KWAZULU-NATAL
DEPARTMENT OF HEALTH

INFRASTRUCTURE DEVELOPMENT
ENGINEERING ADVISORY SERVICES

POLICY DOCUMENT
FOR THE

DESIGN OF STRUCTURAL INSTALLATIONS
(TO BE USED STRICTLY AS A DESIGN GUIDE ONLY)

IMPLEMENTATION DATE: JANUARY 2006
STANDARDS COMMITTEE MEMBERS

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CODES AND SPECIFICATIONS FOR STRUCTURAL INSTALLATIONS

The complete installation must conform to the following:

- Occupational Health and Safety Act and Regulations (85 of 1993)
- Energy Code of Conduct for all Government buildings
- The Local Authority Fire and other Regulations
- R158 where applicable
- Wiring Code, South African National Standards, SANS 10142-1
- Bricks manufactured to SANS 227 standards
- All other legislation

THE PROVINCE OF KWAZULU-NATAL DEPARTMENT OF HEALTH’S STANDARD SPECIFICATIONS As IN:

- Standard Preamble to all Trades dated January 2009
- Policy Document for the Design of Electrical Installations
- Policy Document for the Design of Mechanical Installations
- Solar Water Heater (SWH) specification
- Application of Screedmaster.
- Pharmacy Specifications
- Milk Kitchens

THE PROVINCE OF KWAZULU-NATAL DEPARTMENT OF HEALTH’S STANDARD DRAWINGS:

- Ablutions for Clinics  Drwg No 6018H/01-02  July 2001
- Ambulance Shelter  Drwg No 6055H/01  October 2006
- Car-Ports Double Bays  Drwg No 6033H/01  August 2006
- Fuel Storage Bund Walling  Drwg No 12005H  September 2012
- Grease Trap  Drwg No 942-02GT  August 2001
- Guard Hut with Ablution  Drwg No 5038H  August 2005
- Helistop – Restricted  Drwg No 2017H/01_r2  December 2007
- Helistop – Un-restricted  Drwg No 2017H/02  December 2007
- Institution Entrance Signs  Drwg No 6004H-6008H  May 2005
- Laboratory  Drwg No 4036H/01-R4  January 2004
- Medical Waste / Domestic Waste  Drwg No 7027H/01/R1  December 2012
- Official Vehicle Lockup Garages  Drwg No 6019H  June 2002
- Paraplegic Toilet  Drwg No 6036H/01-02  September 2006
- Pharmacy  Drwg No 5046H  October 2005
- Pharmacy Service counter windows  Drwg No 10025H/01  December 2010
GENERAL BUILDING REQUIREMENTS

- A Schedule of accommodation must be supplied by Department of Health officials.
- Availability of water, electricity must be ascertained and a full report submitted before any construction commences. Without these basic’s the project is not to proceed.  
  Rev 7
- A Geotechnical Investigation of the site must be conducted.
- Before work commences on site, submit a notification to Department of Labour. Construction Risk Assessment, Safety, Health and Environment Plans to be in place before any work commences.
- Use of natural light and ventilation for patient care facilities is to be maximised when designing a health care facility.
- Maximisation of natural light (daylight) can be met by windows opening onto an atrium or courtyard, or a roof light, provided that privacy within the room or space is maintained. In addition, daylight may be borrowed from an adjacent room or corridor by means of glazing the wall in between provided that the adjacent room or corridor is within the same unit and privacy is maintained.
- Sluice rooms and Instrument wash up rooms must be carefully placed in order to ensure optimum infection control measures.
- General Sluice / Dirty Utility Rooms to be provided with Drawing No ……. Rev 7
- Service balconies are to be provided to all high-rise buildings to facilitate cleaning of windows and general maintenance.
- All stainless steel fittings, fixtures and equipment shall be fixed with Grade 304 stainless accessories (ie Bolts, Nuts washers etc). Rev 1
- Plant rooms should be located preferably at ground level for single story buildings or on the same level in multilevel buildings. Rev 1
- All equipment within the plant rooms shall have at least 1 metre clear working space all round. Rev 1
- No provision shall be made for dedicated gantries or crawl beams for the purpose of lifting equipment. Rev 1
- Preference shall be given to South African manufactured products. Rev 1
- Where reference is made to “or other approved” items this shall mean approval prior to tender closer. Rev 1
- Kerbing to road ways within health facilities to be Fig 8 mountable type. Rev2
- Where doors are described as having observation openings, these openings are to be of the sizes stated and glazed with 6mm safety glass. No glazing permitted to any fitting below Lock Rail (ie 1.2m high). Rev 1
• The preferred infill panels below lock rail in aluminium glazed doors and screens are Aluminium ribbed panel as “Sherline” system T29.

• All loose equipment, furniture etc to remain the property of Health or as otherwise stated. Items to be listed with their relevant bar codes if available before removal to another location.

• Provision must be made for a framed, laminated floor plan of the facility showing fire evacuation routes. This must be positioned at all strategic areas.

• The usage of Grey Water for only toilet and urinal fittings is to be used where ever possible. The painting of the water supply pipes to be as specified in the Standard Pre-ambles for all Trades.

• 900mm wide concrete aprons around all buildings. Dished channels, 600,300 split may be used in lieu of the apron.

• No internal planter boxes are to be provided inside a health facility.

• Without compromising quality, locally manufactured products are to take preference over imported products with proven new technology.

• Provision must be made for a framed, laminated floor plan of the facility showing fire evacuation routes. This must be positioned at all strategic areas.

Operation and Maintenance Manuals

The contractor shall hand over, at the completion of the works one original and two copies of the necessary operating and maintenance requirements for all plant and equipment supplied and installed by him or her as part of the works. Each copy of the operating and maintenance manual shall be separately bound in an acceptable manner, and shall contain the following data where applicable. These documents are to be handed to the Project Leader responsible for the project and the Project Leader will ensure that these documents are handed to a Department of Health Head Office official.

a) Scope of Work
b) Operating Instructions
c) Normal Operation
d) Safety Measures
e) Fault Finding Guide
f) Equipment Information
g) Schedule of Information
h) List of Spares and Agents
i) Design Data
j) As Commissioned Data
k) Maintenance Requirements
l) KZN Department of Health Service Schedules
m) Manufacturers Service Recommendations
n) Manufacturers Literature
o) Equipment Brochures
p) Proprietary Drawings, Exploded Views and Wiring Diagrams
q) As Built Drawings
r) Electrical Drawings
s) System Layouts and Schematics
t) Training Certificates

As Built Drawings

Complete sets of drawings (two electronic and three hard copies, Electronic drawings in Autocad and other documents in PDF.) of the entire project shall be included in the as built documentation. The set shall be as per “As Built Document Schedule”:

Original statutory documents are to be provided in a separate folder.

- Architectural drawings and details.
- Electrical wiring diagrams indicating all cable sizes, current ratings, fuses, control units, site cable reticulation and schematic wiring diagrams applicable to the works.
- Mechanical drawings and schematics showing all equipment, connections to the equipment and service runs installed by the Contractor, and isolating valves, etc.
- Exploded views of all equipment showing each component part adequately identified and numbered.
- The electronic records (on disk) are to be handed to the Department of Health Head Office official at first delivery.

