



GENERAL SPECIFICATION DOCUMENT

PROJECT: TSHEDIMOSO PRIMARY SCHOOL

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IMPORTANT: This General Specification Document must be read in conjunction with all Architectural drawings and specifications. Items listed in the document must be read as *where applicable* to the architectural drawings issued.

1.GENERAL SPECIFICATIONS

1.1 Regulations

All work to be done within the National Building Regulations SANS 10400.

1.2 Authorities

Local Authority requirements to be complied with upon approval of submitted and approved building plans.

1.3 Standards

Work to be done in accordance with SANS 10400 specifications or code of practice where applicable and based on the model preambles for trades (August 2011 publication) subject to architects' specifications.

1.4 Variations

All variations of specifications and drawings to be approved by the architect prior to commencement of work concerned.

1.5 Documentation

The main contractor is to familiarize himself with all the information as per the issued drawings and architects' as well as other consultants' specifications. The construction programme must make reasonable allowance for specialist's feedback and shop drawings.

1.6 Foundations

The conditions of the soil are to be tested and approved by the Structural Engineer prior to casting the structure's foundations. Additionally, the foundation trenches must also be approved prior to casting the foundations.

1.7 Structure

All structural concrete work, reinforced brickwork, retaining walls and roof construction to be to the structural engineers' drawings or approval.

1.8 Waterproofing

Waterproofing and sealing to be done by trained and approved applicants in the trading field as recommended by the waterproofing manufacturer.

1.9 Materials

All materials to be applied in accordance with respective manufacturers' directives and specifications.

1.10 Samples, mock-ups, and specialists' feedback

The architects require the above to be provided to ensure that the work is done to a standard to all parties' agreement, and to avoid any loss in time due to rectification of unsatisfactory documentation or work.

1.11 Inspections

All work to be completed to architect's approval. The contractor to arrange timeously for architects' inspections in such a way to allow sufficient time for remedial work before completion date.

1.12 Consultants

All references to engineers and quantity surveyors are to be the consultants appointed as part of the professional team.

2. GENERAL BUILDING WORK

2.1 Foundations

Strip footings with concrete of 1 cement/3 sand/6 stone mix, subject to structural engineers' specifications.

2.1.1 110mm Brick Walls

To be on thickened surface bed to NBR HH 2.6, or on new reinforced surface bed (as per structural engineers' drawings).

2.1.2 230mm Brick Walls

To be on 230 x 750 concrete foundations (as per structural engineer's drawings).

2.1.3 280mm Cavity Walls

To be on 230 x 750 concrete foundations (as per structural engineer's drawings).

2.1.4 Footings for columns, piers, retaining walls

To be reinforced concrete and steel construction to structural engineers' drawings.

2.2 Brick walls

2.2.1 Type of brick

Clay, concrete & calcium silicate bricks to **SABS 227, 1215 & 285** respectively Samples and delivery batches to be approved

2.2.2 Bricks

General brick size: average (105 x 220 x 73) - (110 x 222 x 75 maximum and minimum tolerances evenly distributed)

2.2.3 Module

Brick module: 105 /220 horizontally, 73mm vertically

Brick on edge: ± 73 horizontally, ± 105 mm vertically

Soldier course: ± 105 horizontally, ± 220 mm vertically.

2.2.4 Joints

Brick joints: 8 to 12mm. See E.1.3. for pointing.

2.2.5 Face bricks

Class: FBX

Face bricks to be guaranteed against efflorescence.

Face brick work to be guaranteed against "*lime bloom*", "*lime weeping*" etc.

Mortar mixtures should thus be of best quality and contact between face brick work and concrete is to be prevented.

Provide sample panel of 3m² prior to commencement of brickwork.

Provide solid face bricks for corbelling work, top of walls, ends of soldier courses, etc.

The contractor to ensure that every batch of bricks delivered, match the approved sample by architect.

2.2.6 Sills, lintels, etc

See detail drawings for sills, copings, lintels, etc. All brick wall openings of wider than 900mm to be supported by approved concrete lintels.

Lintels shall have a bearing of not less than 225mm at each end.

2.2.7 Mortar

Mortar mix (cement: **SABS 471**, sand: **SABS 1090**) 1 cement: 4 sand underground 1 cement: 1 lime: 6 sand above ground for plastered walls. 1 cement: 1 lime: 6 fine sand for face brickwork (to be confirmed) any additives (eg. Plastizer etc) to architects' approval (Plaster mixes are subject to sand quality).

2.2.8 Bond

Stretcher bond generally header courses every 5th course of 230mm solid and thicker walls.

2.2.9 Brick force

Galvanized steel wire *brick force* every 5th course of 110mm walls.

2.2.10 Wire ties

To comply to SABS specifications 28

Galvanized butterfly type wire wall ties for wall cavities up to 75mm wide and 20 x 3 galvanized steel "*vertical twist*" wall ties for cavities up to 150mm wide at 1000mm horizontal and 255mm staggered vertical centres galvanized crimped wire ties in 220mm + walls without header courses ties between brick facing to structural concrete to structural engineer's specifications.

2.2.11 Damp proof coursing

Provide damp proofing to specification elsewhere, D.1.2. horizontal D.P.C. in cavities to slope outwards, supported on mortar bed.

Vertical D.P.C. to extend from inside door and window frames to ± 50 mm into cavities, backed by patent plastic foam in window frames.

D.P.C. to be sealed at laps and turned up and sealed against concrete

2.2.12 Waterproofing

*Only if applicable to architectural drawings.

Adhesive type as *Derbigum* (or equal approved) torch-on type in concealed or built-in situations for upper floors turned up against adjacent structure, etc in such a way to prevent rainwater leaking into the building interior or internal structure. Acrylic type painted on glass fibre gauze in exposed or accessible situations. Waterproofing of flat roofs as specified elsewhere.

2.2.13 Control joint

* Refer to structural and architectural drawings for precise positions.

Provide 10mm vertical movement control joints in external skin of brickwork at 5m maximum spacings and between independent concrete columns and brickwork as shown on elevation drawings, also between concrete and brickwork, filled with "*Jointex*" and seal in "V" joint of pointing. (or equal approved)

Provide cranked galvanized hoop iron ties at ± 600 mm vertical and ± 1000 mm horizontal intervals.

Provide 10mm horizontal movement control joints (directly under suspended concrete floor structure).

Provide horizontal slip joints between concrete floor structure and load bearing walls.

2.2.14 Anchoring

*Subject to consulting structural engineers' specifications.

Brick walls to be anchored to concrete structure.

2.2.15 Fixtures to walls

The density and strength of brick walls to be sufficient to hold the weight of at least 3 times the loaded anchors of fittings in accordance with manufacturers' requirements.

Hollow bricks or blocks to be compacted with mortar.

2.3 Concrete work

All concrete work is subject to consulting structural engineer's specifications.

2.3.1 Finishes on ground floors

Floor finish on -

(A) Smooth screed

Wood floated concrete

(B) Power floated concrete floor slab on damp proof membrane on 50mm compacted sand on compacted fill provide 10mm foam plastic movement joints between walls or columns and edge of floor slab. Provide construction joints at ± 4500 c/c in both directions.

