2.9	06	RA Monitor & Review Procedure
4.2.2.10	06	Lock out LDV Procedure
4.2.2.11	06	Lock out Grader Procedure
4.2.2.12	06	Lock out Trucks Procedure
4.2.2.13	06	Lock out General Procedure
4.2.2.14	06	Emergency Preparedness and response Procedure
4.2.2.15	6.1.2	Standard Accident Procedure
4.2.2.16	6.1.2	Emergency Evacuation Procedure
4.2.2.17	6.1	Near Miss Report Procedure
4.2.2.18	6.1	Non-conformance & Corrective Action Procedure
4.2.2.19	6.1	Root Cause Analysis Procedure
4.2.2.20	06	Incident Investigation Procedure
4.2.2.21	6.1	Non-conformance Control Procedure
4.2.2.22	6.1	Troxler Safety Procedure

WBHO	Quality Control Plan	Doc No.	F03
		Rev. No.	05
		Rev. Date	18/08/2014

Project: KPONE – DESIGN AND CONSTRUCTION OF A CONTAINER HANDLING AND DEVANNING TERMINAL TEMA - GHANA Contract No.: No1201

Process Description: General Requirements QCP No.: 1 Rev No.:

No	Activity	Acceptance Criteria / Specification	* Specification Requirement	Frequency	Checklist / Document type	Intervention Levels			
						Eng / Client	Con	Lab	Sub
1	Submit construction method for approval	Project Specification		Initial	Method Statement				
2	Implementation of Quality Management System (Quality Dept.)	ISO 9001:2008		Initial	QMS Implementation file & WBHO Procedures manual				
3	QMS Start-up Checklist	QMS		Initial	F05				
4	Review and Approval of Quality Control Plans and Documents	QMS		Once off	Documents review				
5	Submit Equipment and Plant schedule for approval	Project Specification		Initial	Plant schedules				
6	Establishment of Document & Drawings control systems	QMS		Routine	F02; E01; E04; E05; E06 & E07				
7	Approval of Site Engineering Queries	QMS		Routine	F07				
8	Calibration control and register for all instruments in place	QMS		Routine	E02 & Calibration Certificates				
9	Establish control of Non-conformities	QMS		Routine	E03 & F04				
10	Construction Plan (Program)	PS / QMS		Routine	CCS Program				
11	Handover of section / project	QMS		Completion	F32				
12	Feedback from Client	QMS		At Completion	F09				
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									

LEGENDS: ENG - Engineer CON - Contractor LAB - Laboratory SUB - Sub contractor

INTERVENTION KEYS: H - Hold W - Witness T - Test V - Verify DR - Document review S - Surveillance

	Name	Position	Signature	Date
Prepared By				
Reviewed By				
Clients Representative				
Contractor Representative				
Laboratory Representative				

* Please refer to Specifications Register E42

WBHO	Quality Control Plan	Doc No.	F03
		Rev. No.	05
		Rev. Date	18/08/2014

Project: KPONE – DESIGN AND CONSTRUCTION OF A CONTAINER HANDLING AND DEVANNING TERMINAL TEMA - GHANA **Contract No.:** No1201

Process Description: **Bulk Earthworks** QCP No.. 2 Rev No.:

No	Activity	Acceptance Criteria / Specification	* Specification Requirement	Frequency	Checklist / Document type	Intervention Levels			
						Eng / Client	Con	Lab	Sub
1	QCP approval			Initial	F03				
2	Submit method of survey setting out to be employed			Per section	Survey Records				
3	Permission to excavate			Per section	D02				
4	Clear and grub			Per section	C03				
5	Strip off Topsoil and stockpile			Per section	C51				
6	Earthworks cut			Per section	C04				
7	Roadbed preparation - Compacted to required density			Per section	C02				
8	Controls - Compaction Test, Inspect and approve earthworks material			Per section	Lab results & H03				
9	Fill layers - Specified thickness and compacted to required density			Per section	C05				
10	Controls - Compaction Test, Inspect and approve earthworks material			Per section	Lab results & H03				
11	Crushing and Screening			Per section	Site Instruction				
12	Controls - Compaction Test, Inspect and approve earthworks material			Per section	Lab results & H03				
13	Final Inspection and Handover of Bulk Earthworks			Per section	F32				
14	NCR system			On-going	E03 & F04				
15	Archive all records.			Final	All records				
16									
17									
18									
19									
20									
21									
22									

LEGENDS: ENG - Engineer CON - Contractor LAB - Laboratory SUB - Sub contractor

INTERVENTION KEYS: H - Hold W - Witness T - Test V - Verify DR - Document review S - Surveillance

	Name	Position	Signature	Date
Prepared By				
Reviewed By				
Clients Representative				
Contractor Representative				
Laboratory Representative				

* Please refer to Specifications Register E42

WBHO	Quality Control Plan	Doc No.	F03
		Rev. No.	05
		Rev. Date	18/08/2014

Project: KPONE – DESIGN AND CONSTRUCTION OF A CONTAINER HANDLING AND DEVANNING TERMINAL TEMA - GHANA Contract No.: No1201

Process Description: Civil Works QCP No.: 3 Rev No.:

No	Activity	Acceptance Criteria / Specification	* Specification Requirement	Frequency	Checklist / Document type	Intervention Levels			
						Eng / Client	Con	Lab	Sub
1	Submit concrete mix designs for approval	QMS		Initial	Mix design				
2	Ensure that all material approvals are obtained	QMS & SANS 1200		Initial	Material Test Certificates				
3	Demolition	SANS 1200		Per section	B24				
4	Survey & Setting out	SANS 1200		Before	Survey Records				
5	Clear & Grub	SANS 1200		Per section	C03				
6	Excavate and prepare formation	SANS 1200		Per section	B09				
7	Prepare for concrete - Pre concrete Inspection	SANS 1200		Per unit	B07				
8	Conduct concrete tests and verify cube results	SANS 1200		Per unit 50m³	Test Report				
9	Structure Release - post concrete Inspection	SANS 1200		Per unit	B16				
10	Backfill in layers prescribed - Take density test(where applicable)	SANS 1200		TMH1	Test Report				
11	Set HD Bolts in position	SANS 1200		Per unit	Survey Records				
12	Install Rails	SANS 1200		Per section	C16				
13	Final Inspection - Snag	QMS		Final	F08				
14	Compile as-build data and approve	QMS		Per structure	Data Pack				
15	Close out all non-conformance reports	QMS		Each NCR	F04				
16	Archive all records	QMS		Final	All Records				
17									
18									
19									
20									
21									
22									

LEGENDS: ENG - Engineer CON - Contractor LAB - Laboratory SUB - Sub contractor

INTERVENTION KEYS: H - Hold W - Witness T - Test V - Verify DR - Document review S - Surveillance

	Name	Position	Signature	Date
Prepared By				
Reviewed By				
Clients Representative				
Contractor Representative				
Laboratory Representative				

* Please refer to Specifications Register E42

WBHO	Quality Control Plan	Doc No.	F03
		Rev. No.	05
		Rev. Date	18/08/2014

Project: KPONE – DESIGN AND CONSTRUCTION OF A CONTAINER HANDLING AND DEVANNING TERMINAL TEMA - GHANA **Contract No.:** No1201

Process Description: Concrete Works **QCP No.:** 4 **Rev No.:**

No	Activity	Acceptance Criteria / Specification	* Specification Requirement	Frequency	Checklist / Document type	Intervention Levels			
						Eng / Client	Con	Lab	Sub
1	Submit concrete mix-designs to the Principal for Approval.	QMS		Initial	Mix designs				
2	Ensure that all necessary materials approvals are obtained	QMS		Initial	Materials test certificates				
3	Excavate and prepare formation	Project Spec		where applicable	B09				
4	Survey & setting out	Project Spec		before	J03 & J04				
5	Prepare for concrete - Pre-Concrete Inspection	Project Spec		Per unit	B22				
6	Conduct concrete tests (Cube & slump) and verify cube results	Project Spec		Per batch	Cube Test Report				
7	Structure release - Post Concrete Inspection	Project Spec		Per batch	B22				
8	Backfill in layers prescribed – Take density tests (where applicable)	Project Spec		Table 14.2	Lab test results				
9	Final Inspection - Snagging	Project Spec		Per Structure	F08				
10	Compile as-built drawing and approve	Project Spec		Per Structure	As-built drawings				
11	Hand over	Project Spec		Per Structure	F32				
12	Close out non-conformance reports	QMS		Each NCR	F04				
13	Archive all records	QMS		Final	All Records				
14									
15									
16									
17									
18									
19									
20									
21									
22									

LEGENDS: ENG - Engineer CON - Contractor LAB - Laboratory SUB - Sub contractor

INTERVENTION KEYS: H - Hold W - Witness T - Test V - Verify DR - Document review S - Surveillance

	Name	Position	Signature	Date
Prepared By				
Reviewed By				
Clients Representative				
Contractor Representative				
Laboratory Representative				

* Please refer to Specifications Register E42

Quality Management System Manual

CONTROLLED COPY NO:

	Designation	Initials & surname	Signature	Date
Prepared by	Group Quality Manager	P.A Boshoff		25/04/2012
Reviewed by	Quality Management Representative	P.J Harding		25/04/2012
Approved by	Exco	E.L Nel		25/04/2012

1. Scope

1.1 General

The scope of this manual covers all processes involved directly and indirectly in our construction business, from the procurement of the project to the delivery of the satisfactory work to the Client and to conform to the ISO 9001:2008 requirements for a Quality Management System.

