

CSIR: BUILDING 17A
 COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH
 TYPE OF BULK SERVICES (LEARNING FACTORY TO SUPPORT MANUFACTURING - BUILDING 17A SECOND FLOOR)
 BILL OF QUANTITIES - LEARNING FACTORY TO SUPPORT MANUFACTURING

DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
LEARNING FACTORY - BUILDING 17A				
SECTION 1.				
PRELIMINARY AND GENERAL				
FIXED CHARGE ITEMS				
<u>Contractual requirements.</u>				
Insurances	SUM	1		
Programming	SUM	1		
Performance Security	SUM	1		
Retention Guarantee	SUM	1		
<u>Establishment of Facilities on the Site</u>				
<u>Facilities for Engineer</u>				
Equipment for the Engineer's Staff	SUM	1		
<u>Facilities for Contractor</u>	H4	1		
Offices and Storage Sheds	SUM	1		
Workshops	SUM	1		
Site Establishment	SUM	1		
Living Accomodation - The Contractor to supply a breakdown of the different categories namley: Supervision, Skilled Labor, Semi Skilled Labour and Unskilled Labour	SUM	1		
Laboratory Facilities	SUM	1		
Ablution and Latrine Facilities	SUM	1		
Tools and Equipment	SUM	1		
Water Supplies	SUM	1		
Electric Power	SUM	1		
Communication	SUM	1		
Air Supplies	SUM	1		
Dealing with Water	SUM	1		
Access	SUM	1		
<u>Facilities Requiring Special Attention</u>				
Security	SUM	1		
Safety	SUM	1		
Samples and certification of materials	SUM	1		
Testing Authority	SUM	1		
Other Contractors	SUM	1		
Quality Assurance	SUM	1		
Orders and Indents	SUM	1		
Site Meetings	SUM	1		
Plant for the Works	SUM	1		
Transport on the site	SUM	1		
Transport of the Workforce to and from the site	SUM	1		

Supervision for the duration of the construction	SUM	1		
Company and head office overheads costs for the duration of the contract works	SUM	1		
Other fixed charge obligation - Contractor to submit details	SUM	1		
Remove site establishment on completion	SUM	1		
VALUE RELATED ITEMS				
<u>Contractual requirements</u>				
Insurances	SUM	1		
Programming	SUM	1		
Performance Security	SUM	1		
Retention Guarantee	SUM	1		
<u>Establishment of Facilities on the Site</u>				
<u>Facilities for Engineer</u>				
Equipment for the Engineer's Staff	SUM	1		
<u>Facilities for Contractor</u>				
Offices and Storage Sheds	SUM	1		
Workshops	SUM	1		
Site Establishment	SUM	1		
Living Accomodation - The Contractor to supply a breakdown of the different categories namley: Supervision, Skilled Labor, Semi Skilled Labour and Unskilled Labour	SUM	1		
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Tools and Equipment	SUM	1		
Water Supplies	SUM	1		
Electric Power	SUM	1		
Communication	SUM	1		
Air Supplies	SUM	1		
Dealing with Water	SUM	1		
Access	SUM	1		
<u>Facilities Requiring Special Attention</u>				
Security	SUM	1		
Safety	SUM	1		
Samples and certification of materials	SUM	1		
Testing Authority	SUM	1		
Other Contractors	SUM	1		
Quality Assurance	SUM	1		
Orders and Indents	SUM	1		
Site Meetings	SUM	1		
Plant for the Works	SUM	1		
Transport on the site	SUM	1		
Transport of the Workforce to and from the site	SUM	1		
Supervision for the duration of the construction	SUM	1		
Company and head office overheads costs for the duration of the contract works	SUM	1		