2.4 Roofing

2.4.1 Steel roof construction

To be in accordance structural engineers' drawings

2.4.2 Metal roof sheeting

Safintra 0.58mm thick, Z 200/275 Zinc coated steel Tufdek® IBR profiled roof sheeting, fixed to intermediate coated steel purlins at 1900mm centres and to ridge and eaves purlins at 1600mm centres, with #12 x 65mm metal-fix Fixtite™ or Safintra approved hex head selfdrilling fasteners at every second crest, at intermediate purlins and at every crest at eave purlins. Side laps to be stitched at 500mm centres between purlins with a #14 x 22mm metal-fix stitching fastener, in accordance with manufacturer's recommendations.

The sheeting shall be Tufdek® IBR type profile as manufactured by Safintra. The profile shall be roll-formed with 5 trapezoidal ribs at 171mm centres with an effective cover width of 686mm. The rib height shall be 36.5mm and shall be fixed in accordance with the manufacturer's recommendations.

During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any debris.

(or equal approved).

Matching head and side wall flash, apex flash

A pre-approved 15-year material warranty to be attached to the tender documents

2.4.3 Roof insulation

* Refer to architectural drawings

Isotherm: spaces between the roof beams, trusses, and grids to be measured before ordering and installation of ISOTHERM, to ensure the correct roll is ordered and used. Trim isotherm to correct size before entering the roof space. Is to be cut with a pair of industrial scissors or shears. Place isotherm above in close contact with the ceiling, fit snugly between the roof beams and trusses. Ensure continuous insulation. Carefully butt the ends of the rolls or lap to ensure maximum effectiveness. Allow a 150mm gap around flue pipes for further energy saving. Wrap isotherm around geysers and water pipes to ensure further energy saving. Continue the installation process until the ceiling is completely insulated. Do not block ventilations points with isotherm. This includes eaves gaps and air bricks at gable ends. Keep clear to ensure that the airflow is maintained. Do not waste off cuts. Use them wisely—fill gaps, crevices, and corners. Do not put isotherm in direct contact with metal chimney fabrications or flues passing through loft space. Do not forget to insulate the geyser above the trap door. (or equal approved).

2.5 Rainwater drainage

2.5.1 Aluminium gutters

*Only if and where applicable to architectural drawings.

Type A:

Gutter: 150mm Box profile aluminium seamless gutter, overall size 150 x 140 x 0,9mm thick coated internally and externally, including cut and mitered angles covered with a mitre strip externally, stop ends riveted and all sealed on the inside with Dow Corning 813 silicone sealer (or equal approved) secured to metal roof sheets with 25 x 2,5mm L - Shaped and internal brackets at 600mm centers using aluminium pop rivets.

Downpipe: 100 x 75 x 0,6mm thick aluminium downpipe fixed to wall with straps at 1500mm centers using nail plugs, with downpipes riveted and silicone sealed to gutter outlets, including all necessary bends, elbows, shoes etc.

Type B:

Downpipe: 76mm Ø x 1.27mm round aluminium fixed to wall with pre-painted aluminium straps at 1000mm centers fixed to wall with nail plugs.

Type C:

Purpose made galvanized M.S. rainwater goods to further details.

2.5.2 Built-in rainwater pipes

Built-in rainwater pipes to be U.P.V.C. with **SABS 967/1975** specification. Joints to be sealed and tested before being enclosed

Provide 45° outlet shoes as per detail drawings.

2.5.3 Roof outlets

Use "*Full-flow*" outlets made of ductile iron only (or equally approved), fixed directly on top of concrete roof slab.

Roof finish to slope 45° directly around outlet.

Domical gratings for un-trafficable and flat gratings for trafficable or pedestrian areas to be fitted.

3. ALUMINIUM WINDOWS, DOORS, LOUVRES, ETC

3.1 Standards

3.1.1 Manufactures windows and doors:

To be according to minimum requirements of the Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA).

Each window and door to be marked with the **AAAMSA** mark and number of the **AAAMSA** test certificate.

Product **category A2** (commercial application) will apply.

3.1.2 SABS 0160

The requirements of **SABS 0160** will also apply.

3.1.3 Powder coating

Powder coating to be "*interpon or equal approved*" with 10-year guarantee conforming to **SABS 1578 parts 1 & 2**.

3.1.4 Anodising

Anodising to **SABS 999** (including "**certificate of conformance**" by the anodiser) to 25-micron thickness and to match existing anodizing to approved sample

3.1.5 Laminated Glass

Manufacturer of laminated glass to provide a warranty of 5 years against delamination and colour degradation, conforming to **SABS 1263**

3.1.6 Assembly

Assembly screws and bolts to be stainless steel and fixing screws cadmium plated where necessary for above requirements.

3.1.7 Structural Responsibility

The sub-contractor is responsible for the structural design of the work.

3.2 Architect drawings

The architects' drawings to be read as typical.

The manufacturer's patent frame girth and design to match the size and design of those as shown on architect's drawings.

All corner junctions to be 45 degrees.

3.2.1 Shop drawings

Shop drawings and samples are to be submitted by the main contractor to the architects for approval.

No claims for delay or extra cost will be accepted due to the absence of scrutinized shop drawings.

3.2.2 D.P.C

All external windows and doorframes are to have horizontal and vertical damp proof membranes that penetrate the cavity. Vertical D.P.C. to be outside of sill D.P.C. at bottom corners. Sill D.P.C. to continue 100mm minimum past window frame edge. To be read in conjunction with architect's details.

3.2.3 Sealants

Window to brick/plaster joints to be sealed with \pm 5x5 to 10x10mm continuous sealant.

All joints and junctions to be sealed internally during fabrication.

All holes in framing members to be sealed before glazing.

All sealants are to be of the guaranteed quality silicon or polyurethane and used strictly in accordance with manufacturers' specifications.

Requirements of SABS 110, 1305, 1077, 635, 0137 will apply.

3.2.4 Seal strips

All window - or door opening sections of water protecting profiles are to be provided with felt or brush seal strips to prevent ingress of moisture and wind.

Nylon brush strips to be provided in all edges of double action swing doors and on bottom edge of single action swing doors.

3.2.5 Incompatible materials

The manufacturer shall always ensure that contact between incompatible materials shall be prevented. The structural stability of the windows is to be guaranteed.

3.2.6 Protection

Exposed aluminium surrounds are to be protected with adhesive tape until completion of adjacent brickwork. 5mm silicon seal between frame and brick/plaster is to be carefully and neatly applied.

3.2.7 Friction hinges

Projecting out arm of window opening sections is to be of best quality stainless steel in accordance with approved patented system and in accordance with weight of opening sections.

3.2.8 Sliding tracks

Sliding doors to be supplied with top hung-sliding gear or with nylon rollers designed to carry the mass of the glazed opening section including spring catches to allow 30mm opening in locked position.

3.2.9 Safety standards

All windows below 900mm A.F.F.L. to be \pm 6mm laminated glass unless otherwise indicated on window schedule.

3.2.10 Fixing of window frames/units

3.2.10.1 To structure

All frames to be fixed to walls at maximum 500mm centres with approved metal anchors and screws to prevent bending of frame. Windows to be installed after completion of concrete opening and protected against weight of surrounding brickwork

3.2.10.2 Frame tolerance

Window & door sizes indicate wall opening sizes. Allow 5mm all round play. Opening sizes to be exact (formed with jig if necessary).

