



**VAAAL UNIVERSITY**  
OF TECHNOLOGY

## **PROPOSED EXTENSION TO THE LABORATORY & ENGINEERING BUILDING**

### Baseline Specification Document

Prepared by Ikemeleng Architects - 28 August 2024

#### General notes:

The successful Supplier shall provide samples of products for approval  
Images of acceptable products are as shown  
For all fittings position of items to be confirmed prior installation  
Dimensions for blinds to be confirmed with actual window sizes prior manufacture  
All product should comply with relevant SABS standards  
This schedule should be read in conjunction with the architects drawing - Furniture layout

FINISHES		CEILINGS
Area		Specification
Computer Labs (001;010;011; 012; 016;)	<b>Ceiling tiles - vinyl clad - insulated</b>	<b>(DU-AL-01)</b> 1200 x600X15mm thick Pelican Econocast Pinhole mineral wool Ceiling tile with square edges and white painted finish, suspended on exposed pre painted aluminium capped metal tees.
Server Room (015); Printing Room (014) and Office space (013)	<b>Flush plaster board + paint</b>	<b>(SC-C-02)</b> 6.4mm Gypsum board fixed print side up to screw-up plasterboard ceiling system. Fibreglass skim tape to butt joints and plaster ceiling with 3-6mm skim plaster. All paints used to be SABS approved. Rhinolite skim plaster. Prepare, stop and apply 1ct primer/undercoat and 2cts acrylic emulsion paint. Sand Lightly. When Dry. All Excess Compound To Be Feathered Out And Cleaned Off, All To Manufacturers Specifications. Ceiling Substructural System To Engineers Detail. Bulkheads To Detail - Refer To Ceiling Drawings And Details.
General	<b>Neat and Accurate Junction</b>	Neat And Accurate Junction Between Wall And Ceiling.
Toilets (005;006;007; 008;017;018; 019)	<b>Combination Ceilings:</b>	Combination Flushplastered And Painted Ceiling With Bulkhead Painted With Undercoat And 2 Coats Plascon Velvaglo (White) And Vinyl Suspended Lay in Ceiling. All To Manufacturers Specifications. Ceiling Substructural System To Engineers Detail. Bulkheads To Detail - Refer To Ceiling Drawings And Details.
Server Room (015); Printing Room (014) and Office space (013)	<b>Plaster Ceilings:</b>	<b>(SC-C-03) One Coat Cement Sand Plaster</b> Render coat(s) to be as follows: The mix proportions of cement to sand to be 1 to 3 1/2-4 1/2 for dense, strong and smooth or moderately strong and porous backgrounds; Thickness, excluding dubbing out, to be 12mm minimum, 15mm maximum. Maximum thickness for single coat 15mm.
	<b>Roof Insulation</b>	<b>Above Ceiling Insulation</b> Insulation to be 100mm thick flexible non-combustible light weight "Aerolite" insulation material or approved equal, between the roof trusses & over bracing / purlins / suspension system in a completed roof & ceiling system. Installation strictly in accordance with the manufacturer's detail & specification The insulation board to be attached to or supported within the works so as not to bulge, sag, delaminate or detach during installation or in situ during the life of the works.
General	<b>Roof Insulation</b>	<b>Below Roof Sheetting Insulation</b> Industrial roof insulation for "over purlin" installation, namely:  Isoboard high density 32-36kg/m3 rigid extruded polystyrene 100% closed cell insulation board of 40mm thickness and 600mm wide (with polyethylene treated kraft slip sheet factory applied to upper surface ), fixed concurrently with roof covering, over steel purlins at max being approx 2,1m centres, with 5mm gap between butt – jointed over purlins (or tongue and groove as recommended by manufacture). (Include for application of polyethylene laminated kraft slip-sheet to separate isoborad from steel painted roof). Isoboard to be supported with additional aluminum T-sections where purlin spacing exceeds recommended max. of 1600mm.Radii of roof to also be taken into account. All installed as per manufacture's specifications.  <b>Concrete roof Insulation</b>  Insulation to be "IsoBoard® high density 32-36kg/m³ rigid extruded polystyrene 100% closed cell insulation board of 50mm thickness and 600 mm width with shiplap joint all round laid tightly butted on waterproofing membrane (elsewhere)." Lay a water-permeable geofabric membrane over the IsoBoard, and cover with minimum 20 mm thick concrete screeds to falls to prevent flotation and wind uplift. Rainwater outlets/downlets should be dual level, capable of accepting water from above both the waterproofing membrane and the IsoBoard layer. Verges and upstands to be high enough to contain the insulation and ballast layer.
		<b>Cornice</b>
<b>Area</b>		<b>Specification</b>

