ANNEXURE C

SKYWARD HOUSING

SPECIFICATION FOR MONTANA x 151

Index

1. Thornbury Gardens

1.1 General
1.2 Earthworks
1.3 Concrete formwork and Reinforcement
1.4 Waterproofing
1.5 Paving
1.6 In Situ Concrete Aprons
1.7 Superstructure
1.8 Plaster
1.9 Roof Coverings & Ceilings
1.10 Doors
1.11 Ironmongery
1.12 Windows
1.13 Burglar Bars
1.14 Glazing
1.15 Floor & Wall Coverings
1.16 Paint
1.17 Electrical Installation
1.18 Kitchen Cupboards & Fittings
1.19 Built-in Cupboards
1.20 Bathroom fittings
1.21 External Works

Thornbury Gardens

1.1 General

- Any deviation from the specifications must be approved by the Project Manager before any work can commence.
- Upon completion of the works, dig up concrete or mortar mixing platforms, and clean the site of all surface and buried rubble and rake to ensure level and clean site.
- Use methods that keep dust, noise and vibration to a minimum level.
- All work must be carried out in accordance to the National Building Regulations.
- All materials must comply with SABS.
- At completion of works the following documentation must be handed over to the Project Manager, before Practical Completion will be issued:

    - A Certificate of stability from the appointed Registered Structural Engineer upon completion for the structural aspects of the project
    - Engineers structural detail drawings once the said drawings have been completed
    - Plumbing Compliance Certificate
    - A Soil Poisoning Certificate from a recognized Pest Control company upon completion of the soil poisoning
    - Electrical Certificate of Compliance
    - Roof Truss Manufacturers Certificate, issued by an approved specialist firm who must have a valid certificate of competence of the Institute of Timber Construction
    - Roof design by registered structural engineer, in case the case of on-site bolted timber roof trusses
    - All manuals, remote controls and guarantees of appliances

1.2 Earthworks

1.2.1. Site clearance

- Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc.

- No trees may be removed without prior consultation with the Project Manager

- It is the responsibility of the contractor to obtain permits to remove protected vegetation

1.2.2. Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 98% Mod AASHTO density and approved as suitable by registered civil engineer

- Backfilling to trenches, holes, etc.

1.2.3. Earth filling supplied by the contractor, compacted to 98% Mod AASHTO density and approved as suitable by registered civil engineer

- Under floors, steps, paving's, etc.

1.2.4. Compaction of surfaces

- Compaction of ground surface under floors etc., including breaking down oversize material, adding suitable material where necessary and compacting to 98% Mod AASHTO density

- Vibrating rollers are recommended when compacting soils and a maximum thickness of loose layer should not exceed 200mm.

- Backfilling will be in accordance to the NHBRC and free of organic material

1.2.5. Soil insecticide (No allowance made for)

- Under floors etc., including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming

- To bottoms and sides of trenches etc.

1.3 Concrete, formwork and reinforcement

1.3.1. Cost of tests

- The costs of making, storing and testing of concrete test cubes as required under clause 7 “Tests” of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the project manager. The testing shall be undertaken by an independent firm or institution nominated by the contractor and to the approval of the project manager. (Test cubes are measured separately). Independent tests should be done for each residential unit.

1.3.2. Cement

- Use common cement to comply with SANS 50197-1, strength class 32.5N or higher

- Cement must be SABS–mark bearing. Type composition and strength of the cement must be shown on the bag, or on the delivery slip of bulk cement.

1.3.3. Aggregates

- Natural, crushed or blended sand for use in concrete to comply with SANS 1083, evenly graded, with the coarsest sizes passing the 4.75mm sieve.

- Stone for use in concrete to comply with SANS 1083, of 19mm single-size when mechanically mixed, and 13.2mm when hand-mixed. Stone size should not exceed clearance between reinforcement and formwork

- Supply aggregate test results if required by the Project Manager

- Keep grading of aggregates constant throughout the contract. Store aggregates separately to prevent contamination.

- The use of Manganese rock is prohibited for any construction work.

1.3.4. Foundations

- The foundation will be in accordance with the final approved plan and will be to the satisfaction of the appointed registered structural engineer.
- Foundations will be Raft type all to engineer's specification.
- All foundations excavations will be level and square and in accordance with the relevant NHBRC requirements.

1.3.5. Floors

- Use min. 25Mpa concrete for surface beds to be covered with a screed. Do not trowel the surface, so as to provide a key for the screed.
- Use min. 25Mpa concrete for direct-finished one course concrete domestic floors. Use the delayed trowelling technique to finish the surface.
- Cast floors to 85mm thickness, or as specified.
- Unfinished floor levels will be a minimum of 170mm above natural ground level.
- Ensure continued hydration by curing the concrete by ponding with water. Cure for 7 days, and longer when the ambient temperature falls below 10ºC. Building work may start on foundations in earth trenches the day after casting.
- First floor slab will be a Pre-Fabricated Echo or similar approved by Project Manager, all in accordance to Engineer's and Manufacturer's design.