3.2.11 Glazing

Glazing types to be as per window schedule. All glazing to toilets and shower to be obscure glass (see window schedule). All glass to be secured with aluminium glazing beads, and all glazing to be carried out in accordance with current building regulations (read in conjunction with **SABS code of practice 0137/1984 and amendments**). Glazing is to be protected with vinyl or neoprene packing with minimum 3mm clearance between glass and frame all round.

3.2.12 Door & window ironmongery

*Refer to separate door and window schedule with ironmongery specifications.

3.2.13 Samples

Samples of the following materials together with performance specifications to be submitted to the architects for their approval at the time of submission of the shop drawings:

- (a) Glass: each type specified
- (b) Gaskets: each type including typical joint and corner sections
- (c) Sealants: each type conforming to **SABS 110**
- (d) Colour
- (e) All frames type(s)

- (f) Ironmongery to be used
- (g) Typical window unit for built-in application.

3.2.14 Specialist work

Allow attendance to electronic specialist who will install door alarm, electronic code system etc.

3.2.15 Prices

Prices for aluminium work are to include for all necessary cutting to lengths, shaping, holding assembling, riveting, welding, or brazing and filing smooth, all accessories, packing, cartage, delivery to site fixing in position, all necessary drilling, tapping, screws screwing removal of protective membrane, sealing of edges and cleaning.

In addition, the tenderer should allow in his/her tender for the following items:

- (a) Protection of windows and doors during construction
- (b) Preparing shop drawings
- (c) Supply of warranty

3.2.16 Warranty and indemnity

The tenderer must undertake to produce an acceptable warranty to guarantee the following:

- (a) That the windows and doors will be watertight and airtight for a minimum period of 10 years after completion of the main contract
- (b) The standards of workmanship, materials and tolerances are in accordance with this specification.

3.3 External non-aluminium doors / gates

*Only if applicable to architectural drawings.

3.3.1 Steel frames

1,2mm steel frames hot dip galvanized as units. Subsequent welding, cutting, drilling, etc. will not be accepted (as applicable) special galvanized steel anchors at ± 500 c/c for building in galvanized strike plate for single door locks.

3.3.2 Thresholds

50 x 50 x 5mm Galvanized M.S. anchored to concrete floor edge to serve as sill. Refer to detail drawings.

3.3.3 Timber door frames

Meranti frames anchored with 5mm \varnothing x ± 300 long galvanized steel screw in type anchors at ± 500 c/c.

Frames sealed with colourless penetrating wood preservative before building in.

Door leaves to be framed, ledged, braced, and battened hardwood to door schedule. All fixtures to be corrosion proof. Selected meranti timber to be used.

3.3.4 Timber door leaves

Hardwood standard framed ledged and braced hardwood doors, etc as per schedule. Selected meranti timber to be used.

3.3.5 Ironmongery

*Refer to ironmongery schedule on door and window schedule.

3.3.6 Door & Window Ironmongery

*Refer to ironmongery schedule on door and window schedule.

3.3.7 Samples

Samples of the following materials together with performance specifications to be submitted to the architects for their approval at the time of submission of the shop drawings:

- (a) Glass: each type specified
- (b) Sealants: each type conforming to **SABS 110**
- (c) Colour
- (d) All frames type(s)
- (e) Ironmongery to be used
- (f) Typical window unit, in built in situation.

3.4 Internal non-aluminium doors

*Follow door schedule and detail drawings.

3.4.1 Steel frames

Of pre-hot dip galvanized steel plate pressed to profile as per drawings. Welded joints to be levelled off with frame and cold galvanized special steel anchors at ± 500 c/c for building in frames to be solidly filled. Chromed strike plate for single door locks. 100mm steel hinges as per schedule. 4 x rubber buffers at strike plate side.

3.4.2 Timber frames

Special approved hardwood frames, as meranti anchored with $\pm 5\text{mm } \varnothing \times \pm 300$ long galvanized steel screw-in type anchors at ± 500 c/c. Frames sealed with colourless penetrating wood preservative before building in.

3.4.3 Door leaf

Door construction as per specialist's approved details and specifications prepared for painting as per schedule.

4. WATERPROOFING

4.1 Preparation of bases

Ensure that all concrete and screed surfaces are cured and dried sufficiently to receive adhering type of waterproofing.

4.2 Damp proof coursing

4.2.1 Under ground floor slab

0,25mm "*Green polyethylene membrane*" (**SABS 952 type C**) under floor slab, turned up against walls subject to structural engineers' specifications.

4.2.2 In brick walls

"0,375mm "*Black Embossed Poly-ethylene Membrane*" (**SABS 952 type B**) horizontally at floor level, vertically at window and door reveals between frames and cavities at window and door heads

4.3 Tanking in basements or pits

*Only if applicable to architectural drawings.

Back excavation of vertical sides to retaining walls and provide waterproofing to walls and floors to structural engineers' specifications.

All penetrations, sleeves, etc. to be closed, sealed, and tested before backfilling.

Backfilling to be provided with sub-soil drainage to civil engineer's drawings

4.4 Sealant behind external brick skin

"*Flintkote*" (or equal approved) bituminous paint on concrete supporting walls and toes to separate brickwork from concrete

4.5 Waterproofing at parapets and kerbs

Attention to detail is important. The general principles involved are noted in the example sketches. It is recommended that brick parapets be rendered and protected with one layer of Derbigum SP3 or SP4.

Specification:

One layer *Derbigum* SP3 or SP4 waterproofing membrane, with 75mm side laps, sealed by 'torch-fusion' to side and top of parapet wall to receive paint (elsewhere) (or equal approved).

Coves and rounded edges:

All angles, internal and external, should be rounded. Provide a min. of 35 mm radius rounded cove at all internal angles. Horizontal and vertical surfaces are usually of different materials and are subject to different heat transference rates and thus differential movement. The waterproofing membrane is subject to unnecessary stresses and practical installation problems if it is sealed into or over a 90° angle. Sharp edges and angles are to be avoided. The cove will greatly reduce these stresses and provide a neat finish.

4.6 Sealant to flashings

All flashing overlaps to have flexible sealant (**SABS 1305**) ± 50mm wide wedged in-between laps.

4.7 Sealant to Windows / External Door reveals

Flexible sealant as silicon (**SABS 1305**) ± 10mm deep and wide between window/door frames and vertical D.P.C. or reinforced concrete backed with patent foam filler.

4.8 Sealant for external expansion joints

Flexible sealant as polyurethane ± 10mm deep and wide, recessed as brick pointing, matching mortar pointing or paint colour as applicable with foam plastic backing, etc.

4.9 Sealant to parapet expansion joints

*Only if applicable to architectural drawings.

Flexible sealant in combination with acrylic waterproofing to patent specialist details.

4.10 Sealant to sanitary fittings

Purpose made white fungus proof silicon sealant to porcelain fittings clear fungus proof silicon sealant in-between stainless-steel sink and worktop / wall edges.

4.11 Waterproofing to flat roofs

*Only if applicable to architectural drawings.

Substrate:

The substrate shall be to falls and cross falls of 1:80 to outlets. If no falls and cross falls exist (not recommended) a dual layer system must be used. The substrate shall be surface dry, clean, and smooth, free of voids, protrusions and contaminants. The area is then to be primed using a bituminous primer. Internal corners shall be filleted, and external corners rounded.