Other value related obligations - Contractor to submit details	SUM	1		
Remove site establishment on completion	SUM	1		
TIME RELATED ITEMS				
<u>Contractual requirements</u>				
Insurances	SUM	1		
Programming	SUM	1		
Performance Security	SUM	1		
Retention Guarantee	SUM	1		
<u>Establishment of Facilities on the Site</u>				
<u>Facilities for Engineer</u>				
Equipment for the Engineer's Staff	SUM	1		
<u>Facilities for Contractor</u>				
Offices and Storage Sheds	SUM	1		
Workshops	SUM	1		
Site Establishment	SUM	1		
Living Accomodation - The Contractor to supply a breakdown of the different categories namley: Supervision, Skilled Labor, Semi Skilled Labour and Unskilled Labour	SUM	1		
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Dealing with Water	SUM	1		
Access	SUM	1		
<u>Facilities Requiring Special Attention</u>				
Security	SUM	1		
Safety	SUM	1		
Samples and certification of materials	SUM	1		
Testing Authority	SUM	1		
Other Contractors	SUM	1		
Quality Assurance	SUM	1		
Orders and Indents	SUM	1		
Site Meetings	SUM	1		
Plant for the Works	SUM	1		
Transport on the site	SUM	1		
Transport of the Workforce to and from the site	SUM	1		
Supervision for the duration of the construction	SUM	1		
Company and head office overheads costs for the duration of the contract works	SUM	1		
Other time related obligation - Contractor to submit details	SUM	1		
Remove site establishment on completion	SUM	1		

TOTAL SECTION 1- BILL NO. 01- PRELIMINARIES AND GENERAL			
SECTION 2.			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY			
MEASURED WORKS			
BILL NO. 01			
DEMOLITIONS AND PREPARATORY WORK			
REMOVAL OF FLOOR COVERING			
Carefully take out and remove the existing vinyl flooring send to the salvage yard, make good the floor to receive new floor covering	m2	398	
REMOVAL OF THE EXISTING STAIRCASE			
Carefully take out and remove the existing staircase and send to the salvage yard, make good the wall to receive new staircase as per the engineers spec	Item	1	
REMOVAL OF EXISTING ROLLERSHUTTER DOOR			
Take down and remove the existing roller shutter door, 3200x3370mm and send it to the salvage yard	No	1	
REMOVAL OF THE EXISTING CARPENTRY FITTINGS			
Carefully take out and remove existing double doors, 3200 x 3370mm and send to the salvage.	No	1	
BREAKING DOWN AND REMOVAL OF BRICK WALL			
Breaking down of the 220mm parapet wall, keep as much and many of existing facebricks for use. Contractor to rebuild the parapet wall with extra reinforcement to allow for weight of concrete coping and flood light. Existing coping to be reused where possible. (Bricking up measured elsewhere).	m2	9	
REMOVAL OF STEEL BALUSTRADING			
Dismantle and remove the existing bakustrading, 1000mm high and send to the salvage yard	m	17	
REMOVAL OF SANITARY FITTINGS			
Cutting off and removal of the plumbing water pipes and send to the salvage yard (surface mounted)	Item	1	
Remove existing basin, cut off plumbing and remove pipe work (surface mounted)	No	1	
EXISTING CEILING TREATMENT			
Clean, make good and paint the existing "COFFER"slab ceiling complete, as per Architect's recommendation. (Paint measured elsewhere)	m2	398	
WINDOW STRIPPING			
Strip existing windows and repaint white while existing. (Paint measure elsewhere)	m2	144	
DEEP CLEANING			
Allow for deep cleaning in and around the structure	Item	1	
TOTAL SECTION 2 - BILL NO. 01- ALTERATIONS			
SECTION 2.			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY			
MEASURED WORKS			
BILL NO. 02			
EARTHWORKS			
NOTE: Tenderers are advised to study the Model Preambles for Trades 2008 published by the Association of South African Quantity Surveyors			
SUPPLEMENTARY PREAMBLES			
Nature of ground			
Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth"			
Subterranean water			