1.2 Exclusions

ISO 9001:2008 Clause 7.3 design and development is not part of our core business. We are however in the process to define and develop procedures to include Design to our scope in the near future.

2. References

- ISO 9001:2008
- WBHO Charters, Policy's and Procedures
- Client and Contract Specifications

3. Terms and definitions

- QMS – Quality Management System
- Procedure – Specified way to carry out an activity
- Requirement – A need or expectation that is stated e.g. client's specifications drawings legal requirements and company procedures
- Conformity – Fulfilment of a requirement
- Concession – Permission to release work and/or supplied product that does not conform to specified requirements
- Nonconformity - Non-fulfilment of a requirement
- Corrective action – Action taken to eliminate the cause of a detected nonconformity
- Preventive action – Action taken to eliminate the cause of a potential nonconformity
- SABS – South African Bureau of Standards
- SANS – South African National Standards
- Top Management – Executive Board (EXCO)

4. Quality Management System

4.1 General

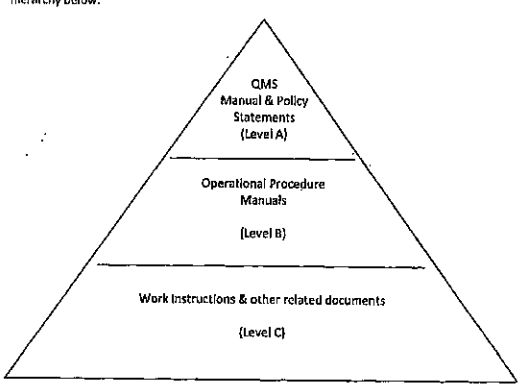
WBHO has established QMS Manual & Policy statements with necessary documents to clearly define interaction and control necessary for different processes.

Outsourced Processes will be controlled by means of the formal supplier process. Refer to 7.4

4.2 Documentation

4.2.1 General

Documentation relating to the Quality Management System is categorised as shown in the hierarchy below:



- Level A – Describes the overall quality management system in relation with the stated quality policy and objectives.
- Level B – A documented procedure defining the functions and activities of the various operations.
- Level C – Consists of detailed work documents. E.g. method statements, inspection checklists, equipment registers, work instructions and operator manuals.

4.2.2 Quality Manuals and Procedures

Senior management ensures that all procedure manuals are documented and approved. These operational procedures will be used to define the functions and activities of the various operations and departments (Refer to the Electronic Procedure Manual, Policy Statements & Procedure PRC 002, Interaction of processes).

These documented procedure manuals are classified as level B documents and their distribution will be managed & maintained by an electronic management system. (Lotus Notes platform)

4.2.3 Control of Documents (Refer to procedure PRC 004 and PRC 005)

A documented procedure has been established to ensure that quality management system documents are properly controlled. The controls established will ensure that:

- management approves these documents for adequacy before being issued
- documents are reviewed and updated as necessary and then re-approved
- changes and the current revision status are clearly identified
- relevant revisions are available at point of use
- documents remain legible and readily identifiable
- documents of external origin such as drawings, project specifications, construction standards, tender documentation, designs, instructions, correspondence, acts, regulations and statutory requirements will further be controlled
- superseded documents are retrieved from circulation and identified as such
- control of electronic copies

4.2.4 Control of Records (Refer to procedure PRC 006 and PRC 024)

Any document that can be used as objective evidence to prove that requirements have been fulfilled will be considered as records of the quality management system.

The records include electronic documents. Back-up of electronic information will be undertaken on a daily basis and will be stored in a safe and secure place.

A documented procedure has been established to ensure that records are properly maintained.

Once records are finalised, they will be housed in a secure archiving system and kept for a retention period determined by the following:

- Client Requirements
- Legal and Statutory Requirements
- Relevant Operational Procedures (Refer to 4.2.2)

WBHO will ensure that all records in archiving system remain legible, readily identifiable and retrievable.

5. Management

5.1 Management Commitment

Management is committed to the development and implementation of the quality management system by continually improving its effectiveness (Refer to Quality Policy Statement in clause 5.3 of this manual).

This is further demonstrated by:

- appointment of a quality management representative along with divisional co-ordinators
- ensuring the availability of resources and infrastructures
- conducting annual management review meetings

5.2 Client Focus (Refer to Clause 7.2.1 and 8.2.1)

Management shall ensure that the client requirements are determined and met to obtain client satisfaction. These requirements shall comprise the following:

- requirements specified by the client
- requirements not stated by client, but are common construction practice
- statutory and regulatory requirements
- additional requirements – change of scope, site instructions, etc
- feedback from the client relating to the perception as to whether we have met the stated requirements

5.3 Quality Policy (Refer to POL-QA 001)

5.4 Planning

5.4.1 Quality Objectives (Refer to Quality Policy Statement)

Management will ensure that quality objectives, including those needed to meet the requirements of projects, have been established within the organisation. These objectives will be measurable and consistent with the quality policy and will be continuously reviewed. The planning will include the provision of resources which is covered under clause 6 of this manual.

5.4.2 Management System Planning (Refer to Project Quality Plan (PQP) & procedure PRC 016)

The establishment of these objectives is demonstrated by:

- conducting pre-plan meetings where project objectives and means of attaining them are discussed and recorded
- construction programmes being drawn-up relating to specific timeframes for completing the project
- conducting project meetings with the client / representative to review these objectives
- implementation of quality, safety and environmental plans related to the project (refer to Project Quality Plan (PQP))

5.5 Responsibility, Authority and Communication

5.5.1 Responsibility and Authority (Refer to procedure PRC 003)

The responsibility, authority and the interrelation of all personnel, who manage, perform and verify work affecting quality, must be clearly defined in all projects. This will be demonstrated in a form of:

- Contract organogram (Management structure)
- Appointments
- Responsibility Matrix

5.5.2 Management Representative

Dear Mr. P. J Harding

In terms of our Quality Management System, I hereby appoint you as the Quality Management Representative of WBHO Construction (Pty) Ltd.

Your duties will include but not limited to the following:

a) Ensure that the company's QM system complies with ISO 9001:2008 requirements.
b) Ensure that the company's QM system is established, implemented and maintained in accordance with our Quality Policy Statement and Quality Objectives.
c) Ensure that scheduled QMS audits are undertaken in all construction and departmental areas and that these findings are recorded, addressed and distributed to all relevant persons.
d) Ensure that all projects and departments receive the necessary assistance, information and training in the implementation of the QM system.
e) Ensure that the QM system is conveyed over to our sub-contractors and suppliers.
f) Ensure that all information pertaining to the QM system are analysed and reported at Divisional and Executive Management level.
g) Ensure that all improvements are implemented and communicated at all levels of the organization.
h) Ensure conformance to the client's requirements or better.

Please report all deviations and areas of non-compliance, which you are unable to rectify, to me directly.

Regards

E. L Nel
C.E.O

25/04/2012
Date

ACCEPTANCE

I do hereby understand and accept the appointment of Quality Management representative.

Quality Representative

25/04/2012
Date

5.5.3 Internal Communication (Refer to PRC 003)

Management encourages appropriate communication processes to ensure the effectiveness of the management system. This can be in a form of management led communication in work areas, e-mails, memorandums, meetings, newsletters, notice boards, etc.

5.6 Management Review (Refer to procedure PRC 012)

5.6.1 General

Top Management will review the quality management system, at least once per year, to ensure its effectiveness. This review shall include assessing the quality policy, quality objectives and the need for changes to the Quality Management System.

5.6.2 Review Input

Results of audits, client feedback, follow-up action from previous management reviews, status of preventive action and corrective action.

5.6.3 Review Output

Effectiveness of QMS, improvement of projects performance and resources required.

6. Resource Management (Refer WBHO Policy Statements)

6.1 Provision of Resources

During the procurement of each project, management will ascertain the availability of resources required for undertaking the project in a manner that will satisfy the client.