General	<b>Metal – pre painted shadowline</b>	Donn SM 25 prepainted pressed metal shadowline cornice. Installed in accordance with Manufacture's specifications. To suit attached ceiling.
		<b>Floors</b>
<b>Area</b>		<b>Specification</b>
	<b>General</b>	All Hard-Core Filling To Be Free Of All Decomposable Materials & Expansive Soils. Soil To Be Treated With Treat Ground Under All Internal/External Walls, Trenches And Surface Beds With approved Ant, Termite and Soil Poisoning Material & Covered With Sand Or Similar Approved
General	<b>Concrete Surface Bed</b>	To Engineers Design
General	<b>General</b>	All Suspended Slabs, Surface Beds, Beams etc, to Engineers Design. The Contractor is responsible for the finished levels of floor slabs, where required, to compensate for variation in the thickness of floor finishes. Finished levels to all materials to be identical unless step indicated on drawings. At all transitions from one material to another and at all external thresholds, Finishes To Be Laid against a Stainless Steel Weather Strip. External Thresholds to be weathered to fall away from Stainless Steel Strip. All screeds to be minimum thickness as indicated but allowances must be made for the different floor finishes so that all the finish floor levels will be the same throughout. (I.E. Screeds must be made thicker where necessary). All floors/screeds to be laid according to SABS 0155 – 1980 Accuracy in Buildings and SABS 0155-1980
General	<b>Screed :</b>	Screed To Be Min. 30mm Thick 1:3 Cement-Sand Power Floated Finish True And Smooth Prepared To Take Carpet/Vinyl Sheeting. Level Of Carpet/Vinyl And Tiles Must Co-Inside. Total Thickness Of Screed, Carpet/Vinyl To Be 40mm Above Concrete Surface Bed.
General	<b>General: Ceramic/Porcelain Tiles</b>	Apply adhesive on solid bed 6-10mm thick. Bed dry tile firmly into the wet adhesive with a twisting action to ensure full contact between the background, tile and adhesive. Ensure that the grooves or dove or dovetails are completely filled. Grouting should not be carried out for 1-3 days after completion of laying. After Completion Of Grouting. The installation should be subject to service conditions for at least 48 hours. Colour of grout to architect's approval. Allow for expansion joints in tiling all to manufacturer's specification. When tiling over structural joints refer to detail see dwgs. All porcelain floor/wall tiles to be calibrated. Final thickness of screed, grout and tiles to be 40mm. All floor finishes to be finished at same level 40mm above concrete floor. Horizontal movement joint (polyethelane) – Jointex: Joint sealer (polysulphide) - Sikaflex 35SL Screed waterproofing admixture - Sikalite Epoxy grout - Tal fine epoxy grout
(003;004;013; 014)	<b>Carpet Tiles</b>	<b>Shaw Rapid Select carpet tiles</b> , PET non woven carpet tiles, Indicative Supplier: PentaFloor +27(11) 440 6759 Size and Colour to later specification, adhered as per manufacture's specifications. Installed strictly in accordance with manufacture's specifications for majority of areas: As stated in the SABS code of practice – The installation of textile floor coverings SANS 10186.
Server Room (015)	<b>Rubber Sheeting</b>	Rubber flooring for extremely heavy traffic areas with classical round pastille , one-coloured, having qualities including: impact resistance, fire resistance, electrostatically conductive and skirting wall guards and laid as per manufacture's instructions, including joint sealing compound. Sample and colour to be provided for approval.
Computer Labs (001;010;011; 012;016)	<b>Vinyl Sheeting</b>	<b>300 X 300 X 2mm "MarleyFlex" semi-flexible vinyl tiles</b>
General (002;012;005; 006;007;008;0 09;020;017;01 8;19)	<b>Porcelain tiles</b>	<b>(SC-F-03)</b> 600x600mm Non Slip Porcelain tiles fixed with Tal Profix adhesive. Jointing of tiles to be epoxy grouted and laid on 0mm screed. Form movement joints in tiling and through full depth of bedding coat over background movement joints and not exceeding 5m on RC slabs and surface beds, at junction with wall and floor and where tiling is continuous over different backgrounds. Horizontal movement joint (polyethelane) – Jointex: Joint sealer (polysulphide) Screed waterproofing admixture - Sikalite Epoxy grout - Tal fine epoxy grout
		<b>Skirtings</b>
<b>Area</b>		<b>Specification</b>