Equipment Schedules

A complete schedule of all plant and equipment forming part of the works shall be included in the manual. The schedule shall include, but shall not be restricted to the following data:

- Equipment type and model
- Equipment identity number/serial number
- Date of manufacture, testing installation and commissioning
- Country of manufacture
- Manufacturers name and contact address
- Any other information required by the Department

Maintenance Requirements

The manufacturer’s recommendation with regard to the routine servicing and maintenance of all equipment shall be included in the manual. This data shall include the recommended service interval and the estimated hours required for each type of service, for each item of equipment, together with a list of agents/contractors authorised to carry out such service/maintenance.
Operating Instructions and Training

- A complete description of all operating procedures and safety measures shall be included in the manual. A basic “Fault Finding Guide” shall also be included.
- Training shall be given to staff operating machinery and plant together with maintenance personnel.
- Training certificates must be signed by staff that has received training.
- The table below is to be used by the Project Leader and Principal Agent as a checklist for all as built documents.
## AS BUILT DOCUMENTATION REQUIREMENTS

ALL DRAWINGS REQUIRED IN AUTOCAD (DWG) FORMAT ON CD

**PROJECT =**

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<td>2 ELECTRICAL - RETICULATIONS, TELEPHONES, NURSE CALL SYSTEMS, ALARMS, BMS AND ELEVATORS etc.</td>
<td>Yes</td>
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<td>3 MECHANICAL - AIR CONDITIONING, VENTILATION, GAS LINES, ELEVATORS,(LAYOUTS AND SIZES)</td>
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**MANUALS**

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**PSYCHIATRIC WARDS**

**Low Secure Area’s. (lsa)**

- Should form part of general wards
- Dual functional is; medically ill patients should be accommodated for as well as mentally ill patients.
- Low secure areas should each be custom designed to fit into existing building plan / infrastructure. New facilities to be custom designed.
- Positioned near Nurses Station or there should be clear lines of sight from nursing area into low secure area.
- Closed circuit monitoring of facility with only nursing and medical staff able to see monitors.
- Windows to be fitted with external louvre control for patient privacy.
- Light switches outside of ward / facility.
- Maximum natural light and ventilation.
- Facilities to be located on a ground floor with access to an external garden area and covered patio.
- Easy access to ablutions.
- Security gates with standalone access control to selected entrance areas.
- Windows glazed with 6mm polycarbonate reinforced glass with mesh burglar proofing in framework bolted to walls.
- Any fitting within a facility - if unavoidable to eliminate suicide - is to bear a load of not more than 20 Kg’s. (e.g Oxygen mask equipment)
- Fire alarm installation.
- Doors to be solid core minimum width of 900mm, lockable from outside with an armourplate glass observation window to view all corners of the room size250mm x 500mm window set +/- 1.5m to centre above finished floor to centre of window.
- Welded vinyl floor sheeting with welded skirting except all wet areas.

**PSYCHIATRIC FACILITIES**

**Entrances:-**

- Entrances to ward buildings to be fitted with remote controlled full height “Man Trap” security cubicles with bell pushes fitted both entry and exit sides and remote unlocking operation enabled from the security booth.
- Side entrance door to be a minimum of 900mm wide to be provided for wheel chairs or patient beds

**Ablutions:-**

- W/C pans are to be Vandal Proof with integrated seat; fitted with ‘prison type’ Flush Masters.
- Thermostatically adjustable demand water supply to showers in Psychiatric facilities.
- Wash - hand basins are to be stainless steel recessed wall mounted drinking fountain / hand washing fitted with water metering KM2.100 Bibtap type
- Showers to be fitted with solid vandal resistant spouts - not shower roses - with single demand type tap for timed discharge of water from mixer within or behind wall – one per shower. Temperature to be pre-set and controlled for all outlets.
- Cubicles to be fitted with heavy duty stainless steel shower curtain rail and 3mm x 230mm wide blue plastic - polycarbonate strips. Rail secured to wall with Allan keys s/s screw.
All plumbing is to be built into walls and plastered over.
Seclusion rooms to be provided with a basin and toilet as described above.
Cold water supply with adjustable demand taps to Seclusion Room basins only.
Recess in shower walls tiled for the soap bar.

**CCTV Cameras, Monitors and Temperature Control:**
- In dedicated psychiatric institutions, all seclusion rooms to be fitted with CCTV cameras linked to monitors in section heads offices / Nurses station and security booth.
- In ordinary institutions, reinforced / toughened glass viewing panels between seclusion room and Nurses station in galvanized steel frame.
- Seclusion rooms to be fresh air ventilated.
- Camera to be positioned above toilet pan looking into the room towards the entrance.

**Floors:**
- Welded vinyl sheeting with weld skirting to sheeting?
- Seclusion rooms are to have floor drains cast in-situ. Grade 304 stainless steel drains cast “in situ” with removable traps with grid screwed down. P traps are not suitable due to blockages. Floors to be finished with 2mm epoxy. No skirtings.
- Floors to have under floor heating in cold area’s.

**Seclusion Room Doors:**
- Doors to be 900 x 2032 x 40mm Solid Core Anti-Bandit Security Doors Solely supplied by “Chubb” or “Bitcon" Industries” or other approved as a complete unit with all fittings and ironmongery, steel lined 250mm x 500mm viewing panel, glazed with +/- 40mm bullet proof glass in steel frame. Height above floor level +/- 1.5m to centre of viewing window.
- Steel lining for doors is to be epoxy laminated to inside of door and around edges. Internal steel lining to be primed and finished with approved epoxy paint. External face of doors to be finished in veneer or hard board as per standard preambles ready for painting. **Doors to be hung to open inward** on special galvanized steel door frames with lugs pre welded to frame to fit every third course of brickwork. The complete frame is to be hot dip galvanized and built into surrounding 230mm solid brick walls. **No welding to be done on site.**
- Hinges to be stainless steel ball type encased in spun casings.
- Frames to seclusion rooms for psychiatric patients are to be 6mm thick galvanized steel, supplied complete with doors as a unit opening inwards. **Preferably secured to top, middle and bottom to safeguard against patient abuse.**
- Pull handle on outside with no handles on the inside.
- In cases where Anti- Bandit doors are retro fitted in existing buildings, galvanized security door frame (76mm x 38mm x 3mm Rec-Tube with rebates) are bolted in position with solid core door complete with galvanized steel cladding on inside, masonite external finish ready for painting including 250mm x 500mm x +/− 40mm thick clear vision armour plate glass viewing panel. Pull handle on passage face to door and locking device.
Seclusion Room and Psychiatric Facilities Windows:-
- All external windows to be galvanized steel frames of maximum width of 150mm sufficiently burglar proofed to prevent entry into or exit from rooms. Restricted opening of not more than 125mm.
- Internal windows / viewing panels to be glazed with 6mm polycarbonate reinforced glass panels (except seclusion rooms viewing panels)
- Burglar proofing to be built into walls externally and galvanised fine mesh welded to galvanised framework internally. Framework to be fitted between reveals of window, hinged at the bottom to allow for cleaning and repairing of glazing. A suitable locking system for the mesh is to be incorporated at the top of the frame.
- Window sills to slope internally.

Seclusion room Ceilings:-
- Minimum ceiling height of 3.5m from finished floor level
- Lock up areas and seclusion rooms to be reinforced concrete slab in new installations.
- In seclusion rooms in existing buildings, ceilings and brandering shall be replaced with 6mm Aluminium Epoxy Powder Coated sheets and 75x50 brandering firmly secured to roofing timbers.