On the successful award of a project, management will hold the necessary pre-plan meeting with the appointed project management team and various departments within the organisation. The purpose of this meeting is to determine and finalise the required resources.

During the execution of the project, site management will continually review the availability of resources.

6.2 Human Resources

6.2.1 General

Management will ensure that all projects and operational departments are adequately resourced with competent personnel. The competency levels shall be based on various factors namely: educational qualification, training skills and work experience.

6.2.2 Competence, Training and Awareness (Refer to procedure PRC 011)

Management ensures that:

- formal inductions are conducted to all new employees
- personnel are competent to conduct their functions
- training needs are continually evaluated for personnel development
- appropriate records of education, training, skills and experience are maintained
- performance appraisals of required personnel are conducted

6.3 Infrastructure

Management will determine, provide and maintain client requirements as stated in contract. The following aspects will be taken into account:

- offices for both client's representative and WBHO personnel
- IT Services such as systems & software
- electronic equipment such as computers, fax machines, photocopiers, telephones etc
- proper sanitation facilities i.e. toilets and drinking water
- workshop, stores and test laboratories where required
- transportation facilities when required by contract
- security personnel

6.4 Work environment

WBHO has established policies and procedures concerning the work environment. In all cases legal requirements of both South African and International legislations, were taken into account when establishing these policies/procedures.

7. Project Realisation

7.1 Planning of Project Realisation (Refer to procedure PRC 018)

At the beginning of each project, quality control plans (QCP's) will be established. These quality control plans will outline the processes of the quality management system and will address the following:

- Requirements of the project
- Sequence of activities required to deliver each process of construction
- Specifications to which an activity must conform
- Frequency of tests
- Frequency of inspections and validation of activities
- Documents to be recorded as evidence that requirements have been fulfilled
- Verification stages, verification criteria and intervention of each party involved in the process

The quality control plan will be approved by the project management and when required by the client's representative. During the course of the project, the quality control plan will be reviewed.

7.2 Client-related Processes

7.2.1 Determination of Requirements Related to the Project

Management will carefully review tender documentation to determine requirements specified/stated by the client. When requirements in the tender document are not clearly stated, WBHO will take the initiative to seek clarity from the client before submission of such tender. This includes applicable client, statutory & regulatory requirements.

7.2.2 Review of requirements related to the project

When contract requirements change, WBHO will ensure that the relevant documents are amended and that personnel are made aware of these changes. These changes will be issued in the form of a site instruction, variation order or revised drawing. These documents will form part of records to be maintained in archives.

7.2.3 Client Communication (Refer to procedure PRC 003)

WBHO maintains an open door policy with regards to client communication; this policy is evident at all levels of management.

Continual client communication ensures that the following matters are resolved:

- Project information
- Design queries and amendments
- Client feedback, including complaints

Communication will be in a form of meetings (frequency to be agreed with the client), site engineering queries, site instructions, telephonic conversations, enquiries, formal correspondence, faxes and e-mails etc. All records raised from these communications shall be maintained.

7.3 Design and Development (Excluded, refer clause 1.2)

7.4 Purchasing (Refer to procedure PRC 014)

7.4.1 Purchasing Process

In relation to product specifications, WBHO will perform supplier verification audits to ensure that products conform to the specified requirements. These audits will be undertaken by the Quality Management Department along with technically competent personnel.

7.4.2 Purchasing Information

Purchasing documents shall specify type, quantity, physical properties, dimensions, delivery price and any quality standard that may be applicable. Purchasing documents shall be reviewed for adequacy prior to approval by relevant management.

Purchase requisitions must be fully completed, detailing specific requirements of the items being ordered and include details where applicable of drawings, specifications, grades of material, codes of practice and test as applicable.

7.4.3 Verification of purchased product

Suppliers will be encouraged, wherever possible to deliver their products with a certificate of conformance. Inspection of delivered goods is still the responsibility of site management.

If raw materials or products are to be inspected at the supplier's premises prior to dispatch, this must be clearly stated on our purchase order document.

Ensure that any raw material or components are checked by competent personnel, once the items arrive at our premises. Ensure an investigation is carried out, if any raw materials or components are rejected by the client or his representative. The Non-conformance process will be followed.

7.5 Production and Service Provision

7.5.1 Control of Production and Service Provision

Project management will ensure that all projects are carried out under controlled conditions, these will include but not limited to the following;

- The availability of project information such as, approved and updated drawings, site instructions and project specifications
- The implementation of progress reports, progress charts, internal audits and verification of test results
- The availability of approved material compositions as required. (i.e. concrete mix-designs, asphalt mix-designs and mortar mix-designs)
- The availability of work instructions, company procedure manuals and equipment operating manuals
- The suitable use and availability of construction plant and equipment along with required maintenance schedules
- The availability and use of monitoring and measuring equipment, such as: survey equipment, laboratory equipment, workshop facilities
- The implementation of inspection checklists and material testing by competent personnel
- The formal handover of projects

7.5.2 Confirmation/Validation of Production Processes

Confirmation that requirements of the project will be fulfilled is provided through objective evidence, such as:

- Adherence to approved Quality Control Plans
- Providing staff organisational charts and labour schedules
- Providing equipment and plant schedules
- Providing method statements for specialised work processes
- Providing material samples for client approval
- Providing material test certificates that form an integral part of the completed works
- Maintaining records of all tests, inspections checklists and surveys conducted on site
- Maintaining records of meetings, correspondence, instructions and engineering queries
- Providing as-built drawings and records

7.5.3 Identification and Traceability

WBHO ensures that the following items and materials are marked and identified:

- Samples of materials at test laboratories
- Items in store and in lay-down areas (e.g. reinforcing steel)
- Plant and equipment

- Non-conforming products
- Silos and stockpiles at batch plants and pre-mix plants
- Items and spares at plant workshops
- Project documents records
- Document archives records

Measures will be taken to ensure that all raw materials are traceable from its place of supply to the completed work (project). This will be achieved by:

- Maintaining material test certificates where required as defined in the QCP
- Ensuring that records generated refer back to the source of origin
- Ensuring that delivery records refer back to ordering and material request

7.5.4 Client Property

While the project is under construction due care will be taken to protect and safeguard client property along with any other infrastructure adjacent to the project.

Further to the above and when required, Environmental Impact Assessments (EIA) will be conducted.

Should any client property be lost, damaged or otherwise found to be unsuitable for use, the matter will be reported to the client immediately and all such records maintained.

Client property will include intellectual property & personal data such as drawings and tender documents. When not indicated, WBHO will seek instructions from the client on ways of disposing the documents and records.

7.5.5 Preservation of product. (Care of the Works)

Whilst the project is under construction, WBHO will preserve all completed works, supplied materials and prefabricated products (e.g. pipes and tiles).

Care of the works shall include identification, proper handling and storage and protection.

In relation to the risks of the project, adequate security measures will be adopted to ensure the safeguarding of persons, property and materials.

7.6 Control of Monitoring and Measuring Equipment (Refer to procedure PRC 020)

Project management will ensure that all monitoring and measuring equipment are calibrated and are issued with a valid calibration certificate.

This equipment will include, but not limited to the following:

- Scales
- Nuclear testing gauges (e.g. troxlers)
- Dumpy levels, total stations & theodolites
- Cube crushing machines
- CBR press
- Batch plants
- Weighbridge scales

Other equipment that cannot be calibrated / adjusted such as: measuring tapes, spirit levels, thermometers etc. will be verified and checked for correctness. If this equipment is found to be faulty, they will be disposed immediately.

The required calibration frequencies along with the current calibration status of the equipment will be entered onto equipment calibration register. Records of the results of calibration and verification will be maintained.

8. Measurement, Analysis and Improvement

8.1 General

WBHO will plan and implement monitoring, measurement, analyse and improve processes to ensure conformance to requirements.

8.2 Monitoring and Measurement

The following processes will be implemented to measure the performance of the quality management system:

8.2.1 Client satisfaction (Refer to procedure PRC 019)

Feedback from formal meetings with the representatives / client's will be used as a tool to monitor client's perception as to whether requirements have been met. Feedback will be in the form of a Questionnaire which requires information on our competency and performance.

On completion of the Questionnaire, the findings will be analysed and assessed while the results are then reviewed at Management board meeting and annual review meetings.

8.2.2 Internal audits (Refer to procedure PRC 007)

The Quality Management Department will conduct internal audits at scheduled intervals. The purpose of these audits is to ascertain whether the quality management system has been effectively implemented and maintained as per ISO 9001:2008 requirements.

External audits – If required, auditors from consultants will be approached to carry out audits, otherwise SABS will continue with the six monthly audits.

8.2.3 Monitoring & Measurement

The Group Quality Manager will apply suitable methods for monitoring and measurement of the QMS processes and products. Appropriate corrective action will be taken to ensure conformity, and release of product and service delivery will only take place once all processing has satisfactorily taken place.