Specification:

One-layer Derbigum SP4 waterproofing membrane, with 75mm side laps and 100mm end laps, sealed to primed surface to falls and crossfalls by "torch-fusion" including protection of 50mm thick layer clean 19-25mm crushed stone on interdek separation layer.

Waterproofing to be installed by an Approved Derbigum Contractor under a ten-year guarantee. (or equal approved)

Outlets:

The waterproofing is to be fully dressed into the drainage outlets so as to ensure a watertight seal. Outlets are to be positioned so that they are easily accessible both for the Waterproofing Contractor at the time of installation and maintenance purposes at some future date. Ensure that the level of the flange is kept below the screed level to prevent ponding around the outlet.

Flood Test:

The integrity of the waterproofing system should be established by means of a flood-test of 48hrs – 72hrs duration, prior to handing over to the contractor. A certificate is to be obtained from the Professional Team recording the date and time-period of the test and that the waterproofing system was handed over in a clean, proper, and watertight condition.

4.12 Cavity walls / interface at columns & brick infill

Painted with a liquid bitumen vapour barrier

The outside face of internal skin of brick must be finished to an even and consistent cement perps to be flush with brickwork. Brush on 2 coats "Fintcote 3" in crosshatch application as moisture and vapor barrier. (or equal approved)

Soft Joint Seal:

Installed around window and door frames, also at movement joints (up to 20mm wide). Place DC 813 Neutral cure silicone sealant (cannot be over-painted) on a backing cord (Duracord). Min. joint size to be 6 x 6mm

If paint is intended to be installed onto the sealant use "Flexothane 27" – please note painting onto any soft joint sealant is not recommended.

(or equal approved)

Cement Mortar Admixture:

Use *Duralatex* liquid latex mixed into mortar mix for plaster, cement, screeds etc. to replace 1 third of the water component in the mix.

See mixing ratio instructions

(or equal approved)

4.13 Protection Coating for Off Shutter Concrete & Face Brick Facades:

Place "Durasil SH" by brush or Low Pressure "pump & spray".

Ensure the substrate is clean, firm and dry.

Apply 2 "flood" coats to the prepared substrate allowing for the required intervals between applications.

Application to commence from the highest point or top of the vertical façade working toward the ground.

(or equal approved)

4.14 Waterproofing to balconies, terraces, and verandas

Substrate:

As with most membranes and coatings, the substrate plays an integral part in the success of the system. Too often Waterproofing Contractors do or are compelled to install the waterproofing system on inadequate or poorly prepared surfaces. Surface preparation is essential to the success of the waterproofing system.

The substrate shall be surface dry, clean, and smooth, free of voids, protrusions, and contaminants. The area is then to be primed using a bituminous primer. Internal corners shall be coved, and external corners rounded.

A screed to falls is to be laid on the concrete surface to receive the waterproofing membrane.

Specification:

One-layer Derbigum CG4 on one-layer Derbigum CG3, with, laid staggered, side laps of 75mm and end laps of 100mm, fully sealed to primed screeded surface by “torch-fusion”, followed by one-layer Derbigum Interdek with 50mm laps, laid loose on waterproofing as isolation/protection layer, to receive fully bonded tiles/paving on a mortar bed of minimum 45 mm (elsewhere specified). Waterproofing to be installed by an Approved Derbigum Contractor. (or equal approved).

Outlets:

One-layer Derbigum CG4 on one-layer Derbigum CG3, laid staggered, with side laps of 75mm and end laps of 100mm, fully sealed to primed screeded surface by “torch-fusion”, followed by one-layer Derbigum Interdek with 50mm laps, laid loose on waterproofing as isolation/protection layer, to receive fully bonded tiles/paving on a mortar bed of minimum 45 mm (elsewhere specified). Waterproofing to be installed by an Approved Derbigum Contractor. (or equal approved)

Flood Test:

The integrity of the waterproofing system should be established by means of a flood-test of 48hrs – 72hrs duration, prior to handing over to the contractor. A certificate is to be obtained from the Professional Team recording the date and time-period of the test and that the waterproofing system was handed over in a clean, proper, and watertight condition.

4.15 Guarantees

Waterproofing and sealing work to be done by a member of the **Waterproofing Federation of South Africa** to manufacturer's prescriptions with 10 year approved written guarantee, by the manufacturer and the specialist applicator agreed before commencement of work.

4.16 Acrylic waterproofing

*Only if applicable to architectural and structural engineer's drawings.

Where specified on drawings, use best quality patent acrylic waterproofing liquid in polyester type membrane to cover top of parapets and to overlap roofing edges to architects' approval and on roof and gutter areas not exceeding 15m² provide screeds to falls of 1/60 minimum

5. FINISHES

5.1 External finishes

5.1.1 Samples

All specified or unspecified finishes to be done in accordance with approved samples of material and workmanship in 1m² panels or lengths as applicable

Quality of paint, paintwork, and colour to be guaranteed by contractor and manufacturer for 10 years

5.1.2 Face brick colours

To approved samples, sample panels and batch deliveries.

5.1.3 Face brick pointing

Recessed pointing: 6mm deep, mortar colour to be consistent. Pointing materials to be tightly and smoothly finished off against adjacent bricks.

5.1.4 Face brick surface guarantee

Surface to be guaranteed for 10 years against formation of efflorescence and calcium carbonate encrustations.

5.1.5 Fascia and gutter

Fibre cement fascia finished with pure acrylic roof paint. Exposed aluminium gutter and rectangular downpipes to be powder epoxy finished.

32X238mm Hardwood fascia, fascia edges to be sanded to smooth blunt and regular corners. Exposed aluminium gutter and rectangular downpipes to be powder epoxy finished.

5.1.6 Plastered walls

Plaster (1 cement: 5 sand above ground, 1 cement: 5 sand underground) (plaster mixtures are subject to sand quality). All subject to requirements of paint manufacturers' requirements. (15mm average, 10 to 20 thicknesses).

2 Coats plaster to all internal walls where required.

5.1.7 Pitched roofs

See 2.4.3

5.1.8 Concrete roofs

See 2.4.3

5.1.9 Slab soffits

Neatly shuttered with holes filled and projections removed.

5.1.10 Aluminium frames

"*Polyester powder coat*" or anodized (refer to door/window schedules).

5.1.11 Timber doors

Hardwood leafs and frames painted with satin gloss enamel as (see door schedule)

All ironmongery to be temporarily removed during paint application to prevent water ingress to wood and over-painting

5.1.12 Galvanized M.S. gates, grilles etc.

*Only if applicable to architectural drawings.

Satin gloss enamel painted (see door / window schedules)

5.1.13 Galvanized M.S. staircase

*Only if applicable to architectural drawings.

Special hard gloss as "*Plascon Glatex 8*" on etch primer (or equal approved).

5.1.14 Paving

All brick / concrete paving, bituminous pre-mix to civil engineer's specifications

5.2 Internal finishes specifications

5.2.1 General

All floor and wall finishes to be provided with at least a spare quantity for use in events of rectifying defective work as per architects' defects lists. Additional 5% required for attic stock.

5.2.2 Colour, patterns

All colour, patterns and material are provisional and will be verified by architect.