Seclusion Room Light Fittings:-
- Fluorescent vandal / flame proof light fittings with electronic ballast, fitted with high impact diffusers.
- Light controls to be positioned outside the room.
- Natural lighting to be used to the maximum.

Seclusion Room Fittings:-
- Tables and seats in dining / rest areas to be built ‘in situ’ face brick units with 32mm hardwood tops. Tops to be securely bolted down with all bolt holes pellated. Hardwood to be varnished with polyurethane varnish.
- Seclusion room bed to be bricked up platform 500mm high with reinforced concrete slab with rounded edges.

BURGLAR RESISTING SAFES
- The safe must comply in all respects with the current edition of S.A.N.S. 751 - “Standard Specification for Burglar Resisting Safes”. The type and class of safe shall be “Office Safe, Class I” as laid down in S.A.N.S. 751.
- Where the mass of each safe is 680 kg or less, provision must be made for securing it rigidly to prevent unauthorised removal. The means of securing shall be at least equal in effectiveness to that which would be provided by four 12 mm bolts. Locks shall be lever locks with a minimum of six levers in accordance with S.A.N.S. 751. The supplier shall forward keys for any safe (or safes) by registered post, direct to the Department and the supplier must clearly indicate the institution in which such safe (or safes) is being installed.
- A minimum number of three Hand Gun Safes to be bolted in position inside Guard Huts not in view of the general public. Size 280mm H x 370mm W x 200mm D. Mass 15 Kg with one key-lock.

DISABLED PERSONS
- Consideration to be given to all types of disabilities.
- Provision must be made for easy access for disabled persons in accordance with NBR, S.A.N.S 10400 requirements.
• Provision must be made at all times for transporting wheelchair and disabled patients.
• For general purposes the gradient of any ramp should not be steeper than 1 in 15 (4½ °) with a minimum width of 1.2 m for every 10 m in length in compliance with S.A.N.S 10400 regulations. Rev 6
• Camber not to exceed 1:40
• The preferred maximum length of a general-purpose ramp is 10.00 m. Where ramps have to be more than 10.00 m long for any reason, a rest platform of 1.50 m long is to be provided at 10.00 m intervals. Rev 4
• A level platform 1.50 m long should be provided at the top and bottom of any general-purpose ramp and at changes in direction.
• Ramps must be provided with handrails. The vertical dimension from ramp surface to top of handrail should be 900 mm.
• Ramps used frequently by wheelchair patients should be provided with an intermediate handrail 750 mm above the surface of the ramp. Where two rails are provided the upper rail maybe placed 960 or 990 mm above the surface of the ramp.
• Where ramps are provided specifically for wheelchair patients or patients’ trolleys a non-slip lightly stippled surface is preferred to reduce friction and to enable the individual to climb the ramp with the minimum of effort. External ramps should be rendered non-slip by adding carborundum chippings to the granolithic finish. A grooved rubber tile or non-slip 2.5 mm vinyl sheet is suitable for internal ramps.
• Special parking areas with mountable kerbs should be provided for wheelchair users with a minimum width of 3.5 m and located not more than 50 metres from the entrance if possible Rev 1
• Entrance from roadway into OPD’s and Accident Emergency area’s where ambulances carry patients, kerb entrance to be full width of entrance area. Rev 6
• No step from one level to another to exceed 5 mm. Rev 6
• If hot and cold water is used for the basin, the cold water tap to be closest to WC pan. Rev 7

**FIRE PROTECTION AND NOTICES**

• National Building Regulations and the SANS 10400: (ex. SABS 0400:1990) Code of Practice for the Application of the National Building Regulations
• The designer must obtain the approval of the Local authority during documentation. Records to be obtained of approvals etc.
• All necessary signage is to be provided and to comply with SANS1186 and SANS 10400.
• Fire extinguishers and fire hose reels must be clearly indicated in buildings by means of 300 mm x 300 mm signs in accordance with the SANS and OHSA regulations. Signs to be fixed approximately 2, 500 mm above floor level and must be visible from all angles.
• Fire extinguisher handles height to be positioned at 1,500 mm above floor and shall be installed with a timber backing plate. Rev 1
• It is recommended that fire extinguishers should not exceed 4.5 Kg in weight for ease of handling. Rev 2

**FLOOR PLANS**

Patient treatment areas dimensions of any room or space shall conform to the requirements as stated in R158.
No habitable room shall have a clear floor space of less than 6 square meters.
The following office norms are in compliance with the norms as gazetted on the 2nd September 2005.
Table shows basic office work spaces minimum/maximum assignable office areas. See gazette for added allowances (committee room executive, interview room admin for example).

Executive Management  Hospital CEO Level 13 and above = 20 - 25m²  
Senior Management  Hospital Manager Level 11-12 = 16 - 20m²  
Managers, Doctors, Ward Sisters Level 9-10 = 10 – 16 m²  
Administration Below Level 9 = 6 – 10 m²

Open Plan Offices
Administrative personnel (per staff member)  8 square meters  
Typist/data typists or other members (also Administrative) where only a small space is required  6 square meters

HEIGHTS ABOVE FLOOR LEVEL
- The clear finished floor to ceiling height for health facilities is to be a minimum of 3.0 meters with Residential units to be clear finished floor to ceiling of 2.6 meters and in accordance with the NBR.  
- Any additional height specified in these regulations shall be the vertical dimension from the top of the finished floor to the underside of the ceiling.  
- The height for Theatres is to be a minimum of 3.5 meters.  
- Height from floor to underside of surface mounted Lamina Flow in Theatres to be a minimum of 3.0 metres.  
- No beams shall be below 2.1m from finished floor level.  
- Shower roses set from unfinished floor level to outlet in wall at minimum of 2.1m.

CORRIDORS
- All corridors where patients are being transported shall have a minimum unobstructed width of 2.3 m.  
- Any fixtures such as bump-rails, cupboards, etc. shall be regarded as wall or part of the wall.  
- All other corridor widths to comply with NBR.

SIGNAGE
- The signage system must comply with the primary function of directing the visitor / patient to the areas / departments / wards / rooms, which are their normal destinations, and to indicate the exits clearly.  
- Institutional signage at entrances to premises to be as per detailed drawing.  
- All signage to be provided in English and Zulu. District office to co-ordinate the correct wording before manufacture commences.  
- All restricted access rooms or areas must be clearly indicated by appropriate signs.  
- 40 x 50mm High Perspex numeral or alphabet door number  
- 150 x 150mm High Perspex female, male or paraplegic pictogram door sign  
- 300 x 62mm High Perspex door sign to be placed on doors not lower than 1.2 m and higher than 1.5 m. (Room designation)  
- Double sided Perspex information sign suspended from ceiling grids with brass chains. Minimum of 2.1 m above finished floor level.  
- Etched aluminium wall mounted information sign or reverse engraved Perspex signs. Size determined on site.
• Lettering on 5mm thick reverse cut out Perspex with Arial or other approved screwed to wall or suspended from ceiling. Colour to institutions colour scheme.
• 1.2mm Thick galvanised steel epoxy coated panels with 20mm bent on either side, single sided directional and information signage with self-adhesive vinyl lettering with Arial fixed to No. 2 x 75mm diameter epoxy coated posts.
• Bed number and patient / doctor card holder size 255mm x 255mm formed of removable clear Perspex cover to hold A5 card on 4mm thick back plate and reverse cut out vinyl lettering.
• Embossed removable infill panel lettering with curved aluminium frame plugged and screwed to wall. Signage as “Vista” or other approved. Rev 1
• Key tag holders 35mm diameter x 5mm thick Perspex punched for and including retainer and engraved with designated room number.
• All fire / emergency exit doors shall have illuminated safety exit signs and shall be on emergency power and own battery backup or phosphorescent signs. Rev 3
• All signage to comply with SANS 10400-S:2011 part 4. Rev 7
• Signage to all rooms to be positioned on doors between 1.4m to 1.7m above floor level in compliance with SANS 10400-S:2011 part 4.2.4. Rev 7
• Laminated and framed copies of operating procedures, wiring diagrams, zone diagrams and plant schematics as applicable are to be fixed to the wall in a well illuminated and accessible area.
• Laminated and framed block floor plan copies of institution floor plan showing fire escape routes. Rev 7