Our Quality Management System processes will be identified and monitored to ensure that they achieve the planned results. Processes to be monitored will be:

- Client related processes – to ensure their requirements are understood and communicated
- Planning – to ensure that we deliver quality on time
- Internal Communication – to ensure that it is timeous and adequate
- Provision of resources – to ensure contracts are adequately resourced
- Purchasing – to ensure materials conforms to requirements
- Identification and traceability – to ensure that product identification is maintained
- Calibration - to ensure that only calibrated equipment are used in processes
- Internal Audits - to ensure that deficiencies are identified and that appropriate corrective action is taken
- Control of non-conforming product
- Corrective and Preventive actions - to ensure continuous improvement

8.2.4 Process control

Competent personnel will conduct in-process inspections and testing of works to verify that project requirements have been met. This will be carried out at appropriate stages of work (e.g. pre-concrete pour inspections).

These checklist and test results have been adapted to provide the client with the opportunity of approving the construction processes. This system ensures that the subsequent process may not proceed until satisfactory results have been achieved or otherwise approved by the client.

8.3 Control of non-conformances (Refer to procedure PRC 008)

Purchased products, materials and any undertaken work that does not conform to project requirements will be identified and controlled to prevent its unintended incorporation into the project.

A documented procedure has been established to control non-conformances. Non-conformances will be dealt with in one or more of the following ways:

- Non-conformance corrected and re-inspected to meet requirements (Rework)
- Non-conformance accepted and authorised for use under concession (Use as is)
- Non-conformance rejected as unsuitable

Costs associated to the non-conformances will be calculated and attached to the non-conformance report.

All the detected non-conformances will be summarised in a non-conformance register. Records of non-conformances and corrective action including concessions will be analysed and maintained.

8.4 Analysis of Data

- Analyse feedback regarding customer/client perception of completed projects.
- Evaluate subcontractors and suppliers.
- Evaluate checklists and quality control plans for additional value added improvements.
- Evaluate NCR trends on a monthly basis and issue Group NCR communiqué where necessary.
- Analyse market trends.

8.5 Improvement

8.5.1 Continual Improvement (Refer to Clause 5.6)

- Non conforming products are investigated and reported to management on a monthly basis.
- Review the quality policy and quality objectives.
- Feedback of internal QA Audits conducted.
- Completion/correctness/corrective action of completed Corrective Action Notifications.
- Monthly reports from the quality department.
- Management review.

8.5.2 Corrective Action (Refer to procedures PRC 009)

Management shall take action to eliminate the cause of non-conformities in order to prevent their reoccurrence. Management will decide on the corrective action to be taken.

A documented procedure for corrective action has been established to ensure that all areas of non-conformances are properly investigated, corrected and prevented from re-occurring.

8.5.3 Preventive Action (Refer to procedure PRC 010)

Management shall determine actions to eliminate the causes of potential non-conformities in order to prevent their occurrence.

To oversee the systems that are set in place, to audit them to ensure that they are being used effectively, and to analyse all records relating to processes and product quality and to identify trends with a view to eliminate potential causes of non-conformances.

Analyse and report on a regular basis, areas where processes or product quality have been effected. This will include, but not be limited to the following;

a) Customer questionnaires and complaints
b) Audit results – both internal and external
c) Corrective Action Notifications
d) Non-conforming raw material or product reports
e) The supplier rating system

These records will be analysed to identify trends and determine potential non-conformities and their causes.

9. Note

This Document describes the Quality Management System. Please refer to the detailed Quality Management Systems Manual, Policy Statements and Quality Management Procedures for more information on controls to be adopted within the WBHO Group. A controlled copy of the WBHO Procedures Manual is available online.

WBHO
RELY ON OUR ABILITY

Doc. Type	Standard
Doc. No.	STD-02-CSSQ
Rev. No.	01

STANDARD

Criteria for Suppliers/Sub –contractors Quality Management

(CSSQ)

Reviewed By:	Approved By:
Arno Boshoff	Terry Armstrong
Group Quality Manager	Commercial Director
Date: 22/04/2010	Date: 26/04/2010

TABLE OF CONTENTS

1. DEFINITIONS

CAR	-	Corrective Action Request
Concession	-	An application by the supplier/sub-contractor and an acceptance by the contractor of a deviation from specified requirements
Inspection	-	Activities (e.g. measuring, examining, testing, gauging, etc.) comparing 1 or more characteristics of material or services with specified requirements to determine conformity
NCR	-	Non-Conformance Report
Non-Conformance	-	A deficiency (in characteristic, documentation or procedure), which renders the quality of an item (of plant, material or equipment) unacceptable, indeterminate or not according to specified requirements
Purchase Order/Contract	-	For the purpose of this document the term "purchase order" will also mean contract
Contractor	-	The organisation which issues the purchase order and which is responsible for payment for the plant, material or equipment supplied in terms of the purchase order
QCP	-	Quality Control Plan: a document setting out the supplier/sub-contractor's quality control measures to be implemented in the supply of plant, material or equipment
QMS	-	Quality Management System
Supplier/sub-contractor	-	The organisation responsible for fulfilling the requirements of the purchase order; for the purpose of this document the term "supplier/sub-contractor" will also mean contractor

2. PURPOSE

This procedure details the minimum quality requirements that supplier/sub contractors will comply with in supplying plant, material, equipment and or services.

3. SCOPE

The procedure covers to all enquiries and purchase orders issued by WBHO for plant, material, equipment and services.

4. REFERENCES

ISO 9001:2008 QMS - Requirements

5. RESPONSIBILITIES

5.1 The site agent will be responsible for specifying the plant, material, equipment or service required and for reviewing, granting or rejecting concession requests.

5.2 The group quality manager will be responsible for reviewing the appropriate supplier/sub-contractor controls. This includes supplier/sub-contractor QMS requirements, assessments, evaluations, pre-inspection meetings, audits, surveillances, inspections and releases as required. The group quality manager will also be responsible for co-coordinating the review and approval of QCPs.

5.3 The inspector will be responsible for ensuring that all specified inspection and test requirements, including those specified by the supplier/sub-contractor, are correctly carried out. The inspector will also be responsible for issuing inspection reports and release notes.

6. PROCEDURE

6.1 Supplier/sub-contractor Quality Requirements

The site agent and project quality manager will determine the quality requirements included in enquiries and orders for plant, material, equipment or service.

6.2 Quality System

6.2.1 The supplier/sub-contractor will maintain a QMS in line with the requirements of the ISO 9001:2008 quality management standard, or an equivalent approved by the WBHO Quality Department, in writing, to ensure that plant, material, equipment or services conform to specified requirements.

6.2.2 The contractor may request a copy of the supplier/sub-contractor's quality manual for review. This may be followed by a quality audit or surveillance to obtain objective evidence that an effective QMS has been established and is being maintained.

6.3 QCPs

6.3.1 The supplier/sub-contractor will provide QCPs, specifying the proposed quality control activities for the scope of supply. QCPs will incorporate, as a minimum, the requirements specified by the Consultant. These will not necessarily constitute the total quality control to be carried out. QCPs will also: reference the specifications, procedures, codes and standards which apply to the listed activities; the acceptance criteria; the records to be produced; and will incorporate all supplier/sub-contractor activities.

6.3.2 QCPs will be prepared either on the contractor's format or on the supplier/sub-contractor's standard format, if this contains equivalent required data.

6.3.3 Detailed QCPs, fully satisfying the requirements in 6.3.1, will be submitted for approval in line with the purchase order requirements.

6.3.4 The supplier/sub-contractor will not undertake any work before the relevant QCP is approved or without the written consent of the contractor.

6.3.5 Deviations from approved QCPs will only be permitted following approval in writing by the contractor.

6.4 Contract Review Meeting

A contract review meeting may be held at the discretion of the contractor, the scope of which will include, but not be limited to the items listed in the attached contract review meeting agenda.

6.5 Inspection

6.5.1 Hold point = H - This indicates an intervention which is considered vital to the quality, integrity and safe functioning of the plant, material, equipment or completed works and which can only be achieved at this point. Hold points which are nominated in the QCP indicate inspections at which the contractor and/or his representative will be present. Supplier/sub-contractors must be authorised, by receiving a copy of the visiting inspector's acceptance report or an inspection waiver (see Section 6.9) before proceeding beyond any hold point.

6.5.2 Witness point = W - This indicates an intervention which may be equally as important as a hold point, but which can be reasonably carried out after the point has been passed. Supplier/sub-contractors may proceed beyond witness points without a visiting inspector's acceptance report, if the supplier/sub-contractor has notified the contractor of the witness point and the contractor does not attend for any reason. An acceptance report will be issued during the next visit, following demonstration of compliance by the supplier/sub-contractor.