No subterranean water is expected				
Excavation for working space in rock				
Notwithstanding clause 11 page 8 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be				
Carting away of excavated material				
Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site				
Filling				
Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material				
EXCAVATION, FILLING, ETC EXCAVATIONS, ETC				
Excavation in earth not exceeding 2m deep				
Bulk excavations	m3	3		
Extra over trench and hole excavations in earth for excavation in				
Soft rock	m3	1		
Hard rock	m3	1		
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 contractor	m3	3		
Risk of collapse of excavations				
Sides 5 of trench and hole excavations NE 1,5m dee	m2	4		
Keeping excavations free of water				
Keeping excavations free of all water other than subterranean water	Item	1		
Filling of natural gravel material C4 stabilized material supplied by the contractor, compacted to 95% Mod AASHTO density				
Under floors, steps, pavings, etc	m3	1		
Filling of natural gravel material G5 supplied by the contractor, compacted to 95% Mod AASHTO density				
Under floors, steps, pavings, etc	m3	1		
Filling of natural gravel earthfill material supplied by the contractor, compacted to 95% Mod AASHTO density				
Under floors, steps, pavings, etc	m3	1		
SOIL POISONING				
Soil insecticide in accordance with SANS 5859 Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming				
To bottom of excavated pit	m2	10		
To sides	m2	4		
TESTS				
Prescribed tests to determine degree of compaction or other properties of ground or filling				

Modified AASHTO Density' test	No	1		
TOTAL SECTION 2- BILL NO. 02 EARTHWORKS				
SECTION 2.				
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY				
MEASURED WORKS				
BILL NO. 03				
CONCRETE, FORMWORK AND REINFORCEMENT				
NOTE: The use of trade names simply serves to indicate a standard acceptable to the Principal Agent. Any other brand may be used with prior written approval of the Principal Agent				
NOTE: Tenderers are advised to study the Model Preambles for Trades 2008 published by the Association of South African Quantity Surveyors				
SUPPLEMENTARY PREAMBLES				
Cost of tests				
The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the architect. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the architect. (Test cubes are measured separately)				
Formwork				
Description of formwork shall be deemed to include use and waste only (except where described as "left in" or permanent), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before reuse				
The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself. Formworks to soffits of solid etc shall be deemed to be slabs not exceeding 250mm thick unless otherwise described.				
Formworks to soffits of solid etc shall be deemed to be slabs not exceeding 250mm thick unless otherwise described				
Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"				
REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
25MPa/19mm concrete				
Surface beds cast in panels on waterproofing	m3	4		
TEST BLOCKS				
Making and testing 150 x 150 x 150mm concrete strength test cube	No	1		
CONCRETE SUNDRIES				
Finishing top surfaces of concrete smooth with a wood float				
Surface beds, slabs, etc	m2	10		
ROUGH FORMWORK (DEGREE OF ACCURACY III)				
(CPAP WORK GROUP NO. 111)				
Rough formwork to sides				

Sides of slabs	m2	2		
REINFORCEMENT				
High tensile steel reinforcement to structural concrete work (Y)				
8mm Diameter bars	T	1		
8mm Diameter bars	T	1		
TOTAL SECTION 2- BILL NO. 03 CONCRETE, FORMWORK AND REINFORCEMENT				
SECTION NO.2	H1			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO.4	H1			
MASONRY	H3			
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SUPPLEMENTARY PREAMBLES				
BRICKWORK				
Sizes in descriptions				
Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
Hollow walls				
Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole				
User note				
The following preamble generally applies for works in hot and humid coastal areas				
Bagged and sealed walls				
Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating				
Face bricks				
Bricks shall be ordered timeously to obtain uniformity in size and colour				
Pointing				
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc				
BRICKWORK SUPERSTRUCTURE				
Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
Half brickwall	m2	50		
One brickwall	m2	10		
2,5mm Brickwork reinforcement				
75mm Wide reinforcement built in horizontally	m	629		
150mm Wide reinforcement built in horizontally	m	31		
Prestressed fabricated concrete lintels including necessary temporary supports				
110 x 75mm Lintels in lengths not exceeding 3m	m	2		