KITCHEN REQUIREMENTS
General comment – quantity and type of equipment must be determined based on the number of meals required and the plating procedures

Canopies – Refer to the Kwazulu Natal Department of Health’s Standard Mechanical Document
Equipment – Refer to Kwazulu Natal Department of Health’s Standard Mechanical Document

• Canopies: These should extend 300 mm beyond front edge of cooking equipment.
• Drainage: Floor drains and discharge pipes under floor to be Grade 304 stainless steel with removable drainage grids and 100 mm diameter trapped outlets to be provided in kitchens adjacent to cooking utensils and equipment of a similar nature.
• Elsewhere 100 mm diameter trapped outlets with approved hopper heads and stainless steel grids to be provided in approved positions for floor washing purposes. Provide trolley storage and wash up areas.
• Sink and basin wastes are to be connected directly to the sewer system via a Grease Trap gulley and are not to discharge into open floor channels.
• Provide suitable Grade 304 stainless steel floor drain complete with slotted stainless steel cover grid.
• Internal screen walls to preparation areas to extend 1.2 metres overall above floor level, provide half-round coping to these walls.
• One supervisor’s office of approximately 3m x 3m is required in each kitchen.
• Splash-backs: Stainless steel splash-backs 150 mm high to be provided to all work tops. Work tops to be positioned 100mm away from wall face.
• Wall finishes to be tiled according to Departmental standard tile specifications. Provide Grade 304 3mm x 76mm x 76mm x 1.2m high stainless steel protection angles to all exposed corners with S/Steel +/- 30mm long fixing countersunk screws. Rev 7
• All kitchen work tops to be cantilevered off walls for ease of cleaning
LAUNDRY FACILITY

- This will be determined by each institutions needs assessment and shall be in compliance with the policy document for the Design of Mechanical / Electrical Installations.
- The designer must consult institutional management with regards to onsite laundry requirements.  
- Laundry facilities to be discussed with Department of Health Head Office during the planning phase.

MEDICAL WASTE HOLDING AREA

- A well ventilated, bricked constructed holding facility with solid roof and non-slip concrete floor must be provided at all health facilities.
- The room must be vermin proof and be provided with a trapped drainage outlet connected to sewer system including cold water supply standpipe with hose.
- Stainless steel basin in Medical Waste court yard outside door. Electrical waterproof socket outlet at 1,4m above floor level in store for deep freeze.
- Unauthorised person and Hazard warning signage to be provided.
- Lockable vermin proofed gate of minimum width 900mm to be fitted to entrance.

- Medical Waste storage area’s to be as follows.
  - Regional Hospitals 20 – 36m2
  - District Hospitals 14 – 24m2
  - Community Health Centres 9 – 15m2
  - Clinics 5 – 15m2

REFUSE HOLDING AREA

- A well ventilated, bricked constructed holding facility with solid roof and non-slip concrete floor must be provided at all residential complex units.
- The room must be vermin proof and be provided with a trapped drainage outlet connected to sewer system including cold water supply standpipe with hose.
- Lockable vermin proofed gate of minimum width 900mm to be fitted to entrance.

STORM WATER DRAINAGE

Storm water drainage systems on all new services should be designed to cater for average rainfall in the particular area.

BULK STORES – DIVISION WALLS

Must be compartmentalised for specific commodities.

X-RAY SUITE

Planning of new and alterations to existing facilities to be done in consultation with Radiology Division at Wentworth Hospital (Health Technology Unit HTU).

GENERAL FINISHES

WALLS/ BRICKWORK

Foundation brickwork to be hard burnt NFX type.
- Super Structure if not face brick to be NFP type.
- Face bricks to conform to FBX quality
- All brickwork around an X-Ray room to be 220mm solid brick work or plastered with 15mm barium if hollow bricks are used.
All internal surfaces to patient treatment areas to be plastered and painted. No face brick or stippled wall finish permitted due to infection control. Rev 4
Inside walls must be covered with a smooth finish and must be painted with a durable washable acrylic paint or covered with an approved ceramic tile. Rev 4
Where chasing has occurred in plaster, the wall is to be skimmed feathering to existing surface. Rev 5
All brickwork to septic tanks to be manhole bond (water bond) method grouted up. No straight joints will be permitted. Rev 5

WALL FINISHES

Vinyl sheet wall cladding material is not permitted.
- In non-patient treatment areas, the wall behind wash hand basins shall be tiled from two courses below the unit to a height of at least 400 mm above unit, (2 rows) and a distance of at least 150 mm on each side of such fitting. No tiles are to be dressed onto a wash basin fitting. Rev 7
- Glazed tiles to be 1st Grade 200mm x 200mm matt white with PVC edge trim where specified. Rev 7
- Shower cubicles, ablations and Main Kitchens to be tiled to ceiling height. Rev 7
- Where medical basins are used in place of Hygia basins a 610mm wide x 600mm long x 1.2mm thick stainless steel panel epoxied and stainless steel screws with chromed domed heads screwed to wall with anti-bacterial silicone sealant between surfaces, basin and panel. Panel to be 400mm above basin with elbow action taps protruding through and minimum of 150mm either side. Rev 7
- All universal undercoats are to comply with SANS 681:1997 in all respects. Rev 7
- All emulsion paints are to comply with the requirements of SANS 1586:1995 Grade 1. Rev 7
- All eggshell enamels are to comply with the requirements of S.A.N.S 515: of 1972 in all respects. Rev 7
- All walls in patient treatment areas to be painted with a polyurethane type wash n' wear paint in compliance with SANS specifications. Rev 7
- External paint finishes are to be good quality exterior quality washable paints. Rev 7

SKIRTINGS

- Splayed and coved cement skirting is to be avoided. Rev 2
- In all patient treatment areas PVC skirting to be hospital type MFE 5 or MC18C welded to floor vinyl sheeting. Rev 2
- 70mmx19mm varnished and stained to uniform colour hardwood timber to Office and Staff accommodation where carpeting is used. Rev 4
- Half ceramic or porcelain tile skirting when tiled surfaces are specified as well as around cupboard basis. Rev 6
- PVC skirting is to be taken around all fixed floor unit plinths and welded to the floor sheeting. Rev 1
- 80mm Aluminium skirting glued to partitioning. Rev4

BUMPER RAILS

- 300x 30mm wall protection bumper rails shall be varnished laminated hard wood (no particle board) secured to walls with brass screws and silicon sealant between wall and rail for the entire length of both bottom and top. Rev 3
- Bumper rail behind all beds in Wards +/- 1,000m long x 600mm wide solid timber where required. (Due to bed heights been adjustable.) Rev 6
- Bumper Rail height from finished floor to centre of bumper rail = 850mm. Rev 1
- 300mm x1.6mm thick Grade 304 stainless steel bumper rails epoxied and screwed to walls with stainless screws +/- 30mm long. Rev 7
**CORNER WALL PROTECTION**

76 x 76 x 1.6mm thick x 1200mm high grade 304 stainless steel corner protection plates with +/- 30mm long stainless steel countersunk screws or glued with epoxy to all exposed corners and silicon sealant for the entire length all sides.