6.5.3 During approval of the QCP, interventions will be added by the contractor and the AIA where relevant. (Refer to 6.10.) These will indicate the contractor's intended monitoring of the supplier/sub-contractor's and/or sub-supplier/sub-contractor's quality control.

6.6 Supplier/sub-contractor's Inspection

6.6.1 The supplier/sub-contractor will, as a minimum, carry out the inspections detailed in the approved QCP and maintain the required records for review by the contractor.

6.6.2 The supplier/sub-contractor will ensure that appropriate quality requirements are included in orders for material or services provided by their supplier/sub-contractors. QCPs, monitoring at their supplier/sub-contractor's works, and retention of the necessary records, will be included where necessary.

6.7 Readiness for Inspection

6.7.1 Plant, material, equipment or completed works will be deemed to be ready for inspection by the contract. only when:

a) The supplier/sub-contractor has carried out his own inspection at the identified stage and is satisfied that plant, material, equipment or completed works meet the specified requirements. Documented evidence of this will be maintained by the supplier/sub-contractor.

b) All applicable certificates and quality documents are available for review at the inspection location.

c) The latest revisions of approved drawings and/or procedures, with evidence of acceptance by the contractor and/or his nominated representative, are available at the inspection location for use by the contractor and/or his nominated representative.

d) The QCP for the plant, material, equipment or service has been approved by the contractor.

6.8 Notification of Readiness for Contractor's Inspection

6.8.1 Notification is required for both Hold and Verification points at least 1 working day in advance of readiness for inspection.

6.8.2 The person nominated in the purchase order is the contact for this notice.

6.8.3 Supplier/sub-contractors will be charged for the cost of abortive inspection visits. A visit will be considered to be aborted if:

a) the supplier/sub-contractor advises readiness for inspection and the plant, material or equipment and/or associated documentation is not ready when the contractor's inspector arrives or

b) the contractor's inspector identifies that plant, material or equipment is not to specification such that the supplier/sub-contractor's inspector should have identified the non-conformity prior to advising readiness for the contractor's inspection

6.9 Inspection Waiver

An intervention point may, at the sole discretion of the contractor, be waived. Such a decision will be recorded on the QCP and will be signed by the contractor and supplier/sub-contractor.

6.10 Statutory Material/Equipment (AIA)

6.10.1 AIA activities (if required) will be in line with the requirements specified in the contract.

6.10.2 Where a supplier/sub-contractor appoints an AIA, the AIA will be subject to approval by the contractor.

6.11 Audit/Surveillance

6.11.1 The contractor reserves the right to conduct a supplier/sub-contractor quality assessment prior to the award of any purchase order, to verify that the supplier/sub-contractor's quality system complies

with the relevant quality standard. The contractor may also conduct a quality system audit at any time after the award of a purchase order.

6.11.2 If the supplier/sub-contractor's quality system is found to be deficient, he will be given the opportunity to take corrective action and bring his system up to the required standard, within a defined period of time. A follow-up audit will be carried out to verify that the supplier/sub-contractor has carried out the necessa corrective action(s). If, during a follow-up audit, it is found that the required corrective action(s) have n been carried out, the contractor reserves the right to take such actions as necessary, at the supplier/sub-contractor's cost, to rectify deficiencies.

6.11.3 The contractor may also use surveillance by inspectors to monitor the supplier/sub-contractor's quality control. This will normally take the form of an audit of a section of the supplier/sub-contractor's quality system. Physical and documentary evidence will be required to verify compliance.

6.12 Deviations from Purchase Order Requirements

6.12.1 The supplier/sub-contractor may request a concession to deviate from purchase order requirements, QCP's and/or plant, material or equipment specifications.

This will be done by formal written application to the contractor. Agreement to a concession may be granted only in extreme circumstances. The contractor will formally notify the supplier/sub-contractor of his acceptance/rejection of the concession request.

6.12.2 Only the responsible engineer has the authority to grant concessions. The contractor's inspector will not accept deviations unless a copy of the approved concession is offered at the inspection.

6.12.3 All approved concessions will be included within the quality control data pack.

6.13 Non-Conforming material, plant, equipment or completed work.

6.13.1 Non-conforming plant, material, equipment or completed work may be identified by the supplier/sub-contractor during manufacture or during an inspection by the supplier/sub-contractor or contractor.

6.13.2 In such cases, the supplier/sub-contractor will issue a NCR in line with his own quality system requirements. The NCR becomes the means by which the non-conforming plant, material, equipment, completed works and corrective action are controlled.

6.13.3 The non-conforming plant, material, equipment or completed work may only be disposed of by:

a) Rework: bring back exactly to specified requirements

b) Repair: make fit for purpose, but not exactly to specified requirements

c) Use-as-is: may be used subject to contractor approved concession

d) Scrap: do not use for any order

6.13.4 The supplier/sub-contractor will maintain a register of NCRs together with their status. The contractor reserves the right to request copies of NCRs to review deviations and dispositions. Original NCRs will be included in the final quality control dossier.

6.13.5 The contractor may carry out surveillance to verify satisfactory compliance with the NCR disposition activities.

6.13.6 The supplier/sub-contractor will ensure that his procedures provide for the identification and segregation of non-conforming plant, material, equipment or completed work.

6.13.7 If the contractor identifies a non-conformity that has not been detected by the supplier/sub-contractor's quality system, the contractor may raise a NCR on the supplier/sub-contractor.

6.13.8 Corrective action which necessitates additional inspections and/or tests will be included in an updated QCP which will be submitted to the contractor.

6.14 Quality Control Dossier Content

6.14.1 The supplier/sub-contractor will include a quality control dossier index with his QCP. The contractor will review the index against the purchase order requirements. After it has been approved by the contractor's inspector, the supplier/sub-contractor will be required to compile the quality control dossier in line with the approved index.

6.14.2 Any change of work scope resulting from an amendment to the purchase order may require the supplier/sub-contractor to submit an amended dossier index to the contractor.

6.15 Quality Control Dossier Compilation

A master quality control dossier will be compiled progressively during manufacture and will contain the documents relating to the relevant stages of production. In this way, the quality control dossier will be complete when the manufacture is complete.

6.16 Documents and Authorisation

6.16.1 When a sub-supplier/sub-contractor carries out an inspection, he will produce and sign the document and the supplier/sub-contractor will verify and countersign acceptance.

6.16.2 All documents will be verified and signed by the supplier/sub-contractor prior to being submitted to the contractor's inspector/AIA. When inspections and tests are witnessed or verified by the contractor's inspector, the appropriate document will be signed by the contractor's inspector and the QCP will be endorsed against the appropriate entry.

6.17 Code Data Book

6.17.1 If a code data book is required, it will be provided by the supplier/sub-contractor.

6.17.2 A master code data book will be compiled in the same way as a master quality control dossier is compi... (See section 6.15.1.)

6.18 Inspection Release

All material supplied will be released by the contractor's inspector prior to shipment by the supplier/sub-contractor. The contractor's inspector will issue an inspection/release document. A copy of the inspection/release will accompany the material to the delivery point. Another copy will be submitted with the supplier/sub-contractor's invoice. (This requirement may be waived at the discretion of the contractor)

7. DOCUMENTATION

The following documentation is required to implement this procedure:

a) QCP:

b) Data Pack Index:

c) Concession request:

d) Concession register

e) Contract review meeting agenda:

WBHO	Quality Control Plan	Doc No.	F03
		Rev. No.	05
		Rev. Date	18/08/2014

Project: KPONE – DESIGN AND CONSTRUCTION OF A CONTAINER HANDLING AND DEVANNING TERMINAL TEMA - GHANA Contract No.: No1201

Process Description: Welding QCP No.: 5 Rev No.:

No	Activity	Acceptance Criteria / Specification	* Specification Requirement	Frequency	Checklist / Document type	Intervention Levels			
						Eng / Client	Con	Lab	Sub
1	Approve welding procedure specification (WPS)	Project Specification		Before welding	Procedure				
2	Approve procedure qualification record (PQR)	Project Specification		Before welding	Procedure				
3	Approve welders qualifications	Project Specification		Before welding	L25				
4	Material Certificates of Consumables	Project Specification		Before welding	Certificates				
5	Approve Non destructive examination (NDE) technicians qualifications	Project Specification		Before welding	Certificates				
6	Receive pipe from client	Project Specification		Per Batch	Certificates/L46				
7	String and set up for welding	Project Specification		Per Weld	L11				
8	Visual inspection of set up	Project Specification		Per Weld	L38b				
9	Weld pipe	Project Specification		Per Weld	L11				
10	RT inspection of weld	Project Specification		Per Weld	L17				
11	Weld Repairs	Project Specification			L19				
12	Weld Mapping	Project Specification			L09				
13	Close out non-conformance reports.	QMS			F04				
14	Archive all records.	QMS							
15									
16									
17									
18									
19									
20									
21									
22									
23									

LEGENDS: ENG - Engineer CON - Contractor LAB - Laboratory SUB - Sub contractor

INTERVENTION KEYS: H - Hold W - Witness T - Test V - Verify DR - Document review S - Surveillance

	Name	Position	Signature	Date
Prepared By				
Reviewed By				
Clients Representative				
Contractor Representative				
Laboratory Representative				

* Please refer to Specifications Register E42

QUALIFICATION OF WELDING PROCEDURES AND WELDERS

REVISION MATRIX			
Rev No.	Date	Paragraph Changed	Description of change
01	19/09/2017		

TABLE OF CONTENTS

1. SCOPE

This Work instruction applies to The Company welding process and personnel.