TOTAL SECTION 2 - BILL NO. 04- MASONRY				
SECTION NO.2	H1			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO.5	H1			
WATERPROOFING	H3			
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SUPPLEMENTARY PREAMBLES				
Waterproofing				
Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
DPC In walls	m2	2		
TOTAL -SECTION 2 - BILL NO.5- WATERPROOFING				
SECTION NO.2	H1			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO.6	H1			
CARPENTRY AND JOINERY	H3			
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SUPPLEMENTARY PREAMBLES				
Fixing				
Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned to brickwork or concrete				
Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere				
Joinery				
Descriptions of frames shall be deemed to include frames, transomes, rails, etc				
Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts				
Decorative thermosetting plastic laminate covering				
Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish				
DOORS ETC				
Medium duty semi-solid 40mm thick masonite clad timber door, with surfsce preoared for painting, size 100mm(w) x 2710mm (h). Paint colour to later spec (Door 03)	No	1		
TOTAL -SECTION 2 - BILL NO.6 - CARPENTRY AND JOINERY				
SECTION NO.2	H1			

BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO.7	H1			
IRONMONGERY	H3			
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SUPPLEMENTARY PREAMBLES				
Proprietary items				
Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items				
Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered				
On request returnable samples are to be provided to the principal agent for consideration				
LOCKS				
Solid				
76mm Four lever upright mortice lock (Code 313/A40)	No	3		
SUNDRIES				
Solid				
38mm Diameter rubber door stop plugged	No	8		
TOTAL -SECTION 2 - BILL NO.7 - IRONMONGERY				
SECTION NO.2	H1			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO.8	H1			
METALWORK	H3			
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SUPPLEMENTARY PREAMBLES				
Descriptions				
Descriptions of bolts shall be deemed to include nuts and washers				
Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
Items described as 'holed for bolt(s)' shall be deemed to exclude the bolts unless otherwise described				
Items described as 'plugged shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres				
Aluminium doors, windows, etc				
Doors and windows shall comply with AAAMSA design criteria				
Glazing shall comply with SAGGA regulations. Glass shall be safety glass as shown on the window schedules/drawings appended to these bills of quantities. Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the				

schedules/drawings				
Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed				
For purpose made windows and doors, refer to drawings annexed to these bills of quantities				
The following certificates shall be provided prior to commencement of site work,				
1. A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product				
2. A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively				
3. A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process.				
4. A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked.				
5. A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degradation for a period of not less than five years				
NOTE: All tenderers are referred to architect's drawings and details based on these bills of quantities for tender purposes.				
PRESSED STEEL DOOR FRAMES				
1,2mm Rebated frames suitable for half walls				
Single rebated 1,2mm pressed steel sheet door frame, primed and installed to manufactures specification & detail; hinged on one pair of hinges. Suitable for 1000mm x 2710mm door	No	1		
FOLDING DOOR				
Sliding Door, Natural Anodised aluminium sliding door as per manufacturer's shop drawings and specifications. acoustic glazing to be used, as per manufacturer's shop drawings; glazed in accordance with SANS 10400 part N schedule 1 and SANS 10137:2011, fitted with friction stays, glazing beads with vinyl and fin pile seals plugged and screwed to brickwork	No	1		
ALUMINIUM WINDOWS, DOORS, ETC				
Powder coated top hung window units complete with subframes, ironmongery, 6.38mm clear laminated safety glass, sealing, etc and fixing to brickwork or concrete including factory fitted burglar bars, complete as per architect's drawings				
DOORS				
TYPE D-1				
P&H Rocklite hinged fire double door. Door size: 3200mm (w) x 3315mm (h); Class B Fire door. Rocklite 'S' fire door supplied with a purpose-made 3mm steel frame with 20mm rebate including 2 bullet hinges per leaf. Tubular fram to be bolted onto existing wall opening. Glazing to be 6mm Schott PYRAN S Borofloat Toughened Glass for a 120 minute fire rating, Intumex LPSK Itumescent Strips included between the glass & steel glazing beads. Glass fire door to be strict compliance with SANS 1253:2004 for a 120mm fire rating; with Intumemescent strips, specified ironmongery and hinges. If Class B fire door has a bugger viewing panel than the 100 x 300mm or 20mm Diameter allowed in SANS 1253: 2004 the fire rating of the complete fire door unit will be downgraded to the fire rating of the glazing installed to or on top of (fanlight) the fire door. Or similar approved.	No	1		
TYPE D-2				
Wispeco Crealco alumium framed glass double door to manufactur's specification and detail.	No	2		
SHOPFRONT				
TYPE SF -1				
Crealco clip 44 aluminium framed shop front for internal use; size: 1790 x 3315mm (h). To be installed in gypsum drywall jambs as per manufactures shop drawings. Natural anodised	No	4		
TYPE SF - 2				
Aluglass Bautech GF Serene 45 re-mountable and re-locatable acoustic partitioning, as per manufacture's shop drawings and specification. Aluminium framed internal shopfront, acoustic glazing to be used. size:11428mm x 3315mm,Tracks to be Tracks to be confirmed on site with the client	No	1		
TYPE SF - 3				