**TRANSITION STRIPS**

- Aluminium transition sloping Tile-In ramp as “Kirk” or “Vexcolt” at junction between vinyl sheeting and ceramic / porcelain tiles.
- Aluminium transition threshold covers between different floor materials plugged and screwed to floor.

**FLOORING**

- The floors of all rooms and corridors shall be of concrete, finished to a smooth surface ready to receive specified finish.
- All granolithic floor finishes where specified with skirtings are to remain untinted. Grano to be tested by recognized Laboratory.
- Recessed inside entrance mats with brass frame at main entrances into a health facility as “Belgotex” “Grimebuster” or other approved. The mat must have a minimum size of 2m in length and be as wide as the entrance.
- Structural Movement joints to be as “Migua” FV35/1500 or “Kirk” ASSJ390H with hospital insert bolted to slab before screeding for high traffic areas.
- Aluminium movement joints for low traffic areas for vinyl and tiles with hospital insert.
- In patient care area’s, no perforations to floor covering is to be made. Eg door stops, door floor keeps etc.

**FLOOR SCREED**

It is recommended that in new structures the screeding should be as specified by “Tal” using “Screedmaster”, the pumped method. Application of “Screedmaster” must be done by a “Tal” approved contractor.

**FLOOR LAYING PROCEDURES**

Floor laying procedures must be in accordance with the Standard Preambles to all trades. Floor laying must only be undertaken by a manufactures approved installer and the floor screeds approved by the flooring manufacturer.

**FLOOR COVERINGS**

The following floor coverings shall be as specified or other approved and used in the designated areas as specified below. Samples to be pre-approved.

- 920 g/sq m – 980 g/sq m sheet carpet in administration area’s to be corporate colours, Belgotex and Van Dyk colours. Nile Blue / Cirrus for offices and Azure / Cobolt Blue for passages.
- All grouting of floor tiles to be finished flush pointed to tile edges.
| Area                                                                 | 300 x 300x 8,3 - 8,5 full bodied Porcelain Tiles in compliance with UPEC specifications with joints varying from 3mm -5mm (Colour to be uniform light colour Salt and Pepper range) | Ceramic Tiles Johnson Granito GN 573 (330mm x 330mm) | Homogeneous Fully flexible Vinyl Sheet 2,5mm thick | Polypropylene Sheet Carpet “Fibre Weight ” 920g/m² - 980g/m² | 300 x 300x 8,3 - 8,5 full bodied Porcelain Slip Resistant tiles with joints varying from 3mm -5mm or Industrial Vinyl Sheeting 3,0mm thick | 300 x 300x 8,3 - 8,5 full bodied Porcelain Slip Resistant tiles minimum certification rating of R10/R11 with joints varying from 3mm -5mm (Colours to be uniform Salt and Pepper range) | Granolithic Finish | 4mm Epoxy Seamless Slip Resistant or 4mm matt polyurethane floor finish. |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------|
| All Patient Treatment Areas                                         |                                                                                                                                                | X                                                 |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Patient Ablution Areas                                              | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Sluice Rooms/Dirty Utility                                          | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Store Rooms                                                         | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| In Health Institutions                                              | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| All Staff Facilities in Health institutions (Kitchens & Ablutions)  | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Main Kitchen                                                        | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Administrative Office areas                                        | X X                                                                                                                                             |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Staff Accommodation                                                | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Bulk Stores                                                         | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Laundries                                                          | X (Dry area’s)                                                                                                                                |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| External corridors and ramps                                        | X                                                                                                                                             |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Internal ramps                                                      | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Mortuaries                                                         | 6mm X                                                                                                                                         |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Seclusion Rooms                                                    | 4mm X                                                                                                                                         |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Clinic Corridors                                                   | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Pharmacy Store and general work area’s. (Not offices)              | X                                                                                                                                             |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
| Showers if necessary                                               | X                                                                                                                                               |                                                   |                                                     |                                                               |                                                                                  |                                                                            |                                                                        |
PATIENT TREATMENT SHOWER FLOORS

- 900 x 900mm x 88mm deep Grade 304 stainless steel shower tray.
  - Where standard size for shower tray cannot be accommodated apply 4mm slip resistant epoxy graded fall to outlet.

RESIDENTIAL SHOWER FLOORS

- Minimum of 800 x 800 x 88mm deep Grade 304 stainless steel shower tray
  - Mosaic floor tiles where standard size for shower tray cannot be accommodated.

PARTITIONING

- **Patient area’s if unavoidable** – If 12mm Plaster Board tapered edge dry wall partitioning is to be used, the base is to be sealed with sound insulation under the floor track for infection control with cavity batt insulation. All butt joints on plaster board to be covered with 50mm fibre tape and made good with quick dry skimming compound ready for painting.
  - Finish to be painted with a good quality acrylic paint. Recommend a fine stipple coat in an office environment in well-lit area’s to avoid seeing skimming of junctions.
  - Insulation in cavities to conform to Class 1 fire index with a minimum of 50mm thick.
  - Studding and tracks for partitioning to be galvanized steel and wall thickness to be 76mm finished product. All 90 degree open corners to be finished with 90 degree galvanized wall angle and made good with quick drying skimming compound.
  - Stainless steel stile Anchors to be used when using “Vitraflex” partitioning in ablution facilities or other approved “Solid Core” material with formica finish and framework.

DOOR FRAMES

- All door frames to be 1.6mm thick with mitred top corners, joints seam welded supplied with corner stiffeners in the reveals on the inside.
  - 1.6mm thick Grade 304 stainless steel frames to all new Health Facilities. eg Hospitals, CHC and clinic’s excluding ancillary buildings.
  - In areas in CHC’s and Hospitals where trolleys will be used and entrances to wards, 1.6mm thick door frames to be splayed type with the rebate protecting the door edges.
  - Rebates in frames to be +/- 45mm where required to accommodate the door thickness and the stainless steel plates and returns.
  - Residential units doorframes to be mild steel hot dipped galvanised (Architectural finish) 1.6mm thick double rebated conforming to SANS121, SABS and ISO 1461. SANS for galvanizing. Certificate for galvanizing to be requested for control purposes.
  - Alterations to existing facilities, (not individual blocks) all frames to be 1.6mm thick, have mitred top corners seam welded supplied with corner stiffeners in the reveals on the inside. The profile of the new frame to match the existing frame.
  - Service ducts, fire hose reel cupboards and electrical cupboard / duct frames can be timber.
  - Stainless steel hinges for stainless steel frames and brass for all other frames.
Frames to be checked out to accommodate hinges with back plate. Hinges are not to be welded to frames.  
Extended broad Butt brass hinges are preferred to Parliament hinges to external outward opening double swing doors.  
All doors to be hung on three hinges with the top two hinges been +/- 300mm spaced apart from each other.  
Door locksets to be set at 1.2m above floor level. Frame checked out accordingly with chrome adjustable striker plates screwed in position.  
Door handle lockset check out in frames for fire escapes and paraplegic entrance doors to be at 1m from finished floor.  
Backs of all galvanized and standard oxide primed metal door frames to be painted with bituminous paint.  