5.2.3 Structure and surfaces

The contractor to ensure that structure and surfaces are properly cured and dried and covered against weather before commencement of wall and floor finishing, etc. All surfaces to be textured (or smoothed down) and levelled according to manufacturer's specifications for applicable final finishes.

FL Floors

FL-001 Concrete wood float

FL-002 Concrete power float

FL-003 Screed (with fall as necessary)

FL-004 Epoxy flooring

FL-005 300X300mm Ceramic Tiles

FL-006 Vinyl Tiles

Supply and fix 1.6mm 1 2.0mm 1 2.5mm thick x 300mm x 300mm FLOORflex® semi-flexible vinyl tiles manufactured in accordance with SANS 581 and laid in FloorworX No. 62 acrylic adhesive which has been spread using a trowel fitted with an A2 notched blade at a rate of between 5.5m² and 6.5m² per litre on a previously prepared Class 1 sub-floor in accordance with SANS 10070, using a reliable Self-Leveller when required, including all cutting and waste. The flooring must be rolled in both directions with an articulated 68kg three-sectional roller immediately after it has been laid into the adhesive. The newly laid floor must, after 48 hours, be stripped using FloorworX Stripper, scrubbed using a diluted solution of FloorworX Rinse and then sealed with three coats of FloorworX Silk Matt or Gloss Sealer. [OR EQAUL APPROVED].

FL-007 Vinyl Sheeting:

Supply and fix 2.0mm 1 2.5mm thick x 1.2m wide Superflex fully-flexible vinyl sheeting, manufactured in accordance with SANS 786 and Laid in FloorworX No. 62 acrylic adhesive which has been spread using a trowel fitted with an A2 notched blade at a rate of between 5.5m² and 6.5m² per Litre or FloorworX No. 71 contact adhesive spread using a flat trowel, brush or paint roller at a rate of approximately 3,5m² per litre (single surface application), applied to both the sheeting and the previously prepared class 1 sub-floor in accordance with SANS 10070, using a reliable Self-Leveller when required, including all cutting and waste. The sheeting must be rolled in both directions with an articulated 68kg three-sectional roller immediately after it has been laid into the adhesive. Joins must be butted, grooved and heat welded using a FloorworX Welding Rod, ensuring that the welding rod bonds to more than 70% of the sheet thickness. The newly laid floor must, after 48 hours, be stripped using FloorworX Stripper, scrubbed using a diluted solution of FloorworX Rinse and then seal with three coats of FloorworX Silk Matt or Gloss Sealer. [OR EQAUL APPROVED].

FL-008 Aluminium straight edge trim

FL-009 Aluminium dividing strip between different floor finishes

FL-010 Paving

SK Skirtings

SK-001 100mm Tile skirting with 10mm aluminium edge strip

SK-002 Vynaflex, semi-ridged PVC skirting 0482 as per "Gerglor" (or equal approved)

SK-003 Power skirting (see electrical engineers' drawings)

SK-004 Timber skirting, prepare and paint semi-matt enamel. Colour as per the architect

SK-005 No skirting, wall to floor junction neatly struck off

WL Walls

WL-001 One coat cement plaster

WL-002 Two coats cement plaster

WL-003 Face brick

WL-004 Off-shutter concrete

WL-005 200x200mm Wall tiling

P Paint Works

Only "Dulux" or EQUAL APPROVED paint shall be permitted. Specialist Paint specification to be used as final guide for all paint work to be done in collaboration with guidelines and specialist site inspections to ensure guarantees and warranties as prescribed by manufacturer.

P.1 Preparation work to existing surfaces

All walls to be high pressure water cleaned at 180 - 220 bar operating pressure using a rotating nozzle to remove all surface contamination, loose and flaking paint and any chalky residue as well as opening cracks or point out suspect plaster. Remove any remaining loose, flaking paint from the surface with a sharp paint scraper and firm hand pressure. It is not necessary to remove well-bonded layers of paint. Crosshatch tests should be done on areas where the adhesion of paint is suspect. Feather edges of tightly bonded paint with rough to medium grit paper to smooth them off and provide an even surface without repair witnesses. All V-Joints and/or Expansion Joints need to be inspected and remediated before painting can commence. All weep holes need to be inspected and repaired (where applicable) before painting can commence. 25mm each side, and with 50mm end-laps, and apply one saturation coat pure acrylic finished smooth. P-001 New Work/Repaint: Exterior Plastered Walls

P.2 Existing External Surfaces:

P-001

Substrate: existing External vertical walls Where moisture levels are not exceeding 12%
Crosshatch tests should be done on areas where the adhesion of paint is suspect.

Product:

Primer: One coat Dulux trade alkali resistant plaster primer (patching)

Topcoat: Two coats Dulux Wallguard.

Note: Chalky surfaces require a full coat of primer.

P-002

Substrate: Existing external walls – walls showing signs of moisture ingress and rising lateral damp up to 1.2m from ground level where moisture levels are above 12% but not exceeding 50%. Crosshatch tests should be done on areas where the adhesion of paint is suspect.

Product:

Primer: Two coats Dulux Dampshield applied to a minimum total dry film thickness of 100 microns.

Topcoat: Two coats Dulux Wallguard.

P-003

Substrate: Existing external walls with map crazed cracking where moisture levels are not exceeding 12%. Crosshatch tests should be done on areas where the adhesion of paint is suspect.

Product:

Primer: One coat Dulux trade alkali resistant plaster primer (patching).

Intermediate Coat: Two coats Dulux Rainshield applied to a minimum total dry film thickness of 600 microns.

Topcoat: Two coats Dulux Wallguard.

Note: Chalky surfaces require a full coat of primer.

P-004

Substrate: Existing external horizontal/sloping walls where moisture levels are not exceeding 12%. Waterproofing: Horizontal / sloping surfaces -Application method of Dulux Rainshield: brush.

Product:

Primer: One coat Dulux trade alkali resistant plaster primer (full coat).

Intermediate coat: Two to three coats Dulux Rainshield applied to a minimum total dry film thickness of 600 microns.

Topcoat: two coats Dulux Wallguard.

P-005

Substrate: Existing external ceilings and soffits where moisture levels are not exceeding 12% to be considered a maintenance item.

Product:

Primer: One coat Dulux trade alkali resistant plaster primer (patching).

Topcoat: Two coats Dulux trade 65 matt PVA.

P-006

Substrate: Existing external mild steel surfaces.

Note: Surfaces that are rusted beyond repair must be replaced.

Product:

Primer: One coat Dulux primer for steel (patching).

Intermediate coat: One coat Dulux trade universal undercoat (full coat).

Topcoat: Two coats Dulux Pearl glo waterbased enamel.

P-007

Substrate: Existing external galvanised steel surfaces.

Note: surfaces that are rusted beyond repair must be replaced.

Product:

Primer: One coat Dulux primer for galvanised iron (patching).

Intermediate Coat: One coat Dulux trade universal undercoat (full coat).

Topcoat: Two coats Dulux Pearl glo waterbased enamel.

P-008

Substrate: External fibre cement and Nutec surfaces where moisture levels are not exceeding 12% to be considered a maintenance item.

Product:

Primer: One coat Dulux trade alkali resistant plaster primer (patching).

Topcoat: Two coats Dulux trade 65 matt PVA.

P-009

Substrate: External timber – to be treated. To be considered a maintenance item.

Product: Two coats Dulux Woodguard Timbapreservative.