Aluglass Bautech GF Serene 45 re-mountable and re-locatable acoustic partitioning, as per manufacture's shop drawings and specification. Aluminium framed internal shopfront, acoustic glazing to be used. size: 7408mm x 3315mm, confirmed on site with the client	No	1		
TYPE SF - 4				
Aluglass Bautech GF Serene 45 re-mountable and re-locatable acoustic partitioning, as per manufacture's shop drawings and specification. Aluminium framed internal shopfront, acoustic glazing to be used. Size: 6980mm x 3315mm, Tracks to be confirmed on site with the client	No	1		
TYPE SF - 5				
Aluglass Bautech GF Serene 45 re-mountable and re-locatable acoustic partitioning, as per manufacture's shop drawings and specification. Aluminium framed internal shopfront, acoustic glazing to be used. Size: 5612mm x 3315mm, Tracks to be confirmed on site with the client	No	1		
BALUSTRADING				
1000mm high steel balustrade to comply with SANS 10400 Part D	M	17		
STEEL STAIRCASE				
Supply and install a steel staircase as per the drawing and the engineers specification	Item	1		
DRY WALL				
Dry Wall, Gyproc Fire Resistant Wall partitioning system with overall thickness of 132mm comprising internal framing formed of 102mm galvanised steel studs fixed at 600mm centres to galvanised steel top and bottom track with 102mm thick insulation in cavity of partition wall.	m2	52		
TOTAL SECTION 2 - BILL NO.08 - METALWORK				
SECTION NO.2	H1			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO.9	H1			
PLASTERING	H3			
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NOTE: Tenderers are advised to study the Model Preambles for Trades 2008 published by the Association of South African Quantity Surveyors				
SUPPLEMENTARY PREAMBLES				
GRANOLITHIC				
Method				
The method to be used shall be either the monolithic method or the bonded method				
Preparation				
For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic				
Mix				
Granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic				
Panels				
Granolithic shall be laid in panels not exceeding 14m ² for				

monolithic finishes, not exceeding 9,5m ² for bonded finishes and not exceeding 6m ² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width				
Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints				
Laying				
Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels				
Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be thoroughly compacted and lightly wood floated to the required levels				
After wood floating, the monolithic and bonded granolithic shall remain undisturbed until bleeding has ceased and the surface has stiffened. Any remaining bleed water and laitance shall then be removed and the surface steel trowelled or power floated				
Curing, seasoning and protection				
Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying				
Colour				
Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour				
SCREEDS				
Screeds steel trowelled, on concrete				
30mm Thick on floors and landings	m2	33		
INTERNAL PLASTER				
Cement plaster steel trowelled, on brickwork				
On walls	m2	101		
RHINOLITE				
Apply rhinolite on existing coffer ceilings and prepare ceiling to receive paint	m2	398		
TOTAL SECTION 2 - BILL NO.09 - PLASTERING				
SECTION NO.2	H1			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO. 10	H1			
TILING	H3			
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SUPPLEMENTARY PREAMBLES				
Fixing				
Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat				
Ceramic, porcelain, marble and granite tiles are to be				