**DOORS**

- All doors shall be solid core timber.  
- Plant room doors shall be galvanised mild steel.  
- Record room doors shall be purpose made.  
- Double doors with one way swing to have rebated meeting stiles.  
- In-patient treatment areas where double swing doors are required, the meeting stiles are to be bull nosed wrapped with stainless steel cladding around.  
- Use of folding type doors is to be avoided.  
- Sliding doors with heavy duty sliding mechanism can be used in areas where space is of a premium.  
- Access control doors are to be provided in special cases – e.g. Entrances to Neonatal / Specialized Wards and Main Entrances into Hospitals.  
- Hollow core doors are not to be used in any circumstances.  
- Doors to wards must be a minimum of 1,350 m clear hung in two leaves. (One and a half doors.) One leaf is to be hung so as to screen the patient in the open position.  
- All doors to patient treatment areas are to be a minimum clear width of 1,000mm cladded with Grade 304 stainless steel lining to be 1,2mm thick x 1,1m high generally, to entrance face, returning on lock side of door.  
- All linings, kick and push plates to doors are to be Grade 304, 1,2mm thick stainless steel.  
- Linings are to be glued to door face with Epoxy Adhesive or screwed with countersunk stainless steel screws +/- 20mm long screwed along the edges at 150mm c/c.  
- Push plates to be 350mm long x 150mm wide fixed to both sides of door.  
- All fire escape route doors and server room doors to be solid core with a minimum of 2 hour Fire Rating.  
- Where framed ledged and braced doors are specified, braces to be fitted falling from lockset side down to hinge side.  
- Service duct doors to suit the size of service ducts.  
- Sliding doors to X-Ray rooms to 2.0m x 2.1m high hung on approved heavy duty hanger with timber pelmet over mechanism. Door to be lead lined and cladded with grade 304 stainless steel x 1,2mm thick cladding around edges, returned on inside to a height of 1,1m from lower edge. Door to overlap opening reveals of 100mm on each side.
- Sliding doors for Theatre doors in District hospitals to be manually operated with Theatre doors in Regional Hospitals Electrically operated.  
  
- No glazing is to be installed in any door or curtain walling below lock rail or 1,2m from finished floor level. The use of aluminium panels to be used.

**GALVANISED STEEL DOORS**

All plant room doors to be hot dipped galvanised louvered doors either single or double as per departmental type drawing No 3025H/02 conforming to SANS 121, SABS and ISO 1461 specifications for galvanizing.
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GENERAL IRONMONGERY
Refer to the Kwazulu Natal Department of Health Standard Preambles to all Trades. Surface finishes should be restricted to polished chrome or satin chrome on all approved ironmongery for external and internal doors – unless otherwise stated. Where surface mounted door closers are used on doors opening into a corner, a 76 mm nib is to be allowed. (Door closers mounted inside). Mortise type door closers do not require a nib, but should have a minimum 150 mm top rail. Toilet doors must be fitted with indicator bolts.

LOCKS
- Dead Locks to be minimum of three-lever type unless otherwise specified. External doors are to be fitted with 5 lever deadlock.  
- Main ward block entrance door shall be fitted with deadlock, roller bolt and pull handles.  
- Internal ward and ablution entrance doors shall not be fitted with locks sets. Roller bolt latch to be used and pull handles.  
- Plant room and service duct doors at each institution to be keyed alike with type HA1 locks.  
- Master Keying is not allowed in any institution.  
- Cupboards in common Kitchens that are used by all staff are not to be provided with locks.  
- Cupboard Locks: - All locks where used to be solid CP brass barrel type cupboard locks.  
- All built in cupboard doors with locks in a Nurse’s Home bedroom are to be keyed alike.  
- Oval cylinder dead lock as “Union” L-2153-40 and escutcheons with Cranked pull handle as “Union” AL5512-300FL and escutcheons to high traffic entrance and exit doors or other approved.  
- Mag locks to be set and secured to the inside of a rectangular tube which is to be the full width of door opening. Tube to be bolted to transom or under top of frame and screwed to frame styles.

LOCKSET
Preferred ironmongery for office environment in any health facility is:-
Lockset as deadlock, push and pull and roller ball catch. Deadlock, push and pull, thumb turn cylinder inside including escutcheons and keeps.

JOINERY
- Doors, drawer fronts and cupboard carcases to be constructed out of 16mm Melamine faced “V313” moisture resistant particle board (Identifiable by green in colour) with 2mm high impact edging or 16 x 10mm hard wood edging.  
- “Supa Wood” is only permitted for internal shelving, and not for cupboard construction or in exposed external surfaces in any Health facility.  
- No cupboards under sinks. Provide open slatted rails under.  
- Worktops in general to be 32mm solid post formed Formica on “V313 (HMR)” (High Moisture Resistant) particle board in non-moisture areas.  
- Worktops against sinks can be “Rustenburg” Black granite slab with silicone sealant at all joints or Solid Surfacing worktops as in “Surinno, Corrian or Caesar Stone” in high moisture usage area’s adjacent to sinks and Laboratory worktops if stainless steel is not used.  
- Preferred wardrobe cupboard doors in Nurses’ Home bedrooms to be sliding door type.
SHELVING

- Epoxy powder coated sheet metal adjustable shelving free standing units or pine lacquer finished Modular Timber Shelving to be provided in storerooms. Floor standing shelving units are to include a base shelf.  
- With metal units, corner support post feet to be fitted with PVC covers to protect the floor coverings.  
- In linen storage rooms, slatted wooden shelving is to be provided varnished.  
- Width of shelving will be determined during documentation to meet the specific storage requirements. (All shelving must be securely braced).  
- All shelving in Pharmacy’s to be epoxy powder coated sheet metal adjustable free standing units.  
- Theatre and CSSD’s shelving to be Grade 304, minimum of 1,2mm thick stainless steel with stainless steel connectors, bolts, support framework, screws etc.  
- Shelving in CSSD Sterile Store to be slatted type bars of grade 304 stainless steel minimum of 1,2mm thick stainless steel.  
- The use of epoxy metal slotted wall bands and cantilevered brackets to be avoided in all storage area’s.