2. PURPOSE

This work instruction describes the method and responsibilities for the qualification of welding procedures and welding operators.

3. DEFINITIONS

Approval Authority	A person with the authority to approve a procedure
Author	A person or team assigned responsibility to draft or redraft a procedure
Controlled Copy	A copy that has controlled or limited distribution, and of which the text cannot be corrupted
The Company	WBHO
Management Plan	A high level document that provides an overview of specific management processes for the project
Procedure	A document which describes the roles and responsibilities for a specific activity
Quality Representative	A person who has the authority to carry out the duties related to quality assurance within the company
Work Instruction	A document that provides detailed process or technical guidance to a specific function on the project

4. REFERENCE DOCUMENTS

4.1 Specifications

ISO 9001:2008	Quality Management System Requirements
ISO 14001:2004	Environmental management system requirements
OHSAS 18001:2007	Occupational Health and Safety Management System
ISO SANS 3834	Quality requirements for Fusion Welding of Metallic Materials
AWS D1:1	Structural Welding Code – Steel
ASME IX	Boiler and Pressure Vessel Code
For any associated Procedures, Instructions or Forms refer to the text of this procedure.	

5. DOCUMENTS

None.

6. RESPONSIBILITIES

6.1 Contractor's Construction Manager:

The Construction Manager shall ensure that all personnel reporting to him are familiar and adhere to this procedure.

6.2 Contractor's Foreman/Supervisor:

This procedure shall be fully complied with and enforced by all shop and site foremen and supervisors.

6.3 Contractor's Quality Manager:

The Quality Manager shall carry out audits to ensure compliance to this procedure.

6.4 Contractor's QC Inspector:

The Quality Control Inspector shall ensure that this procedure is implemented.

7. PROCEDURE

7.1 Compilation of Preliminary Welding Procedure specifications.

A preliminary welding procedure specification shall be compiled by the welding engineer prior to start of any welding site welding activities.

7.2 Base Material and Welding Consumables

- Base material and welding consumables shall be purchased as indicated on the preliminary welding procedure specification.
- Any possible alternatives from that specified in the WPS should be clarified with the Welding Engineer if it may be required to deviate from the specified materials due to concerns in availability.
- Receiving inspection shall be done by the Quality Inspector to ensure both parent metal & welding consumables meet the order requirements. This must be verified by a Welding Engineer as part of the supporting documentation to the Welding Procedure Qualification Record or Welder Qualification Record.
- Cast numbers on test pieces shall be transferred and witnessed by the relevant responsible (Third Party Inspection or notified Body) to insure traceability is maintained.

7.3 Welding of Test Pieces

- All test pieces shall be prepared in accordance with the relevant code of manufacturing to which the qualification should apply.
- The Welding Engineer is responsible for ensuring that any of the Company or project specific requirements, e.g. number of post weld heat treatment cycles etc. are included.
- This relates to the following:

- Where the production or joint geometry requirements do not represent the standardized test pieces, mock-up samples may be welded under the conditions stipulated by the relevant manufacturing code.
- Shape and dimensions of test pieces:
- The length and number of test pieces shall be sufficient in order to remove all the required test specimens for the qualification.
- This applies to all weld configurations as allowed for by the relevant code of manufacture.
- Welding and testing of test pieces shall be witnessed by a Third Party Inspection Authority.
- Welding shall be carried out in accordance with the preliminary welding procedure specifications and the general welding conditions expected in production.
- Positions and angles of both slope and rotation shall be as per the relevant manufacturing code.
- Where tack welds form part of the final weld it shall be fussed into the final joint. The 0° position or reference point shall be clearly marked on each test piece.

7.4 Extent of Testing

- Testing includes non-destructive testing and destructive test as required by the relevant code of manufacture.
- Additional tests may be required, but this shall be specified by the welding Engineer as and when required.
- Location and tacking of test specimens shall be in accordance with the relevant code of manufacturing.
- Specimens shall only be removed after the successful completion of all required non-destructive examination (NDE) methods.
- Where post weld heat treatment (PWHT) is required, NDE shall be done after PWHT.
- Where no post heating or no PWHT is specified, NDE shall be delayed for all material susceptible to hydrogen induced cracking for at least 18 hrs.

7.4.1 Acceptance of level

A test piece deemed acceptable if all the acceptance criteria requirements are met as described by the relevant manufacturing code.

7.4.2 Re-Testing

- In the event that a test piece fails either the visual or the specified NDE methods, a further test piece may be welded and subjected to the same examination initially requested.
- if this sample fails, the procedure test failed.
- Where applicable, the destructive test failures shall be addressed in accordance with the re-test requirements for the relevant code of manufacture.

WBHO	Qualification of Welding Procedures and Welders	Doc No.	PRC 104
		Rev No.	01
		Rev Date	19/09/2017

10. ASSOCIATED DOCUMENTS

None.

WBHO	Qualification of Welding Procedures and Welders	Doc No.	PRC 104
		Rev No.	01
		Rev Date	19/09/2017

7.5 Range of Qualification

Respective ranges of qualifications shall meet all the requirements of the relevant code of manufacturing. This relates to, but is not limited to the following:

- Parent metals for similar and dissimilar weld joints.
- Thickness of members
- Pipe diameters
- Angle of branch connections
- Welding processes
- Welding positions and orientations
- The type of weld or joint including the product type
- Back gouging, single sided or both sided welds, single or multiple layers etc.
- Filler material designations and trade names
- Filler material sizes
- Type off current
- Heat input requirements
- Pre-heat temperatures
- Inter-pass temperatures
- Post-heating for hydrogen release or phase transformation
- Initial heat treatment condition
- Stop/starts for root and capping run.

7.6 6.6. Period of Validation

- A welding procedure or welder qualification shall be valid as specified by the relevant code of manufacture.
- Confirmation of validity shall be made by the Welding Engineer or a delegated person every six months.
- Prolongation of welder qualification shall be in accordance with the relevant code of manufacture.

8. RECORDS

Unless otherwise agreed with the client:

- Original copy of Data Dossier/Book shall be transmitted to the client.
- Copy of the Data Dossier/Book shall be filed (hard copy or digital copy).

9. PROCEDURE MAINTENANCE

Any change required to this Work Instruction should be done in accordance with Control of Documents.

WELD REPAIR PROCEDURE

REVISION MATRIX			
Rev No.	Date	Paragraph Changed	Description of change

TABLE OF CONTENTS

1. SCOPE

All welding repair failures shall adhere to this procedure.

2. PURPOSE

To describe the manner in which a weld should be repaired in order to demonstrate the conformance of the product to specified requirements.

3. DEFINITIONS

NDT	Non-destructive Testing is methods for the examination of welds for any discontinuities
RT	Radiographic Testing is one of the methods to ensure sound welds has been produced.
MT	Magnetic Particle Testing is a method to identify any surface defects
UT	Ultrasonic Testing is one of the methods to ensure sound welds has been produced.
BHN	Brignell Hardness Test is to test the hardness of the material

4. REFERENCE DOCUMENTS

4.1 Specifications

ISO 9001:2008	Quality Management System Requirements
ASME IX	Boiler and Pressure Vessel Code
EN-ISO15614	Welding and Brazing qualification
AWS D1:1	Structural Welding Code – Steel
ISO SANS 3834	Quality requirements for Fusion Welding of Metallic Materials

4.2 Documents

Weld Repair Register.

5. RESPONSIBILITIES

5.1 Contractor's Construction Manager:

The Construction Manager shall ensure that all personnel reporting to him are familiar and adhere to this procedure.

5.2 Contractor's Foreman/Supervisor:

This procedure shall be fully complied with and enforced by all shop and site foremen and supervisors.

5.3 Contractor's Quality Manager:

The Quality Manager shall carry out audits to ensure compliance to this procedure.