fixed and grouted with suitable adhesives and grouts as recommended by the manufacturer of the tiles				
Floor tiles				
Anti-static floor tiles/sheet, floor tiles to form build-joint with wall in a place of skirting, as per specification document				
On floor	m2	398		
Grano screed				
On floor	m2	33		
TOTAL SECTION 2 - BILL NO.10 - TILING				
SECTION NO.2	H1			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO. 11	H1			
PLUMBING AND DRAINAGE	H3			
NOTE: The use of trade names simply serves to indicate a standard acceptable to the Principal Agent. Any other brand may be used with prior written approval of the Principal Agent				
NOTE: Tenderers are advised to study the Model Preambles for Trades 2008 published by the Association of South African Quantity Surveyors				
SUPPLEMENTARY PREAMBLES				
Copper pipes:				
Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (halfhard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be Cobra Watertech type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground				
Lead pipes and traps				
All soldered joints shall be wiped and brass unions shall be used for jointing lead to steel				
Reducing fittings				
Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained				
Wire gratings				
Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings				
Septic tanks				
Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings				
Exposed concrete surfaces				
Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster				
Excavations				
No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling				
'Soft rock' and 'hard rock' shall be as defined in				

'Earthworks'				
Laying, backfilling, bedding, etc. of pipes				
Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions				
Where no manufacturers' instructions exist pipes shall be laid in accordance with				
Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following:				
SABS/SANS 1200 L : Medium-pressure pipelines				
LD : Sewers				
LE : Stormwater drainage				
Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS/SANS 1200				
DB : Earthworks (Pipe trenches)				
Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS/SANS 1200				
LB : Bedding (Pipes).				
Unless otherwise described bedding of rigid pipes shall be class B bedding				
Flush pans				
Flush pans shall have straight or side outlets and 'P' or 'S' traps as necessary				
Stainless steel basins, sinks, wash troughs, urinals, etc.				
Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable				
SANITARY FITTINGS				
Washand Basin				
RossCo Large Rectanlge basin	No	1		
Allow for water plumbing	Item	1		
TOTAL SECTION 2 - BILL NO. 11 PLUMBING AND DRAINAGE				
SECTION NO.2	H1			
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO. 12	H1			
GLAZING	H3			
NOTE: The use of trade names simply serves to indicate a standard acceptable to the Principal Agent. Any other brand may be used with prior written approval of the Principal Agent				
NOTE: Tenderers are advised to study the Model Preambles for Trades 2008 published by the Association of South African Quantity Surveyors				
SUPPLEMENTARY PREAMBLES				
Float glass				
The term 'float glass' is used for monolithic annealed glass				
Laminated glass				
Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
GLAZING TO STEEL WITH PUTTY				
6mm Clear float safety glass Panes 1 exceeding 0,5m ² and not exceeding 2m ²	m2	145		
TOTAL SECTION 2 - BILL NO. 11 GLAZING				
SECTION NO. 2				
BUILDING WORKS - RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY				
BILL NO. 12				

PAINTWORK				
NOTE: All tenderers are advised to study the Model Preambles for Trades before pricing this bill				
PREPARATORY WORK TO EXISTING WORK				
Previously painted plastered surfaces				
Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth				
Previously painted metal surfaces				
Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal				
Previously painted wood surfaces				
Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and crevices shall be primed, filled with suitable filler and finished smooth				
PAINTWORK ETC TO NEW WORK				
ON SMOOTH PLASTER, RHINOLITED WALLS				
Prepare, apply one coat "Plascon Plaster Primer UC65" and apply two coats "Plascon Double Velvet VEL" non-drip polyurethane enamel paint				
On wall	m2	312		
On Soffit of slab	m2	398		
ON WOOD SURFACES				
Three coats 'Woodoc 35' exteriors sealer				
On doors	m2	17		
ON METAL SURFACES				
One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
On door frames	m2	6		
On windows with burglar bars	m2	144		
TOTAL SECTION 2 - BILL NO. 12 PAINTWORK				
TOTAL BUILDING WORKS				
SECTION NO.3	H1			
RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY (REFURBISHMENTS)	H1			
BILL NO. 1	H1			
ELECTRICAL INSTALLATION (PRELIMINARIES AND GENERAL)	H3			
Preliminaries and General				
Compling with insurance's, statutory contributions, etc. The main contractor shall allow and provide all necessary site establishment.	Item	1		
TOTAL SECTION 3 - BILL NO. 1 PRELIMINARIES AND GENERAL				
SECTION NO.4	H1			
RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY	H1			
BILL NO. 1	H1			
ELECTRICAL INSTALLATION	H3			
SUPPLY AND INSTALL DISTRIBUTION BOARD				
Supply, Install, test and commision existing distribution board - Flush mounted distribution board cupboards c/w all switchgear and breakers indicated on the drawings				
DB-A	No	1		