Computer Labs (001;010;011; 012;016)	<b>Tiled Skirting:</b>	Tiles Cut To 100x600mm To Form 45 degree angled Skirting Strip Fixed As For Other Tiles.
Toilets (005,006,007, 008,017,018, 019)	<b>Tiled Skirting:</b>	Tiles Cut To 100x200mm To Form Skirting Strip Fixed As For Other Tiles
General	<b>Neat And Accurate Junction</b>	Neat And Accurate Junction Between Floor And Wall
		<b>Floor Fittings</b>
<b>Area</b>		<b>Specification</b>
General	<b>Construction movement joints</b>	Flush fitting Emseal Expansion Joint System EK 38/38 for all floor finishes as supplied by Comprifix cc. and fixed strictly in accordance with manufacturers instructions.
	<b>Entrance matting - recessed</b>	"Frontrunner" open-grid heel-proof entrance matting comprising extruded P.V.C. with diamond tread slip resistant surface. Matting laid in 31mm deep recessed opening in screed, edged with "E" edge section and laid so that top ribs are across traffic flow and narrower spaced bars are uppermost. Colour : 914 - dark grey. Minimum size : width of doorway x 1metre unless otherwise indicated on drawing.
General	<b>Screed joints - ceramic tiled floors</b>	Genesis APS, MAP 060 and MMA 060, medium duty aluminium compression and expansion joint system against walls and to internal panels.
	<b>S/S Inlay Strip:</b>	Stainless Steel Staight Edge Trim With Depth To Suit Tile Thickness Layed Around Central Tiled Panels And Wherever Different Floor Finishes Butt Against Each Other, The Edge Stair Treads. Type: M-Trim By Kirk Marketing.
General	<b>Expansion Joints</b>	Recessed Modular Floor/ Wall/Ceiling Expansion Joint System, fully integrated, seamless by REACT 100/200, size, colour, and final type to be confirmed by Architect.
Computer Labs (001;010;011; 012;016)	<b>Kick Rail</b>	
		<b>Walls</b>
<b>Area</b>		<b>Specification</b>
	<b>General</b>	<p><b>WALLS: DAMP PROOF COURSING:</b></p> <p>Horizontal &amp; vertical damp-proof course to be of black polyethylene sheeting complying with SABS specifications 952 type B having embossed surface 0.38mm thick ( 375 microns) &amp; manufactured in widths of less than 1000mm. Lapped minimum 150 mm at all joints, &amp; ensure similarly lapped over green/orange under-floor damp proof membrane sufficiently.</p> <p><b>DPC'S (IN CAVITY CONSTRUCTION):</b> DPC To Be At Least 2 Courses Above Ground Level At Inner Skin And At Least 1 Course Above Finished Ground Level At Outer Skin.</p> <p><b>UNDER CILL DPC (IN CAVITY CONSTRUCTION):</b> To Be Well Tucked Up Into Underside Of Window Frame, Dressed Down Into Cavity And Sandwiched In Mortar Joint Between Brickwork All As Detailed.</p> <p><b>DPC'S AT DOOR &amp; WINDOW REVEALS (IN CAVITY CONSTRUCTION):</b> Minimum 150 Mm Side, To Be Tucked Into Side Of Door And Window Frames And Sandwiched In Mortar Between Outer, Facebrick Skin And Cavity Closer And To Overlap Lintel And Cill Dpc's.</p> <p><b>DPC'S AT LINTELS:</b> To Be Inserted Above All Windows, Stepped Up One Course And Built Into Inner Skin Coursing With Mortar Fill Under All As Detailed.</p>
	<b>External Walls</b>	<p><b>EXTERNAL LOAD BEARING WALLS:</b> To Have Galvanized Brickforce Reinforcing At 5 Course Intervals Built Into Bed Joints. Door/Window Heads To Be Reinforced To 3 Courses Above Openings, And At 3 Course Intervals Thereafter. N.B. Brickforce Reinforcing Strips To Be Built In Isolation Into The Appropriate Brick Skin And Must Not Be Used To Tie The Inner And Outer Skins Of The Cavity Together.</p> <p><b>CAVITY Wall Construction:</b> Walls To Be Built Up Using 200/300mm Long Stainless Steel Or Copper Butterfly Type Ties At 1m Centres, At 3 Course Intervals, Staggered Evenly. Contractor To Ensure That Wound Ends Of Ties Point Downwards And Drip At Centre Of Cavities. The Contractor Is To Ensure That Cavities And Ties Are Kept Clear Of Mortar Droppings, Leaving Every Fourth Brick Out Above Every Dpc To Facilitate The Periodic Cleaning Of Cavities During Building Operations.</p>