5.4 Responsible Person:

The Quality Control Inspector shall ensure that this procedure is implemented.

Refer to WBHO Responsibility Matrix (F14)

6. CONSTRUCTION SEQUENCE & METHODS

- Cracks, lack of fusion, and incomplete penetration is discontinuities detected any NDT and shall be completely removed by means of either chipping, grinding, gouging or any other approved method to remove the defect.
- After the defect has been removed, NDT (which ever method is applicable) shall be carried out in order to ensure that all discontinuities have been removed completely.
- Weld repairs shall be performed using the procedure used for the original weld.
- All repaired welds shall be examined by the same NDT method as were specified for the original weld.
- Two attempts to repair a defect area of a weld will be permitted, if the second repair attempt is unsuccessful, the complete weld shall be cut out and the weld shall follow the original process as if it was a new weld.

7. PROCEDURE MAINTENANCE

Any deviation from this procedure should be discussed with the Quality Manager/designated person. Such discussion should be documented, using the document change request form, (F01), detailing the reason for the deviation as well as clear instruction of the alternative process to follow. The Quality Manager or designated person is to approve the alternate process.

8. RECORDS

Unless otherwise agreed with the client:

- Original copy of Data Dossier/Book shall be transmitted to the client.
- Copy of the Data Dossier/Book shall be filed (hard copy or digital copy).
- Weld Repair Records/Non Conformance Report

INSPECTION & TESTING OF WELDING PROCEDURE

REVISION MATRIX			
Rev No.	Date	Paragraph Changed	Description of change

WBHO	Inspection & Testing of Welding Procedure	Doc No.	PRC 106
		Rev No.	00
		Rev Date	15/01/2016

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WBHO	Inspection & Testing of Welding Procedure	Doc No.	PRC 106
		Rev No.	00
		Rev Date	15/01/2016

1. SCOPE

All welding related activities carried out on the project.

2. PURPOSE

This procedure addresses the inspections carried out, by QC Inspectors during the welding process.

3. DEFINITIONS

Approval Authority	A person with the authority to approve a procedure
Author	A person or team assigned responsibility to draft or redraft a procedure
Controlled Copy	A copy that has controlled or limited distribution, and of which the text cannot be corrupted
The Company	WBHO Piping Division
Procedure	A document which describes the roles and responsibilities for a specific activity
Responsible Person	Responsible for all quality related matters including all welding activities.
WPS	Welding Procedure Specification
NDT	Non-destructive Testing

4. REFERENCE DOCUMENTS

4.1 Specifications

ISO 9001:2008	Quality Management System 0 Requirements
ISO 9004:2000	Quality Management Systems – Guidelines for Performance Improvement
ISO 14001:2004	Environmental management system - Requirements
OHSAS 18001:2007	Occupational Health and Safety Management System
ISO SANS 3834	Quality requirements for Fusion Welding of Metallic Materials
For any associated Procedures, Instructions or Forms refer to the text of this procedure.	

4.2 Documents

Visual Inspection Report.

Welding Machine & Equipment Checklist.

WBHO	Inspection & Testing of Welding Procedure	Doc No.	PRC 106
		Rev No.	00
		Rev Date	15/01/2016

5. RESPONSIBILITIES

5.1 Contractor's Construction Manager:

The Construction Manager shall ensure that all personnel reporting to him are familiar and adhere to this procedure.

5.2 Contractor's Foreman/Supervisor:

This procedure shall be fully complied with and enforced by all shop and site foremen and supervisors.

5.3 Contractor's Quality Manager:

The Quality Manager shall carry out audits to ensure compliance to this procedure.

5.4 Responsible Person:

The Quality Control Inspector shall ensure that this procedure is implemented.

Refer to WBHO Responsibility Matrix (F14)

6. CONSTRUCTION SEQUENCE & METHODS

- The responsible person must conduct inspections on the various stages of the welding processes throughout the project.
- The Visual Inspection Report (G28) is used to record which items have been inspected and any discrepancies found.

6.1 Before Welding is started, check the following:

- Suitability and validity of welder's qualifications certificates.
- Suitability of welding procedure specification, including
  - Pre & Post Weld Heat Treatment
- Parent Material type to be welded
- Correct welding consumable type (colour code)
- Joint preparation shape and dimensions to WPS Root opening and joint fit-up including tack welds.
- Alignment tolerance of tubes.
- Angular alignment of tubes.

6.2 Pipe alignment

- Weld joint cleanliness
- Any special WPS requirements
- Suitability of conditions, environment and access of welding

- Welding machine maintenance system to ensure that it is within its maintenance period by means of a Verification Register (L23).

6.3 The following shall be checked during the welding process

- Essential welding parameters including welding current, arc voltage and travel speed as per WPS
- Preheat and inter pass temperature
- Cleaning and shape of runs and layers of weld metal
- Back grinding
- Welding sequence
- Correct use and handling of welding consumables
- Control of distortion
- Checking of dimensions

6.4 The following shall be checked after the welding is complete, but before NDT is requested

- Visual inspection after welding to determine if there was any distortion
- Checking that cleaning and shape of weld overlay is acceptable as per Code
- Spatter and other debris removed from the weld area
- Weld identification remains clear
- Access for NDT is available

Any discrepancies are immediately reported to the appropriate Foreman/Supervisor with instructions to correct the problem. The Foreman/Supervisor will obtain the signature of the Responsible Welding Coordinator to confirm the report and action taken.

7. RECORDS

Unless otherwise agreed with the client:

- Original copy of Data Dossier/Book shall be transmitted to the client.
- Copy of the Data Dossier/Book shall be filed (hard copy or digital copy).

8. PROCEDURE MAINTENANCE

Any deviation from this procedure should be discussed with the Quality Manager/designated person. Such discussion should be documented, using the document change request from (F01), detailing the reason for the deviation as well as clear instruction of the alternative process to follow. The Quality Manager or designated person is to approve the alternate process.

9. ASSOCIATED DOCUMENTS

Refer to documents mentioned in this procedure.

CONTROL OF WELDING PROCEDURE

REVISION MATRIX			
Rev No.	Date	Paragraph Changed	Description of change

WBHO	Control of Welding Procedure	Doc No.	PRC 107
		Rev No.	00
		Rev Date	15/01/2016

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WBHO	Control of Welding Procedure	Doc No.	PRC 107
		Rev No.	00
		Rev Date	15/01/2016

1. SCOPE

This applies to all welding done on Projects.

2. PURPOSE

The purpose of this procedure is to define the controls of the welding processes on any WBHO Project.

3. DEFINITIONS

Approval Authority	A person with the authority to approve a procedure
Author	A person or team assigned responsibility to draft or redraft a procedure
Controlled Copy	A copy that has controlled or limited distribution, and of which the text cannot be corrupted
The Company	WBHO Piping Division
Procedure	A document which describes the roles and responsibilities for a specific activity
Responsible Person	Responsible for all quality related matters including all welding activities.
WRC	Weld Record Card
PQR	Weld Procedure Qualification Record
WPS	Welding Procedure Specification
ITP	Inspection and Test Plan
QCP	Quality Control Plan
NCR	Non Conformance Report
NDT	Non-destructive Testing
HAZ	Heat Affected Zone
PWHT	Post Weld Heat Treatment

4. REFERENCE DOCUMENTS

For any associated Procedures, Instructions or Forms refer to the text of this procedure

5. RESPONSIBILITIES

5.1 Contractor's Construction Manager:

The Construction Manager shall ensure that all personnel reporting to him are familiar and adhere to this procedure.

5.2 Contractor's Foreman/Supervisor:

This procedure shall be fully complied with and enforced by all shop and site foremen and supervisors.

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5.3 Contractor's Quality Manager:

The Quality Manager shall carry out audits to ensure compliance to this procedure.

5.4 Responsible Welding coordinator:

The welding coordinator shall ensure that this procedure is implemented.

Refer to WBHO Responsibility Matrix (F14)

6. PROCEDURE

6.1 Welding Instructions and Control

Control by means of WRC. In this system the following documentation is used to control welding on the shop floor:

6.1.1 Weld Procedure Specification (WPS)

The WPS indicates the type of consumable and welding requirements to shop floor personnel. It is necessary that this document be approved by the client prior to issue to the shop floor.

6.1.2 Weld Record Card (WRC) (L82)

- The WRC serves two purposes. The first purpose is that it may be used as a condensed version of a WPS provided that all information has been transferred from the WPS correctly and its second purpose is as a document to record actual weld parameters used for the joint which was welded.
- Operates as follows:
  - The responsible person records the welder's stamp number/on the WRC, together with the weld number
  - When requesting consumables from the store the store man shall check that the WRC has been completed and authorized by the responsible person and he shall record the batch number and quantity issued to the welder.
  - The responsible person shall indicate he has checked adequate pre-heat temperatures by signing the WRC. Pre-eat temperatures to be randomly checked.
  - All other parameters, e.g. heat input maximum interpass temperatures, etc. shall also be monitored and recorded.
  - The welder and welding foreman indicate that they have performed visual inspection by signing the appropriate section of the WRC.