WINDOWS AND BURGLAR PROOFING

- Anodised or epoxy powder coating conforming to Class 2, 25 year guarantee, 60-80 µm dry-film thickness and SANS 1796 certified applicator. Window Sample to be provided. Any supplier / manufacturer / subcontractor shall be registered with AAAMSA (Association of Architectural Aluminium Manufacturers of South Africa).  
- S.A.N.S approved UPVC windows with galvanized metal core can be specified. 
- Sills of all staircase windows must be not less than 1 m above floor level or landings, especially in Nurses’ homes and public areas.  
- Where windows exist that are less than 1m off floors, safety glass must be used in areas below 1,2m high and where there is a possibility of persons falling down staircases at landing level.  
- Provision is to be made for external cleaning of windows.  
- Suitable secured access to flat roofs.  
- In general all ground floor facilities must be burglar proofed. Specification must be approved prior to installation.  
- In multi-storey buildings, all windows in patient treatment areas to be burglar proofed or openings of top hung sashes to be fitted with restriction stays with maximum opening of 35 degrees.  
- In areas where access can be gained to higher levels via flat roofs or adjoining roofs these windows / doors are to be burglar proofed.  
- Vertical Blinds are the preferred covering to windows.  
- Retractable PVC mesh Mosquito screens are to be provided to all opening window sections in Malaria risk areas.  
- All glazing to patient treatment area’s to be obscure glass up to +/- 1,5m from inside finished floor level or to nearest glazing bar / transom.

SILLS AND FASCIAS

- Wherever practicable, the standard type of dark fibre cement sills unfinished should be installed internally. Discretion must be exercised in the use of Fibre cement coloured sills externally because of their liability to fade.  
- Wherever practicable and particularly in damp, humid areas, the use of Fibre cement fascias and bargeboards is recommended.  
- Recommended that Fibre cement fascias and bargeboards are not being painted.
• Brick on edge sills must be used in face brick buildings.

**CEILINGS**

**Plasterboard Ceilings**

*Truss or Rafter suspension*

• 7mm Plasterboard where specified internally with 75mm Cove cornice and minimum of 4mm fibre cement board externally and to ablation facilities. All sheeting to be fixed at right angles to 49 x 19 x

• 0.5mm Furring channels at no greater than 400mm centres or 38 x 50mm brandering at no greater than 400mm centres. Fixing of sheeting must be at no greater than 150mm apart. Cover strips to be powder coated metal “H” section..

*Concrete suspension*

• 7mm Plasterboard where specified internally with 75mm Cove cornice and minimum of 4mm fibre cement board externally and to ablation facilities. All sheeting to be fixed to Fire rated concealed tee grid system consisting of 38 x 40 x 0.35mm Main tees and perpendicular cross tees at 300mm centres. Fixing of sheeting must be at no greater than 150mm apart. Hangers for concealed tee system are to be 25 x 25 x 0.8mm thick galvanised angles, fixed to concrete by means of 6 x 30mm express nails and washers.

*Exposed Grid ceilings*

Suspended ceilings

• Suspended ceiling panels in all installations are to be 1200 x 600 x6mm Calcium Silicate vinyl finish with 25mm Fire retardant polystyrene insulation backing glued on or 1200 x 600 x 6mm fibre cement vinyl finished, embossed or painted with 25mm high density polystyrene insulation backing glued on.

• Ceilings and support framework are to comply with Part T of the national building regulations with tiles in compliance with Surface Fire Index Test : SANS 10177 Part 3 Class 1 and SANS 428 overall classification Class B/B1/2.

• Hangers for suspended ceilings are to be 19mm wide by 0.5mm thick galvanised strapping, strapped and secured to tie beams by means of 32mm grabber screws or fixed to concrete soffits by means of 6 x 30mm express nails and washers. All tee sections and wall trimmings to be of galvanised metal powder coated to specified colour. Grid Tee system to consist of 38 x 24 x 0.35mm Fire rated Main and Cross tees. Main tee suspended at 1200mm centres and Cross tees to be fitted at 600mm centres, at right angles to main tees. Room perimeter to be finished with 20 x 20 x 20 x 0.5mm Shadowline Wall Trim fixed to wall by means of wall anchors at 450mm centres.

• Support T sections for light fittings to be secured at diagonal corners of fitting to roofing members or concrete soffits.

• Fittings to ceilings or hospital curtain track hangers are to be secured through suspended ceiling grid system and supported from roof truss tie beams or concrete slab.

• In new theatres, ceilings are to be plastered concrete.

• In the upgrading of existing theatres with plasterboard ceilings, these are to be skimmed with no visible joints or cornice.

• Pharmacy ceilings shall be fitted with burglar proofing in roof space, or concrete slab to new facilities.

• 900 x 600mm prefabricated hinged trap doors in solid ceilings, installed in each fire zone area: i.e. between firewalls.

• Existing buildings to be fitted with an one hour fire brake on top of existing 230mm walls to underside of concrete slab or roof structure, consisting of 65 x 6.5 x 0.5mm Drywall tracks at wall top and roof or slab with 63.5 x 35 x 0.5mm
Drywall studs fixed vertically at 600mm centres with Wafertek screws. Fit 15mm Fire Guard board on both sides by means of 25mm Drywall screws at 230mm centres. Fire wall cavity to be lined internally with Ultimate U Thermo 6, 50mm mineral fibre insulation board. System in compliance with SANS 10177 part 2-2005, with a minimum 60 minute fire rating.

**ROOFS**
- Timber roof trusses to be supplied with relevant TR1 and TR2 certificates.
- Structural steelwork trusses are to be specifically designed and must also be supplied with relevant Engineers Design drawings and certificates.
- Roof pitches for metal roof coverings to be a minimum of 10˚ and for Concrete Roof Tiles a minimum of 17½˚. In snowfall area’s additional Design Criteria is required from a certificated Structural Engineer.
- Flat roofs are not permitted.
- Simple and economically design principles must be followed for all roof structures.
- All valley’s to have a minimum of 50mm wide between roof finish for ease of cleaning.
- No box gutters are allowed.
- Roof lights must be avoided.
- Sufficient gang planks and work platforms are to be provided in the roof space.

**ROOF COVERINGS**
- The preferred roofing material is Secret fixing type galvanised sheeting with a “Chromdek” finish of specified colour to upper side.
- 0.58mm thick roof sheeting for purlins up to 1.2m c/c spacing and 0.8mm thick roof sheeting for purlins 1.2m to 1.7m c/c maximum spacing.
- 0.53mm thick Zinculume coloured metal secret fix roofing sheets is required within 50 kilometres from the coast.
- All other area’s to be 0.58mm as “Global-Tech” corrosion protection.
- “Klip Lock 700” or “Craftlock” roof sheeting. Installed as per manufacturer’s instructions.

**INSULATION**
- “Sisalation” FR 405 or other approved insulation on 3.2mm galvanized straining wires or straining tape to be laid on truss under all metal roof sheeting and concrete tiles in any health facility.
- In residential units with Rhino board ceilings, “Aerolite” or 100mm “Isotherm” must be used above solid ceilings. (Not suspended type).

**GUTTERS, DOWNPIPES**
- The preferred guttering is continuous extruded Aluminium with “Chromdek” finish with under gutter bracket.
- Gutter brackets to be fixed through fibre cement fascia into tilting batten or purlin. If this is not achieved, brackets to be gutter bolted to fascia.
- Additional under gutter brackets ± 750mm apart – are to be fitted in snow and hail areas.

**PLUMBING**
- All ceramic basins to general areas, sinks and wash troughs are to be supplied with overflows. Request for overflows in stainless steel fittings is to be made at time of order, as this is not a standard supply.
• Basins fitted to Wards, Counselling / Consulting Rooms (Patient treatment areas) to be vitreous china Hygia Basins with chrome plated bottle traps as Cobra 340. Height to be 950mm above floor level to rim.
• Flexitraps are not permitted as traps fitted to patient treatment basins.  