		Every 4th Perpend To Be Left Unpointed/Raked Out To Allow For Drainage Of Cavity.
		<p>EXPANSION JOINTS:</p> <p>Neutral Curing Silicone Sealant With Polycord Backing Cord 10 Mm Deep To Vertical And Horizontal Expansion Joints Where Shown. Colour : To Match Colour Of Pointing And To Architect's Approval. Tiling Sub-Contractor To Confirm All Movement Joints And Soft Joints In Floor Tiling With Adhesive Specialist Prior To Laying (Eg:Perimeter Floor Movement Joints, Where Brickwork Meets Concrete Columns In Walls And At Min. 3000 X 3000mm Areas In Floor Tiling).</p> <p>V-Joint Formed With Steel Rounded Trowel, Cut Through Full Thickness Of Plaster Where Material And Concrete Joins On The Horizontal And The Vertical (Sample To Be Approved).</p> <p>Sample: A Sample Area Of Approximately 5 M2 Is To Be Prepared For All Finishes, To Determine Standards Of Materials And Workmanship, For Architects Approval. All Substrata To Be Clean, Dry, Uniform And Free Of Dust And Contaminants. Any Detergent Or Cleaning Substance Used To Clean Substrate, That Leave A Residue To Be Thoroughly Cleaned.</p> <p>All Joints In Brickwork To Be Well Raked Out. Concrete Surfaces To Be Hacked And Coated With A Cement Slung To Form A Key. Surface Foundation Walls: Brickwork Below Damp Proof Course Level, All Isolated Piers Three Bricks Wide &amp; Under, Half Brick Walls Shall Be Built In 6:1 Cement Mortar Mixed Dry To Uniform Colour.(CI 5.15.1). All Joints In Brick Foundation Walls To Be Grouted Solid With 3:1 Liquid Cement Mortar To Obviate Any Crevices For Ant Or Termite Tracks.</p> <p>colour: Country Classic Satin FBX : Sapphire Satin FBX</p>
		<b>Walls continued</b>
<b>Area</b>		<b>Specification</b>
	<b>Stock Brick:</b>	<p><b>Internal Stock Brick:</b></p> <p>To Be Laid In 1:3 Cement / Sand Mortar With Flush Joints In Strict Accordance With Approved Sample Wall. Note: All Finishes To Be Laid In Strict Accordance With Manufacturers Specifications And Instructions. Laid From Floor To Ceiling And Above As Indicated.</p> <p><b>Internal/External Facebrick</b></p> <p>Clay Facebrick by Corobrik laid as per manufactures specification &amp; SABS 227:2002, with Class1 mortar (1: 4 ) cement /sand,</p>
Printing Room (014) and Office space (013)	<b>1ct plaster</b>	<p>To be laid in 1:3 cement / sand mortar with flush joints, minimum 13mm thick, finished off with a steel trowel smooth and to an even surface. all corners to have 15mm radius thumb moulds. junctions between concrete and brickwork to have v joints cut straight and true to architects approval. Plastered finish.</p> <p>Note: all finishes to be laid in strict accordance with manufacturers specifications and instructions and a sample wall to be built for approval.</p> <p>- laid from floor to ceiling and above as indicated. <b>No paint</b></p>
Server Room (015)	<b>1ct plaster + paint</b>	<p>3:1 sand/cement.steel trowelled plaster.</p> <p>Prepare, stop and apply one coat primer/undercoat and two coats acrylic emulsion paint.</p> <p>All paints used to be SABS approved.</p>
Computer Labs (001;010;011; 012;016)	<b>2ct plaster + paint - wet &amp; high use areas</b>	<p>Two coat steel trowelled rendered plaster with smooth finish.</p> <p>All paints used to be SABS approved.</p> <p>Prepare, stop and apply 1ct primer / undercoat and 2cts Plascon Velvagio polyurathane enamel.</p>
ducts	<b>Bagged and painted</b>	<p>1 part cement to 5 parts sand. Spread over the surface with a rolled-up sack until all holes are filled.</p> <p>All paints used to be SABS approved.</p> <p>Finish with universal undercoat and two coats PVA.</p>
Kitchenette Area first floor	<b>Ceramic/porcelain tiles glazed - Dry area</b>	<p>Matt glazed pressed ceramic tiles with Tal Proflex waterproof adhesive. Joint tiles with Tal Super White grout. Form 6mm wide movement joints in tiling through full depth of bedding coat over movement joints in the background; at ceiling level; vertically and horizontally at approx 4,5m centres and where tiling is continuous over different backgrounds.</p> <p>Movement joint sealer (polysulphide)</p>
	<b>Ceramic /Porcelain tiles glazed - Wet areas</b>	<p>Matt White glazed pressed ceramic tiles with Tal Proflex waterproof adhesive on wall plaster made with waterproof admixture. Joint tiles with Tal Super White grout with water content replaced with Tal Bond. Form 6mm wide movement joints in tiling through full depth of bedding coat over movement joints in the background; at ceiling level; vertically and horizontally at approx 4,5m centres and where tiling is continuous over different backgrounds. Plaster waterproof admixture - Sikalite</p> <p>Movement joint sealer (polysulphide)</p>
General	<b>Paint</b>	<p><b>GENERAL:</b></p> <p><b>(MA-P-01) Emulsion Pints</b></p> <p>Acrylic Vinyl Emulsion</p> <p>Product/Reference: Acrylic Vinyl Emulsion.</p>