1.4 Waterproofing

1.4.1. Walls

- Use 375 micron black embossed polyolefin damp-proof course complying with SANS 952, type B.
- Lay damp-proof course in un-jointed lengths where possible and with full corner laps over full width of wall, level with the top of floors and not less

than 150mm above finished ground level, and under copings and in parapet walls.

1.4.2. Window sills

- Use 375 micron black embossed polyolefin damp-proof course complying with SANS 952, type B.

- Lay damp-proof course under jointed window sills and tuck in under window profiles.

1.4.3. Surface beds

- Use 250 micron smooth green polyolefin membrane complying with SANS 952, type C.

- Lay damp-proof membrane under concrete surface beds or concrete floors. Fold membrane up against the foundation walls.

- Lay damp-proof membrane in the largest practical sizes with 200mm laps. Seal laps according to the manufacturer's instructions.

1.4.4. Damp proofing of walls and floors

- Stitch bond polyester membrane – To shower walls 300mm high, or

- MCC Hyseal slurry – To shower walls 300mm high

- Derbigum waterproofing to all exposed slabs, balconies and parapet walls. Installation done to manufacturer's requirements and by approved contractor. Waterproofing guarantee must be supplied to the Project Manager upon completion.

1.5 Paving

- 60mm thick "Concor" rectangular or similar approved by Project Manager, including un-reinforced concrete edging all around. Suitable compaction and preparation in accordance with engineers specification

- Paving to all Walkways and around Apartment blocks.

1.6 In Situ Concrete Aprons (No allowance made)

- Use grade 20Mpa concrete. Cast apron to 80mm thickness with a 150mm x 150mm edge.

- Cast aprons to a minimum fall of 1:100, sloping away from the structure, 1m wide, at roof overhangs.

- Brush the surface, after the concrete has stiffened sufficiently, with a stiff brush or similar to leave a coarse surface.

- Form movement joints at 3.5m maximum centres in both directions. Round off edges of panels.

1.7 Superstructure

1.7.1. Brick walls

- Concrete bricks and blocks complying with SANS 1215, compressive strength of not less than 7Mpa. Supplier to submit these test results for every batch.

- Cavity walls will have a minimum thickness of 270mm, one brick walls a minimum thickness of 220mm and half brick walls a minimum thickness of 110mm and bedded in 1:5 mortar.

1.7.2. Cavity walls

- Tie the two masonry leaves with metal wall ties spaced in a staggered pattern at 2.5 wall ties per m^2

- Fill the cavity in foundation walling with 10Mpa concrete

- Close the cavity at the top of the wall with two courses of solid brickwork. Return the inner leaf to stop unbounded against the outer leaf at sills, reveals and lintels, with a damp proof course built into the joint formed between the return and the external leaf

- Form weep holes in the outer leaf of external cavity walls at floor and lintel level by leaving the perpendicular joint open at centres not exceeding 1m, in the first course above stepped dpc's, or in the second course below single dpc's. Keep the cavity free of mortar droppings

1.7.3. Brickwork reinforcement

- Wire brick reinforcement must be of hard drawn mild steel comprising two 2.8mm diameter main wires spaced 75mm apart and 2.5mm cross wires spaced not exceeding 300mm, welded to main wires.

- Reinforcement in load bearing walls to be according to engineers drawings and specifications

1.7.4. Lintels

- Construct lintels according to NHBRC Home Building Manual 3.12

- Concrete lintels will be provided on top of windows and doors.

- Pre-stressed concrete lintels for use in composite action with masonry work must comply with SANS 1504, for exposed work. Set pre-stressed concrete lintels in mortar with minimum bearing length of 150mm when supporting masonry only. When supporting roof trusses, bearing length must be 150mm for spans <1.5m, or 250mm for spans 1.5m – 2.5m, or 350mm for spans >2.5m. Clean and wet pre-stressed lintels before receiving mortar.

- Ensure side cover over reinforcement is at least 30mm

- Support lintels adequately, support spans not exceeding 1m, for a period of not less than 7 days after completion.

1.7.5. Rodent prevention

- Plaster between brickwork and underside of roof sheeting. Ensure no gaps between roof sheeting and beam filling.

1.8 Plaster

- Plasterwork will comply with the requirements of the NHBRC and SANS 2001 EM1.

- Internal plaster will be smooth and even plaster. Internal window sills will be plastered.

- External plaster will be steel floated and sponge finished, plastered to 170mm under natural ground level. External window sills will be plastered.