Rev 7
• All Medical basins shall be wall mounted for ease of cleaning floors positioned 950mm above floor finish.
• When Medical basins are used in lieu of Hygia basins, these are to be Sola 610 type installed to height of 950mm above floor level to rim.
• Elbow action taps of +/- 180mm long arms from spindle to lever edge in all area’s.

Rev 7  

• Note that elbow action taps must be positioned at 45 degrees from back wall in the shut position and open inwards.

Rev 7
• The preferred type W/C suit to all areas except public ablutions and Paediatric toilets is “Vaal Aquasave” - or other approved.
• In Public ablutions the preferred W/C pans are to be “Marley” Gypsy Vandal Proof type.
• Paediatric ablutions are to have at least one Junior W/C suite and one low level basin and urinal.
• All Patient ablutions with multiple units in excess of three points in any one facility - i.e. W/C pans and wall mounted Urinals - to be provided with Odour extraction system similar to “Toilet Friend” or mechanical designed odour extraction exhaust systems for infection control as in “Hygizone”.

Rev 6
• External Visitor’s toilets and Guard Hut wash hand basins to be fitted with “Pillar adjustable demand” taps KM2.102 type with cold water supply only. All non- medical wash basins to ablution area’s, i.e. staff, residential and patient areas taps are to be adjustable “Pillar demand” taps KM2.102 type with hot and cold water supply in residential units only.

Rev 5  

• Shower cubicles to be provided with extraction system for hot water vapour.
• Shower heads to be vandal resistant and of water saving type.

Rev 3  

• Provide Paraplegic ablation facilities as per National Building Regulations.
• If Flush Valves are used, these are to be “Flushmaster Junior” where there is insufficient water pressure.
• No drop - in sinks are permitted in post formed formica worktops. These are to be sit-on type. All sinks and wash troughs are to be Grade 304, 1,2mm thick stainless steel complete. Counter tops to be made same width as sink unit.

Rev 5  

• Appropriate sized double chamber instant water heater to be positioned over sink bowl not draining board in all Kitchenettes.
• In seclusion rooms, mortuary receiving areas and laundries, sluice rooms and hospital kitchens grade 304 stainless steel extendable type floor drains with interior removable foul air trap, screw down stainless steel grid is to be provided.

Rev 7  

• All Floor drains to main hospital kitchen facilities to be manufactured from grade 304 stainless steel with stainless steel under floor piping to an external grease trap.

Rev 3  

• Water reticulation (hot and cold water) – Must comply with the KwaZulu-Natal Department of Health’s Policy Document for Mechanical Installations.
• Hot water temperature for patient and staff areas shall not exceed 60°C at the point of use.
• Hot water temperature for paediatric and geriatric wards shall not exceed 40°C at point of use. The use of thermostatically controlled mixing valves on the hot water line is recommended near the point of supply.
- PVC sleeves in holder bats - not rubber - in particular to hot water piping.  
  Rev 2
- Hot water piping built into walls to be lagged with brown paper for expansion 
  and contraction.  
  Rev 2
- Ablutions and bathrooms where required to be fitted with “Plexicore” type 
  moulded fibreglass baths bedded down securely.  
  Rev 7
- All shower trays to be stainless steel or other as specified.  
  Rev 3
- All residential waste outlets in bathrooms and kitchens to be fitted with a flexi 
  trap.  
  Rev 3
- Where copper water piping is used, this is to be Class 2.
- Only precast / prestressed concrete and brick septic tanks will be permitted. No 
  plastic extruded moulded septic tanks are to be used.  
  Rev 5
- Provide stop cocks for servicing of plumbing fittings where no valves can be 
  provided under ie Hygia Basins, above ceiling level clearly indicated with Red 
  and Blue dots with the wording Valve “ivorene” label.  
  Rev 6
- No service pipes, eg, sewer and water are to pass through any plant room 
  including medical storage area’s.  
  Rev 6
- No dead legs in water reticulation systems are permitted.  
  Rev 7

SEWER / STORMWATER COVERS ETC.
- The use of hinged Ductile iron manhole covers and grates to be used in 
  preference to cast iron.  
  Rev 7

URINALS
Stainless steel for stall urinals in Public Ablutions.

WATER STORAGE
- Water towers and other water storage facilities at health institutions must be 
  provided
- The use of sectional steel tanks on stands with ladders, cat-walks and safety 
  rails. Tanks must have a storage capacity holding a minimum of 3 day’s water 
  supply including fire usage.
- 72 Hour water storage capacity shall be provided and if storing more than 100kl 
  then the bulk of storage will be at ground level with a maximum of 50kl elevated 
  storage.

WATER SUPPLY PIPES
Refer to KwaZulu-Natal Department of Health’s Preambles to all Trades.

SUNDARY HOSPITAL EQUIPMENT
- Bedpan washer - Sluicing must be provided in all ward Sluice Rooms  
  Rev 5
- In rural hospitals mechanical water driven sluicing sink shall be provided.  
  Rev 5
- In urban hospitals electrically driven bed pan sluicing machines shall be 
  provided.  
  Rev 5

The following items should be included in the building contract in consultation with 
the relevant hospital procurement section to determine what is presently under 
contract: -
- Drug cupboards: - 45 (l) stainless steel metal drug cupboard with flat top size 
  457, 2 (h) x 355, 6 (l) x 228, 6 (w) bolted to wall in Nurses Station. Provide 3 
  per Nurses Station.  
  Rev 1
• Soap Dispensers: - Elbow action lever type with bottle container for dispensing of the liquid as in the High Scrub grade 304 stainless steel type.  
  
• Toilet Roll Dispensers: - Toilet roll dispenser to be theft proof, lockable container with keys and to carry three standard toilet rolls. Used roll to be easily removed from unit below without having to unlock unit. Unit to be manufactured from mild steel and epoxy powder coated - colour white. Unit to be fixed to wall with four screws.

• Mirrors: - Heavy Duty 400 x 500 x 15mm Grade 18/10 stainless steel screwed to wall in public ablutions.

• Garbage peddle bin holders: - 20 litre x 1,2mm thick polished stainless steel pedal bin outer unit, 290mm Diameter x 455mm Height with 40mm Skirting and Safety edge. Removable inner bin with stainless Steel handle for easy disposal of contents. Stainless Steel robust pedal mechanism. Polished Stainless Steel Foot pedal with 8mm solid rod for durability.

• Towel Dispensers: - Paper towel dispenser to be the reflex type.

• Doctor’s Lockers: - shall be included in the building contract bolted to wall.

• Bedside Lockers: - Ward layouts should indicate the bedside locker is positioned to the left of the patient. This dictates the positions of the service outlets etc. in the bed head ducting and lighting system.

• “Forwin “hospital curtain tracks supplied with curtains. (Chintz fabric (#155CZ) woven with 100% polyester yarn) to be provided in building contract.

• Curtains or vertical louver drapes to be provided in building contract.

• Electric Hand Drier’s are not to be used in any Patient Care facility.

• Lockable epoxy coated metal key cupboards located in suitable areas.

• Hand Gun safes to be provided in security guard hut. Three maximum.