P-010

Substrate: External timber – to be painted.

To be considered a maintenance item. Rotten timber must be replaced.

Product:

Primer: One coat Dulux primer for wood (patching).

Intermediate coat: One coat Dulux trade universal undercoat (full coat).

Topcoat: Two coats Dulux Pearl glo waterbased enamel.

P-011

Substrate: Existing external Roadmarkings to be considered a maintenance item.

Product: One coat Dulux Albertono solvent-based road marking paint.

P.3 Existing Internal Surfaces

P-012

Existing internal walls where moisture levels are not exceeding 12%.

Product:

Primer: One coat Dulux trade Ecosure plaster primer (patching).

Topcoat: Two coats Dulux trade 100 lowsheen.

P-013

Substrate: Existing internal walls - previously painted with enamel where moisture levels are not exceeding 12%.

Product: Primer: one coat Dulux trade ecosure plaster primer (patching).
Intermediate coat: one coat Dulux trade universal undercoat (full coat).
Topcoat: Two coats Dulux trade 100 lowsheen.

P-014

Substrate: Existing internal wet area walls and ceilings bathrooms / kitchens where moisture levels are not exceeding 12%.

Product:
Primer: one coat Dulux Ecosure plaster primer (patching).
Topcoat: two coats Dulux trade Pearl glo non-drip enamel.

P-015

Substrate: Existing internal wet area walls and ceilings - previously painted with enamel bathrooms / kitchens where moisture levels are not exceeding 12%.

Product:
Primer: One coat Dulux Ecosure plaster primer (patching).
Intermediate coat: One coat Dulux trade universal undercoat (full coat).
Topcoat: Two coats Dulux trade Pearl glo non-drip enamel.

P-016

Substrate: Existing internal ceilings and soffits where moisture levels are not exceeding 12%. To be considered a maintenance item.

Product:
Primer: one coat Dulux ecosure plaster primer (patching)
Topcoat: two coats Dulux trade 65 matt PVA.

P-017

Substrate: Existing internal timber – to be painted. To be considered a maintenance item.

Product:
Primer: one coat Dulux trade primer for wood (patching).
Intermediate coat: one coat Dulux trade universal undercoat (full coat).
Topcoat: two coats Dulux Pearl glo waterbased enamel.

P-018

Substrate: Existing internal timber – to be varnished. To be considered a maintenance item.

Product: Two coats Dulux Woodgard interior/exterior Timbavarnish.

P-019

Substrate: Existing internal mild steel surfaces

Note: surfaces that are rusted beyond repair must be replaced.

Product:

Primer: One coat Dulux primer for steel (patching).

Intermediate coat: One coat Dulux trade universal undercoat (full coat).

Topcoat: Two coats Dulux Pearl glo waterbased enamel.

P-020

Substrate: Existing internal galvanised iron. Note: surfaces that are rusted beyond repair must be replaced.

Product:

Primer: One coat Dulux trade primer for galvanised iron (patching).

Intermediate coat: One coat Dulux trade universal undercoat (full coat).

Topcoat: two coats Dulux Pearl glo waterbased enamel.

P.4 New External Surfaces

P-021

Substrate: New external walls (moisture content >12% <30% - primer only).

Product:

Primer: One coat Dulux trade plaster primer moisture tolerant (full coat).

Topcoat: Two coats Dulux Wallguard. Please note moisture content not to exceed 30% when applying the Dulux trade plaster primer moisture tolerant.

Moisture content not to exceed 12% when applying the Dulux topcoat.

Very important:

Dulux trade plaster primer moisture tolerant is not designed to withstand natural weathering. it should be over coated in 14 days.

P-022

Substrate: New external sloping and horizontal surfaces (moisture content >12% <30% - primer only).

Product:

Primer: One coat Dulux trade plaster primer moisture tolerant (full coat)

Intermediate coat: Two to three coats Dulux Rainshield applied to a minimum total dry film thickness of 600 microns.

Topcoat: Two coats Dulux Wallguard.

Please Note:

Moisture content not to exceed 30% when applying the Dulux Trade Plaster Primer Moisture Tolerant. Moisture content not to exceed 12% when applying the Dulux Topcoat.

Very Important: Dulux Trade Plaster Primer Moisture Tolerant is not designed to withstand

P-023

Substrate: New external ceilings and soffits. To be considered a maintenance item.

Product:

Primer: One coat Dulux trade alkali resistant plaster primer (full coat)

Topcoat: Two coats Dulux trade 65 matt PVA.

P-024

Substrate: New external mild steel to be painted (pre-primed).

Product:

Primer: One coat Dulux trade steel primer (patching).

Intermediate coat: One coat Dulux trade universal undercoat (full coat).

Topcoat: Two coats Dulux Pearl glo waterbased enamel.

P-025

Substrate: New external galvanised iron to be painted.

Product:

Primer: One coat Dulux trade primer for galvanised iron (full coat).

Topcoat: Two coats Dulux Pearl glo waterbased enamel.

P-026

Substrate: External timber to be painted. To be considered a maintenance item.

Product:

Primer: One coat Dulux trade primer for wood (full coat).

Intermediate coat: One coat Dulux trade universal undercoat (full coat).

Topcoat: Two coats Dulux Pearl glo waterbased enamel.

P-027

Substrate: External timber to be varnished. To be considered a maintenance item.

Product: Three coats Dulux Woodgard interior/ exterior Timbavarnish.

P-028

Substrate: External timber to be treated. To be considered a maintenance item.

Product: Three coats Dulux Woodgard interior/ exterior Timbavarnish.

P-029

Substrate: External fibre cement and nu-tec surfaces where moisture levels are not exceeding 12%. To be considered a maintenance item.

Product:

Primer: One coat Dulux trade alkali resistant plaster primer (full coat).

Topcoat: Two coats Dulux wallguard.

P-030

Substrate: New external Roadmarkings. To be considered a maintenance item.

Product: One coat Dulux Albertono solvent-based road marking paint.

P.4 New Internal Surfaces

P-031

Substrate: New internal walls where moisture levels are not exceeding 12%.

Product:

Primer: One coat Dulux trade ecosure plaster primer (full coat).

Topcoat: Two coats Dulux trade 100 lowsheen.

P-032

Substrate: New internal wet area walls and ceilings - bathrooms / kitchens. where moisture levels are not exceeding 12%.

Product:

Primer: One coat Dulux trade ecosure plaster primer (full coat).

Topcoat: Two coats Dulux Pearlglo non-drip enamel.

P-033

New internal ceilings and soffits where moisture levels are not exceeding 12%. To be considered a maintenance item.

Primer: One coat Dulux trade ecosure plaster primer (full coat).

Topcoat: Two coats Dulux trade 65 matt PVA.

P-034

Substrate: New internal timber – to be painted .to be considered a maintenance item.

Product:

Primer: One coat Dulux primer for wood (full coat).

Intermediate coat: One coat dulux trade universal undercoat (full coat).

Topcoat: Two coats Dulux Pearlglo waterbased enamel.

P-035

Substrate: New internal mild steel surfaces (pre-primed).

Product:

Primer: One coat Dulux primer for steel (patching).

Intermediate coat: One coat Dulux trade universal undercoat (full coat).

Topcoat: Two coats Dulux Pearlglo waterbased enamel.