- Where bagged finish is specified, remove sharp projections and spread the mix over the surface with a rolled-up sack until all holes and cracks have been filled.

1.9 Roof Coverings & Ceilings

- Trusses will be according to Engineer designs. Covering will be concrete roof tiles and shall comply with the requirements of SANS 542.

- Engineers roof certificate are included. A Mitek certificate is also required and will be provided.

- Allow for bargeboard and fascia's

1.9.1. Ceiling board

- 6.4mm "Rhino" gypsum plasterboard ceiling skim plastered, fixed to battens with rust-proof counter sunk screws.

- 38 x 38mm sawn softwood brandering at 450mm centres.

1.9.2. Trapdoor

- Clear opening must be at least 650 x 650mm. Unit to be approved by Project manager.

1.9.3. Cornices

- 76 x 76 x 6.4 Rhino gypsum plasterboard cornices including fixing

1.9.4. Insulation

- 100mm Isotherm mineral wool blanket

1.10 Doors

1.10.1. Front, Back and Sliding door hung to uPVC frame

- Door size 880 x 2064mm high, Horizontal slat wooden door. Handle to be Victorian 6in plate

1.10.2. Internal – Hollow core door with Meranti veneer suitable for varnish both sides, hung to steel frames

- 40mm Door size 813 x 2032mm high
- Door frame must be single rebated, factory primed and supplied with hinges and striker plate.

1.10.3 Sand down and prepare surface to receive two coats Woodoc 30 on new work to be done in accordance with manufacturer's specification

- Meranti Veneer Doors

1.10.4 Shower Cubicle Doors (N/A)

- Trimatic Pivot shower door with side panel
- Shower door 900 x 1800mm high
- Side panel 900 x 1800mm high

1.11 Ironmongery

- All handles on internal doors will be satin chrome finish.
- Handles on external doors elsewhere specified.

- Internal doors will be fitted with two lever locksets.
- Union or similar approved will be used depending on availability.
- One double door cabinet and mirror is allowed for per bathroom.

1.12 Windows

- Aluplast Ideal 2000 uPVC Turn and Tilt Windows are allowed for.
- Glazing will comply with SANS 2001 CG1 regarding installation requirements. The thickness of the glass will be in accordance with SANS 10400.
- Double curtain track only for Sliding door. (Super C)
- Upon completion a glazing certificate will be supplied.
- Horizontal Blinds for windows will be allowed for.

1.13 Burglar Bars and Security Doors (Optional Extra)

- Weld bars to window frames and at every intersection. Kink bars at peg stays.
- Fix burglar bars to the inside of the windows that open outward, and to the outside of windows that open inward
- Fix burglar bars to all opening sections
- Maxidor security Doors at Front, Back and Sliding Door.

1.14 Glazing

1.14.1. 4mm Clear float Double Glazing uPVC window frames

- Panes not exceeding 0.5m²

1.14.2. 4mm Clear laminated safety Double Glazing uPVC window frames

- Panes exceeding 0.5m² and not exceeding 2m²

1.15 Floor & Wall Coverings

- All ceramic tiles will be grade 1, laid to the manufacturer's recommendations and the relevant SANS requirements

- Floor tiles will be laid with a joint size of 6mm and all tiles with a joint size of 6mm.

1.15.1. Wall Tiling

- 300 x 300mm ceramic wall tiles, by Johnson, colour (JZ-507) fixed with adhesive to walls all in accordance with manufacturers specification

- To ceiling height in bathrooms and lintel height in kitchen and sculleries.

- External tiles to be non-slip and code: VLS80352A

1.15.2. Floor Tiling

- 300 x 300mm ceramic floor tiles, by Johnson, colour (JZ-507) laid square to room, fixed with adhesive to screed and flush pointed with tinted waterproof jointing compound all in accordance with manufacturers specification

- Tiles to be laid diagonal with a tile border in large areas. To be confirmed on site.

1.15.3. Skirting's

- 75mm high tile skirting to match floor tiles.

- All doors will have doorstops

1.16 Paint – Dulux or similar approved by Project Manager

All paintwork and surface preparation to manufacturer's specification, where unclear, obtain from manufacturer a written paint specification, confirming compliance with this specification, and stating separately exceptions where the

manufacturer's specification differs from this specification. Exceptions will be accepted only with the written approval of the Project manager.

1.16.1. Plaster Board Surfaces

- Ceilings and cornices – One coat Dulux Alkali resistant plaster primer, two coats Dulux PVA

1.16.2. Wood Surfaces (No allowance made for)

- Skirting's, rails, etc. not exceeding 300mm girth – One coat oil wood primer, one coat universal undercoat and two coats Dulux paint.