DB-UPS	No	1		
LOW VOLTAGE DISTRIBUTION				
Supply, deliver, install and terminate Cu PVC SWA PVC 600/1000V Cable, in trenches, sleeves or on cable trays				
50mm ² x 4 core (From main DB to BD - A)				
Supply and delivery	Meter	150		
Installation	Meter	150		
Termination, c/w glands, shrouds, lugs and connection	No	9		
LIGHTING INSTALLATION				
WIREWAYS				
Supply, delivery and installation of PVC conduits, surface mounted in ceiling voids and fixed to walls or cast-in or built into walls, including all fixing materials, bends, terminations, draw boxes, etc.				
20mm diameter				
Supply and delivery	Meter	450		
Installation	Meter	450		
Supply, delivery and installation of Conduit outlets boxes c/w locknuts and bushes built into brick or cast into concrete or surface mounted				
65mm round box, c/w cover				
Supply and delivery	No	64		
Installation	No	64		
WIRING AND TERMINALS				
Supply, delivery and installation of Cu Conductors:				
1,5mm ² PVC insulated conductor				
Supply and delivery	Meter	1980		
Installation	Meter	1980		
1,5mm ² bare copper earth wire				
Supply and delivery	Meter	900		
Installation	Meter	900		
2,5mm ² PVC insulated conductor				
Supply and delivery	Meter	1600		
Installation	Meter	1600		
LIGHT FITTINGS				
Supply, deliver, install, connect, test and commissioning the following light fittings				
TYPE F30 -Lascon, 230V Batten-HO LED 1120mm surface mounted light fitting with rolled mild steel body, a white epoxy powder coated finish and semi-transparent PMMA diffuser installed with 55W LED lamp rated at 20 ingress protection OR SIMILAR APPROVED.				
	No	60		
Supply, deliver, install, connect, test and commissioning of Sensors				
CMR 10				
Adaptors 5 Amp 6 Way	No	12		
Adaptors 5 Amp 4 Way	No	8		
	No	6		
ACCESSORIES				
Supply, deliver and install accessories to boxes				
16A, one lever one way switch	No	11		
SMALL POWER AND LIGHTING WORKS				
WIREWAYS				
Supply, delivery and installation of PVC conduits, surface mounted in ceiling voids and fixed to walls or cast-in or built into walls, including all fixing materials, bends, terminations, draw boxes, etc.				
20mm diameter				
Supply and delivery	Meter	99		
Installation	Meter	99		
Supply and install conduit droppers chased or built into wall, consisting of 3 x 25mm dia & 2 x 20mm dia from wire basket & trunking in ceiling void to power skirting c/w 1.6mm draw wires				
	No	17		
Supply, delivery and installation of Conduit outlets boxes c/w locknuts and bushes built into brick or cast into concrete or surface mounted, c/w applicable cover				
100 x 100 x 50 mm				
Supply and delivery	No	8		
Installation	No	8		
Supply, deliver and installation of the 2 compartment, two cover Midland power skirting complete with all accessories including internal/external bends, end caps etc. as per first and ground floor drawings				
	Meter	88		
Supply, delivery and installation of socket outlets				
16 A, 3-pin standard white SSO + 16 A, 3-pin Euro Socket (SANS 164-2)				
Mounted in floorbox	No	9		