P-036

Substrate: New internal galvanised iron surfaces.

Primer: One coat Dulux primer for steel (full coat).

Topcoat: Two coats Dulux Pearl glo waterbased enamel.

CL Internal sills

CL-001 As walls

CL-002 To match wall tiles with a KIRK MARKETING M-TRIM PVC round edge tile 7mm size (depth) (or equal approved)
Colour: White (PEE01)
Trim Code: PRE070

CL-003 Fibre cement Internal windowsill installed and painted as per manufacture's specification.

CR Cornice

CR-001 16x16mm treated pine quarter round to be fixed to ceiling and wall. To be painted white.

CR-002 Upper Edge Cove Polystyrene Cornice (2000 x 60 x 60mm) fixed to wall and ceiling. To be painted white.

CR-003 No Cornices

CG Ceilings

CG-001 Everite Nutec (or equal approved) 6mm thick plain ceiling boards, manufactured in accordance with SANS 9001:2000 carrying SANS 803:2005 mark, fixed to 38x38mm SAP timber branderling at 600mm c/c using 32x2,5mm serrated ceiling nails at 150mm c/c, minimum of 12mm from edge of board. All joints to be covered using H-profile steel jointing strips, all in accordance with the manufacturer's recommendations. Ceiling to be painted white.

CG-002 Off shutter concrete soffit

CG-003 No ceiling

6. SANITARYWARE (Separate)

7. JOINERY WORK: GENERAL

7.1 Decorative wood veneer

Where decorative wood veneer is specified, it should be as oak of a high quality without any defects and the wood grain in approved direction on wood particle board.

Where decorative wood veneer is prescribed on one side only, e.g. for cupboard/shelf backing against a wall, the backing should be commercially veneered should the stability of the board demand it.

7.2 Melamine Laminate

1,2mm Thick Formica (or equal approved) High Pressure Laminate as supplied by PG Bison, laminated onto wood particle board where indicated on drawings with backing if required by manufacturer. Colour to architects' specification.

Formica joints on worktops must be kept to minimum and single whole sheets to be used where possible. Formica (or equal approved) joints are not to occur over joints in backing board. Formica is to butt join precisely with no cover strips. Joint positions to be shown and shop drawings and communicated to architect prior to cut and installation.

7.3 Edging

All decorative wood veneer panels are to be edged with a minimum of 6mm solid hardwood edging strip, - sanded to slightly rounded corners.

All melamine finished panels to be edged with patent and 2mm PVC impact edging to match.

7.4 Cupboard shelves

All joining of fixed shelves and dividers on sides should be grooved on sides without grooves showing on the face of the shelf. (Example to be submitted)

All adjustable shelves are to have holes drilled into sides with metal hole sleeves and brass pegs or PVC adjustable shelf channels recessed into cupboard sides.
(Example to be submitted)

7.5 Horizontal surfaces

Counter worktops to be as per detail drawings.

7.6 Vertical surfaces

All vertical sides and dividers may be 16mm melamine finished wood particle board or decorative wood veneer finish as indicated.

7.7 Backsides

Backsides of units standing against a wall are to be made of 3.2mm tempered hardboard.

7.8 Drawer construction

If decorative veneer is used only on the visible side, a suitable alternative should be used behind. All sides, fronts, and backs of drawers to be mortise jointed. Drawer sliding mechanism to be *Lautenschlager* (or equal approved) or telescopic type (example to be submitted).

7.9 Stainless steel sinks

The stainless-steel sinks are to be supplied by the main contractor and built into the units by the direct sub-contractor - all cut edges of Formica (or equal approved) are to be sealed against water penetration. Insert silicon sealant between sink edge and work top.

7.10 Stainless steel framework

Where s.s. framework is required, it should be 75mm Ø X 1.6mm tube profile with top and base plates pre-drilled for fixing, all 304 (18/10) quality. In accordance to structural engineers specification.

7.11 Cupboard door hinges (standard)

Must be fixed as per manufacturers specifications without any pvc components.

7.12 Cover panels

All wood or fibre cement cover panels, etc. To be properly prepared for finish as specified. Edges to be sanded to regular smooth blunt corners.

7.13 Measurements on site

All measurements of units to be placed in between or against walls should be checked on site.

No claims will be met should the above be neglected.

All positions of ventilation grates, sockets and light switches must be checked on site with architect and mechanical as well as electrical engineer.

8. DOMESTIC WATER SUPPLY

8.1 Water pressure

The consulting mechanical engineer or specialist supplier of brassware to ascertain that the municipal water pressure is sufficient to ensure the proper operation of any flush valve fittings and hot water cylinders and that the pipe bores are sufficient.

8.2 Main connection

Main supply stop cock and pit to be to civil and mechanical engineers' detail and specifications, positioned to architects' approval,

8.3 Depth

External water supply pipes to be minimum 600mm below ground level.

8.4 Internal pipe work chased into walls

All internal pipe work inside walls, or ducts

Hot water pipes to have ± 2mm thick plastic foam lagging before plastering.

8.5 Pressure reducing valve

All cold-water branches to toilets, basins and standpipes to be from connection between pressure reducing valve and main supply

8.6 Supply to H.W.C.

Main water supply and connection to pressure type hot water cylinder to be at least 22mm ø copper pipe.

8.7 Supply from H.W.C.

Main branch from hot water cylinder to be 22 ø mm copper pipe. Branches to sanitary fittings 15 ø copper pipe. System to be balanced pressure design

8.8 Stop cocks

Stop cocks to be on cold side of hot water cylinder and at every group of fittings - i.e. one per branch to enable the group to be isolated without affecting water circulation to the rest of the building.

Exposed stop cocks to be of chromium plate type as “Cobra 138 star”. Hidden stop cocks (in shafts or recessed boxes as detailed) to be as “Cobra 13” 1 or “Cobra 1003/125” gate valve (natural brass)(or equal approved).

8.9 Standpipes

Standpipes 15 mm ø “Cobra 1081k” with 15mm hosepipe screw attachment

Water taps in yards to be placed over drainage positions such as channels and gulleys.

9. FIRE FIGHTING EQUIPMENT (TO BE DISCUSSED WITH CLIENT) ALL AS PER MECHANICAL ENGINEER AND AS PER APPROVED RATIONAL FIRE DESIGN

9.1 Extinguisher / CO²

Provide 4.5kg co² fire extinguisher on patent hook on ± 200 x 750 x 22 rebated and painted hardwood backing 4X screwed to wall.

9.2 Extinguisher / D.P.C.

Provide 4,5 or 9kg (as per drawing) dry chemical powder extinguisher on backing as above.

9.3 Fire hose reels

Provide fire hose reels complying with requirements in **SABS 543** and local authority's approval.

9.4 Fire water supply

Provide supply with pipe sizing, water meter, isolating valve, flow pressure, flow rate etc. to national building regulations of **SANS 10400** requirements and local authorities approval. Fire water supply to be independent from domestic water supply, separated at municipal connection.

9.5 Fire detection

A fire detection system is to be provided in accordance with the local authority and consulting electrical engineer's requirements.

10. SOILWATER DRAINAGE

10.1 Municipal connection

All soil pipes from main building to municipal connections to be according to the specification & approval of the consulting civil engineers

10.2 Layouts

Drainage to be done in accordance with architects' / engineers' layout plans.