6.2 Welding Requirements

6.2.1 Prior to commencing the welder shall be in possession of the following:

- Copies of the relevant approved WPS, WRC and ITP
- All the required documentation relating to the weld/s to be made, (i.e. drawings, isometrics, weld records cards, weld plans, weld maps or any other information necessary to complete the weld).
- Copies of Welder's qualification record or updated welders register indicating his scope of approval and endorsement of the various qualifications.

6.2.2 Prior to commencing with welding, the following shall be verified to ensure compliance to required Specification

- The Code/WPS to which the welder has been qualified
- The welding processes for which the welder has been qualified
- The diameter and thickness ranges for which the welder is qualified per process
- The type of filler materials the welder is qualified to use
- The type of materials to be welded
- The positions in which the welder is qualified to weld for each process, e.g. F1/G1 (Flat, Horizontal), F6/G6 (45 degrees Fixed Axis), etc.
- Any limitation applied to the qualification

6.2.3 All the above must be compatible with the WPS before the welder may commence. In addition to this the quality department shall be responsible for maintaining an updated welder qualification register showing the qualifications of all welders

- Welding consumables shall be requested from the welding store by means of a Welding Consumable Request (L85)
- Welding may commence as per the requirements of the WPC/WRC.

6.3 Welding Equipment

- All welding equipment that has been tested and found to be in order shall be put on a Verification Register (L23).
- Welding equipment, e.g. Argon torches etc. will be selected to provide optimum access and control relative to the weld preparation configurations and facilitate stop/start control.
- All welding machines shall be checked by the welders and the Responsible Welding Coordinator on a random basis, to ensure that they are capable of producing the correct amperage/voltage and travel speed (L88)
- This is done by means of a calibrated tong tester or damp meter to ensure that the welding operator is using the welding machine within the parameters as stated in the approved WPS.
- The responsible person shall verify the testing of welding machines and endorse the WRC.
- Any machine found to be defective should be immediately removed from the service for rectification and the Foreman/Supervisor shall introduce enhanced NDT on the welds of the last shift associated with the specified welding machine.

- Welding equipment such as hoses, electrical cables, electrode holders, torches and earth clamps shall be maintained in good working order and shall be inspected daily for damage to insulation, leaks or local hot spots by the welder.
- Electrode quivers/hot boxes shall be kept switched on when issued to the shop floor, to ensure that electrodes are stored at the correct temperature of 80°C – 100°C minimum
- The Quality Department shall annually verify that all electrode quivers/hot boxes are in good working order and records of such verification shall be compiled and maintained.
- Verification of shielding gas flow: - shielding gas shall for flow rate at the torch end of the hose. Flow rate shall conform to the parameters stated on the WPS.

6.4 Material Preparation

All materials shall be prepared in the method indicated by the appropriate drawing and weld map, PCS, WPS or WRC. All weld preparations shall be visually monitored for:

- Dimensional conformity, e.g. correct angle and root face.
- Soundness, e.g. weld edge preparations shall be visually monitored for cracking, laminations and cutting defects.

6.5 Weld Fit Up

Once components have been fitted together, weld preparations shall be checked for conformity to planning documentation, drawings, and weld map, WRC or WPS as applicable. The following shall then be checked:

- Dimensional conformity – angles of weld prep and root gap.
- Quality of the tack weld.

Any defects shall be recorded as per the non-conformance report (F04)

ARC Strikes may be required in some instances to be NDT tested. This shall be indicated on the ITP/QCP.

6.6 Pre-Heat

Prior to pre-heating the Foreman/Supervisor shall consult the project requirements to determine if any restrictions apply. Unless otherwise precluded, preheating shall be performed in accordance with the approved WPS/WRC by one of the following methods

6.6.1 Hand held torch

In the case of a hand held torch, care shall be taken not to heat local hot spots.

6.6.2 Burner

Electrical resistant heaters

- Preheat temperature shall be checked frequently during welding to ensure that the minimum temperature does not fall below the minimum specified on the WPS/WRC.
- Preheat to be randomly checked before welding commences by Responsible Welding Coordinator. Except when crucial welding is to be executed due to Specifications and Client requirements
- All other parameters, e.g. heat input, maximum interpass temperature, etc. shall also be monitored and recorded
- Preheat shall not be less that that stated on the WPS and preheating shall be applied when feasible from the opposite side of the weld to that being welded.
- When this is not possible, preheat shall be applied from the side being welded and shall only be measured one minute after the preheat flame is removed from the area.
- Preheat shall extend three times the plate thickness in all directions from the area being tack welded
- Preheat may be measured by temperature sensitive crayons, contact pyrometers or infrared thermometers.
- The Welding Foreman shall ensure that preheat is performed in accordance with defined parameters.

6.7 Tack Welding

Tack welds may be divided into two separate categories:

- Those which will form part of the completed component
- Those that will be removed during the welding process (note removal of tack welds would also indicate removal of the associated heat affected zone).
  - Where the weld's Heat Affected Zone (HAZ) will not be removed, the track weld must be considered as one which will form part of the completed component.
  - Tack Welders shall have a full qualification test
  - The surface of the part to be tack welded or welded shall be clean, free from rust, oil, paint or any other contaminant.
  - Tack welding shall be deposited in accordance with the parameters of the WPS/WRC.
  - No tack welding is permitted on any pressure part until all the following requirements of the WPS has been met:
    - Type of material
    - Preheat temperature
    - Type of consumables to be used
    - Recommended welding current and voltage
  - All supervisors must receive the above information beforehand (approved WPS) and make this available to their subordinates.

  - Vertical down welding is not permitted unless agreed by the Responsible Welding coordinator (in writing)
  - Arc strikes outside the weld preparations shall be avoided. If arch strikes occur, these shall be removed by grinding and NDT to be performed.
  - Size of tack welds:
    - Tack welds shall be a minimum of 10mm long unless otherwise specified by specific contract requirements
  - Once completed all tack weld shall be visually examined for slag inclusions, lack of fusion, cracking and porosity.
  - Any tack weld found to contain any of the above defects should be grind out and repaired before and other work is performed.

6.8 Marking and Examination of Completed Welds

- All completed welds shall be identified by markings.
- Longitudinal shall be identified with a welder's stamp number.
- Markings may be either hard stamping, engraving or indelible ink markings
- All completed welds shall be visually inspected as per the requirements of the ITP/QCP.
- Any defects found shall be reported to the Supervisor, who shall follow the necessary corrective actions and attach WPS and special requirements where applicable.
- 100% Visual inspection must be obtained from the production department before an NDT request is made to the Quality Inspector.
- The Supervisor and responsible person shall sign the WRC as proof that visual inspection was done.

Note: No repairs shall be permitted after any PWHT unless approved by the Engineer. In this instance PWHT will be performed again after the repair has passed the relevant NDT requirements.

- In terms of NDT and reporting all repairs performed shall be identified by the original weld number followed by the suffix "R1" for repair1 and subsequent welds repaired more than twice shall be classified as non-conforming and a non-conformance report generated for disposition by the responsible welding coordinator.
- Any defect identified by a NDT Test shall follow the Welding Repair Procedure (PRC105)

Quality Department shall keep a record per contract number of the weld repair rate. This shall also be traceable per welder.

6.9 PWHT

When required as per Specification.

6.10 Housekeeping

- The welder will be responsible for keeping his workstation in a clean and safe condition.
- All unused electrodes will be kept in the heating quiver or hotbox and returned to the electrode holding store for evaluation, re-baking & reissue or disposal according to Procedure control, Baking and Issue of Welding Consumables.
- All used electrode stubs shall be deposited in a scrap bin/container.
- Filler wire spools (FAW,MAW) will be clearly marked with type or specification.
- Gas bottles are to be closed at the end of each shift.
- Gas lines will be purged for a minimum of thirty seconds prior to the commencement of welding at the start of each shift.

7. RECORDS

Unless otherwise agreed with the client:

- Original copy of Data Dossier/Book shall be transmitted to the client.
- Copy of the Data Dossier/Book shall be filed (hard copy or digital copy).

8. PROCEDURE MAINTENANCE

Any deviation from this procedure should be discussed with the Quality Manager/designated person. Such discussion should be documented, using the document change request from (F01), detailing the reason for the deviation as well as clear instruction of the alternative process to follow. The Quality Manager or designated person is to approve the alternate process.

9. ASSOCIATED DOCUMENTS

Refer to documents mentioned in this procedure.