Surface mounted	No			
Power skirting mounted	No	39		
16 A, 3-pin double white SSO + 16 A, 3-pin Euro Scket (SANS 164-2)				
Flush Mounted	No	2		
Surface mounted	No			
16 A, 3-pin dedicated red SSO				
Flush Mounted	No			
Power skirting mounted, 45 degree (including plug top)	No	39		
32A 3 phase socket outlet				
Surface mounted	No	3		
Supply, deliver and installation of the power poles				
Supply and delivery	No	8		
Installation	No	8		
Supply and installation of power skirting accessories				
Blank cover plate suitable for RJ 11 telephone outlet	No	10		
Blank cover plate suitable for RJ 49 data outlet	No	24		
WIRING AND TERMINALS				
Supply, Deliver and installation of Cu Conductors:				
2.5mm ² PVC insulated conductor				
Supply and delivery	Meter	990		
Installation	Meter	990		
4mm ² PVC insulated conductor				
Supply and delivery	Meter	440		
Installation	Meter	440		
4mm ² Surfex (For HVAC)				
Supply and delivery	Meter	330		
Installation	Meter	330		
6mm ² 4 core Surfex (For HVAC)				
Supply and delivery	Meter	110		
Installation	Meter	110		
2.5mm ² bare copper earth wire				
Supply and delivery	Meter	220		
Installation	Meter	220		
STANDBY POWER				
Supply, deliver and install 10 Kva UPS	No	1		
Supply, deliver and installation	No	1		
GENERAL				
STRIPPING OF EXISTING ELECTRICAL INSTALLATION				
Allow for the stripping of existing electrical installation	Sum	1		
AS BUILT DOCUMENTATION				
Allow for the mark up of record drawings, submission of 3 sets of as-built files containing material specifications	Sum	1		
INSPECTION, TESTING AND COMMISSIONING				
Inspection, testing and handing over of the complete installation in the presence of Engineer and certify the r	Sum	1		
LABELLING				
Label all circuits and install signage to the panels	sum	1		
TOTAL SECTION 4 - BILL NO. 2 ELECTRICAL INSTALLATION				
TOTAL - ELECTRICAL INSTALLATION				
SECTION 5				
BILL NO. 1				
RENOVATIONS AND REFURBISHMENTS OF THE LEARNING FACTORY				
MECHANICAL INSTALLATION				
COMPRESSED AIR				
FIRST & SECOND FLOOR				
Compressor: Free air delivery: 60 CFM at 7.5 bar				
Air receiver: 300 L pressure vessel tank rated for minimum 7.5 bar	No	1		

Dryer: Refrigerant type, 60 CFM at 7.5 bar	No	1		
Air Cleaner: Cyclone separator, 60 CFM at 7.5 bar, including filters	No	1		
Piping and fitting: Piping - 250m, fittings, 14 Off 1/4 inch connection points	No	1		
HVAC SECOND FLOOR				
Air conditioner: 50 kW cooling capacity ground mounted cooling tower, 8 port branch controller	No	1		
Indoor unit: 4.5 kW cooling capacity ceiling suspended indoor unit	No	7		
36000BTU Mid Wall Air Conditioner (Replace, Supply, Install, Isolator and Remote control with batteries)	No	3		
FIRE SYSTEM SECOND FLOOR				
Fire extinguisher:10 kg CO2 Fire Extinguisher including mounting	No	4		
TOTAL SECTION 5 - BILL NO. 1 MECHANICAL INSTALLATION				
TOTAL - MECHANICAL INSTALLATION				
SECTION 3.				
CONTINGENCIES				
Allow 10% contingencies of the measured works including the preliminaries and general to be directed by the Project Manager	Item	1		
TOTAL SECTION 3 - BILL NO.01- CONTINGENCY				
SUBTOTAL				
ADD VAT @15%				
GRAND TOTAL				