10.3 Waste pipes

All waste water pipes from sanitary fittings to gulleys, and stubstack to be 40 ø mm UPVC unless otherwise indicated on drawings and to fall 1/60 minimum.

10.4 Soil pipes

All soil water drainage pipes to fall 1/60 minimum.

10.5 Depth

All underground pipe work at invert level to be minimum 550mm below surface unless otherwise specified.

10.6 Below floors

All drainage pipe work below ground floor concrete floors to be beneath the damp proof membrane and cut into compacted fill according to consulting civil and structural engineers' specifications.

10.7 Stub stacks & vent valves

All stubstacks with release valves to be to **SABS** standards and local authority's approval. Stubstacks, ventilation valves and ventilation pipes to be placed in recessed, hidden, identified and protected positions as per architects' approval.

10.8 Grease traps

All wash areas such as for air-conditioning filters, car wash, etc. To drain into the soil water system via approved patent grease interceptor traps.

10.9 Pipe penetrations

Pipe penetrations through floors to be sleeved through concrete and sealed airtight and fireproof for full thickness of floor slab.

Pipe penetrations through brick walls to be sealed with mortar for full thickness of walls

11. **STORMWATER DRAINAGE**

11.1 Stormwater layout

Provide external stormwater drainage to civil engineer's drawings.

The main contractor is to establish invert levels on site to relate to existing stormwater system. Main pipes to be minimum 150 ø mm 1/100 fall to municipal connection at boundary. All to approval of consulting civil engineer

11.2 Layouts

Follow architects' roof and site layout plans.

11.3 Concrete channels

Rainwater channels and pipes to have minimum 1/100 fall.

11.4 Dished channels

Recessed paving rainwater channels to have minimum 1/100 fall ± 450mm wide and 30mm deep (see consulting civil engineer drawings)

11.5 Gratings

All gratings over channels to be hot dip galvanized steel removable and laid in hot dip galvanized steel recesses.

11.6 Catch pits

All rainwater downpipes are to terminate into catch pits with removable cover plates to consulting civil engineers' specifications.

11.7 Condensate drainage

Condensate water from air-conditioning units to be either scattered by specialist's "*slinger*" (**or equal approved**) system or drained into built in condensate pipes which may drain into the stormwater system.

12. IRONMONGERY (separate)

13. SIGNAGE SPECIFICATION (separate)

14. ELECTRICAL REQUIREMENTS

EL-001

Electrical specifications are subject to those of the consultant electrical engineer.

EL- 002

Underground electrical cabling to be covered by at least 600 deep compacted sand.

EL-003

Main building contractor to ensure that all electrical and telephone sleeves are installed before laying floors and paving.

EL-004

Surface mounted conduits and boxes to be installed after plastering, screeding and face brickwork and to be of galvanized steel to electrical consultant's specifications.

EL-005

All conduiting to be installed either vertically or horizontally.

EL- 006

Electrical cover plates, distribution board doors, etc. To be made of powder epoxy finished steel or like electrical consultant's specifications.

EL-007

Power points and cable racks to be accurately positioned according to approved measurements on drawings and coordinated with architects' drawings.

15. MECHANICAL REQUIREMENTS

Mech-001

Mechanical specifications are subject to those of the consultant mechanical engineer.

Mech-002

Mechanical equipment to be installed to approved layout / workshop drawings and coordinated with architects' drawings.

16. TILE SPECIFICATION

16.1 Back Splash (Wall Tiles)

16.2 Substrate

The substrate must be clean, dry, firm, and at least 4 weeks old.

Allow all new concrete work and screeds to cure for at least 4 weeks before proceeding. Ensure that all concrete surfaces to be tiled are clean and free of all traces of shutter release and curing agents, laitance, and any other surface contaminants, preferable by scabbling or sandblasting. Ensure that the concrete faces are entirely free of dust and loose particles and are dry.

16.3 Adhesive system

Apply TAL PROFESSIONAL (or equal approved) to the background using a notched trowel.

Where an adhesive is required, it is imperative that there is a solid bed of adhesive beneath each tile. The use of a notched TAL FLOOR TROWEL (or equal approved) is recommended.

At no time spread more adhesive than can be tiled onto in 10-15 minutes. Depending on atmospheric conditions, this will normally be around one square meter. This prevents the adhesive drying before applying the tiles.

Bed dry tiles (do not soak) firmly into the wet adhesive with a twisting action to ensure full contact between the background, tiles, and adhesive. Tiles should be well tapped home with a rubber mallet or the wooden handle of a trowel. It is sound practice to remove the occasional tile to ensure that good contact has been achieved.

When using heavily lugged tiles, or tiles with a very irregular back profile, it is good practice to butter the back of each tile, ensuring that the grooves or dovetails are filled with adhesive.

Clean off any surplus adhesive remaining on the face of the tiles and between the joints with a damp sponge before the adhesive dries.

Never butt joint tiles. Joints are required to allow the individual tiles to move with respect to each other and thus avoid a compressive stress build-up. They are also required as vents for the tile adhesive to cure. The joints between wall tiles must be a minimum of 1,5mm wide, and a minimum of 5mm wide between floor tiles (where applicable).

Pot life of the adhesive will vary with climatic conditions. Under no circumstances should adhesive that has been left standing for too long be reconstituted by adding more liquid.

Do not tile over structural, expansion or cold joints in the background. These joints must be extended through the various layers to the surface.

16.4 Grouting

Grouting must not be carried out until sufficient bond has developed between the bedding mix and the tiles to preclude disturbance of the tiles during the grouting operation. Grouting should therefore not be carried out for 1-3 days after completion of laying, depending on atmospheric conditions and different tiling situations. Fully vitrified tiles applied over dense substrates with very low rates of moisture absorption may require longer periods.

Use coloured grouting as per finishes schedule TAL WALL & FLOOR GROUT (or equal approved) for filling tile joints up to 8mm.

16.5 Warning

Care must be taken to clean the grout off the tile face before it hardens completely. This is especially important when a latex additive such as TAL BOND (or equal approved) has been used.

A sample of the tiles to be used should be tested beforehand to ensure that no grout is absorbed through the glaze, or into the tile body, causing permanent staining of the tiles.

16.6 Movement joints

Movement joints should be located in both directions at maximum 5-meter centres for interior applications, and 3 metre centres for exterior applications.

Movement joints should also be made within 1 metre of all horizontal and vertical corners, against obstructions fixed to the structural background and over all discontinuities in building materials e.g., at interfaces of concrete and brickwork. In addition, movement joints must be located around the perimeter of all floors and around any fixtures protruding through the tiles to the surface such as columns or stairs.

The joints should be at least 5mm wide and extend through the tile and adhesive layers. All structural expansion joints in the background must be extended through the tiles to the surface. The full width of the re structural joints must be extended through the tiles to the surface.

Where practical, the bulk of the depth of the movement joint can be filled with an inexpensive, compressive material, such as polyethylene foam strips.

Seal the joint using a suitable resilient sealant in accordance with the manufacturer's instructions. It is important that the joint sealant bonds only to the sides of the movement joint.

For the key requirements common to all tiling situations, please refer to **SABS 0107-1996** code of practice for the design and installation of tiling.

16.7 Setting out

Always set out from a centre line with equal cuttings on both ends. All as per architect's drawings.