1.16.3. Paintwork on plaster

- Internal Walls – One coat Dulux plaster primer and two coats Dulux paint: Colour will be specified by Project Manager

- External walls – One coat alkali resistant plaster primer and two coats Dulux paint, colour will be specified by Project Manager.

1.16.4. Metal Surfaces

- Door frames – Apply one coat Dulux undercoat and two coats Dulux paint

1.16.5. Smooth Concrete Surfaces

- Floors – Prepare surface and apply two coats Dulux Floor Paint all in accordance with manufacturers specification

1.16.6. PVC Pipes

- PVC Pipes – Prepare surface to receive one coat primer and two coats Dulux Paint on PVC Pipes not exceeding 300mm girth all in accordance with manufacturers specification

1.16.7. Fascias

- One coat alkali resistant plaster primer and two coats Dulux paint, colours: to match roof colour

1.17 Electrical installation

1.17.1. Switches and sockets

- Switches, by COBALT or similar approved by Project Manager, to comply with SANS 60669
- Sockets, by COBALT or similar approved by Project Manager, must be 3 pin 16 Amp wall switch sockets complying with SANS 164.

1.17.2. Geysers

- Sirac Hot Water System to be installed. No Geysers Allowed for per Unit.

1.17.3. Light fittings

- Internal – 240V Fibre Glass Gallery and Glass Bowl.
- External – 240V outdoor W/T by Wellglas, one at each at front and back door.
- All globes are energy saving CFL globes.

1.18 Kitchen cupboards and fittings

1.18.1. Cupboards

Layout to be confirmed by Project Manager

- Visible sides in Black Cherry, Rustenburg granite Formica tops and 180mm bar handles
- Insides and non-visible sides in white melamine
- Runners – Economy Runners
- Doors – Black Cherry doors with 2mm edging
- Standard in each kitchen:

- 1200mm with double Zink Unit
- 900mm floor Unit
- 600mm top Unit above Zink

1.18.2. Sanitary Fittings

Polished stainless steel centre double bowl, drop in sink or similar approved by Project Manager.

1.18.3. Stoves

- Compact four plate Defy stove (Black) codes to follow
- Owen- DBO461
- Hob- DHD358
- Cooker hood- DCH291

1.19 Built-in Cupboards

1.19.1. Bedroom Built-in Cupboards

- Visible sides and insides in White Melawood
- Non visible sides in white Melawood
- Handles – Bar 180mm
- Height – Up to ceiling
- Doors – White Melawood doors with 2mm edging

1.20 Bathroom fittings

1.20.1. Sanitary Fittings

- BETTA “Mirage” White vitreous China Close Coupled wash suite complete with cistern or similar approved.

- 1700 x 750mm bath by PLEXICOR model “Elegancia”, colour white, or similar approved by Project Manager (use only where installation of 1800 x 800mm bath is impossible)

- 1800 x 800mm bath by PLEXICOR model “Elegancia”, colour white, or similar approved by Project Manager

- BETTA “Trio” 3-in-1 drop-in basin, colour white (Level 2)

- BETTA “Mirage” wash basin and pedestal (Level 3-5)

1.20.2. Accessories

- One double door mirror cabinet to be allowed for per bathroom.

Prima Bella Accessories Fiorano range or similar approved by Project Manager

- Spare roll holder

- Soap dish

- Double towel rail

1.20.3. Taps, valves etc.

- Cobra “Xena” Range – basin mixer, one hole taps to all mixers to basins, baths and hand shower or similar approved by PM

- Cobra “Xena” sink mixer one hole or similar approved by PM

- Cobra “Xena” pillar tap or similar approved by PM

- Cobra “Xena” under tile taps in Kitchen or similar approved by PM:

- Washing Machine – Cold

1.20.4. Waste Unions etc.

- 32mm Basin waste union
- 40mm Bath or sink waste union

1.20.5. Traps etc.

- 40mm Deepseal “P” or “S” trap
- 40mm Brass shower trap, including stainless steel grating
- 40mm Brass bottle trap at basins

1.20.6. Sanitary Plumbing

- uPVC 50mm Waste Pipes
- uPVC 110mm Soil Pipes
- uPVC 2-way vent valves

1.20.7. Water supplies

- 22mm
  - Wall mounted External
  - Chased External
  - 22mm Class 12 Plasson water supply from water meter to house

1.21. External Works

1.21.1. Boundary wall with Palisade inserts

- Make allowance for 220mm Boundary wall with Palisade inserts at Front Wall and no Palisade inserts at Back and Side Walls.

1.21.2. Washing Line

- Make allowance for communal washing line areas.

1.21.3. Handrails and Balustrades

- Make allowance for Handrails and Balustrades at Steps and Balconies.

1.21.4. Carports

- Make allowance for one Carport per Unit.

1.21.5. Braai

- Gas Braai on Patio and Balcony will be allowed for.