		Preparation/Primer/Basecoat: Plaster primer. Undercoat(s): nil. Finish coat: Two coats Vinyl Emulsion.  Colours: to later Specification  All to be applied as per manufacture's specifications
		<b>Window Cills</b>
<b>Area</b>		<b>Specification</b>
General	<b>Internal Plastered and Painted cill</b>	Standard plastered cill with bullnosed edge as per detail.
	<b>Internal particle board cill</b>	32mm bullnosed fine particle board internal cill plugged & countersunk screw fixed through to brickwork using 60mm wood screws at max 300 centres, pelleted and prepared for painting as per finishes schedule. 15 x 15mm hardwood timber escontia pinned to cill. Prepared for painting as per cill. 60mm plugged and countersunk wood screws.
Kitchen Prep Area of Cafeteria	<b>Internal Tiled cills</b>	Ceramic / porcelain tiles to match wall tiles.
General	<b>Plaster + paint</b>	Return wall plaster into window reveal. Fall plaster from window frame to inside by 50mm. Return applied wall finish into reveal as cill finish.
<b>FINISHES</b>		<b>FITTINGS &amp; FIXTURES</b>
		<b>Wall fittings</b>
<b>Area</b>		<b>Specification</b>
Workshops	<b>Corner protectors - galv mild steel</b>	35 x 35 x 4mm x 1500 long galvanised mild steel corner protectors with No.4 off fanged anchors welded to inside and fixed to corners of column shutter box at floor level as off shutter column and concrete wall protectors.
Printing Room (014) Computer Labs (001;010;011; 012;016)	<b>Pinning board</b>	Panel consisting 2 no, Vitrex Model 2300-D standard wall mounted educational range pin board, size 1200 mm high x 2400 mm wide, reference (2309B). Pinning surface to be Belgotex Colour-Rib, colour Bleach. Pin boards supplied complete with fixing components and secured to brickwork.
<b>FINISHES</b>		<b>EXTERNAL FINISHES</b>
		<b>Drainage</b>
<b>Area</b>		<b>Specification</b>
	<b>Stormwater - Concrete surface chanel</b>	Refer to architects detail drawings.
	<b>Stormwater - RWP Conc shoe surface chanel</b>	Refer to architects detail drawings.
	<b>Stormwater - RWP Sumps</b>	Refer to architects detail drawings.
		<b>Ground</b>
<b>Area</b>		<b>Specification</b>
	<b>Concrete apron to building perimeter.</b>	Refer to civil engineers detail drawings.
<b>Area</b>		<b>Roofs</b>
<b>Area</b>		<b>Specification</b>
	<b>Rainwater goods - Aluminium</b>	Baked enamel colour coated preformed aluminium rainwater goods fixed strictly in accordance with manufacturers instructions. Refer to architects details for specific sizes and configuration.
	<b>Rainwater goods - Specialist</b>	Cast iron Fulbore top and side outlets cast into slabs and beams as per layout drawings. Refer to architects details for specific sizes and configuration.
		<b>Waterproofing</b>
<b>Area</b>		<b>Specification</b>
	<b>Reinforced bitumen membrane Waterproofing</b>	Single layer 4mm thick Derbigum fibreglass reinforced waterproofing membrane laid in accordance with manufacturer's specification. 1.- Clean down and prepare surfaces, prime with bitumen primer and apply one layer 4mm thick waterproofing membrane laid torch-on or by Coldbond 90 adhesive including turning up against and over kerbs etc. and down over edges and dressed into outlets. 2. - 150mm Girth glass fibre/polyester membrane flashing sealed along length to brick or

		concrete and waterproofing to include all angles and ends etc. 3. - Apply 2 heavy coats of bitumen based aluminium paint on waterproofing at completion.
		<i>Boundary Fencing</i>