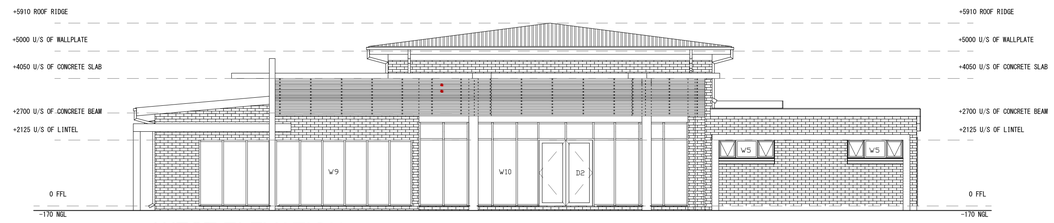
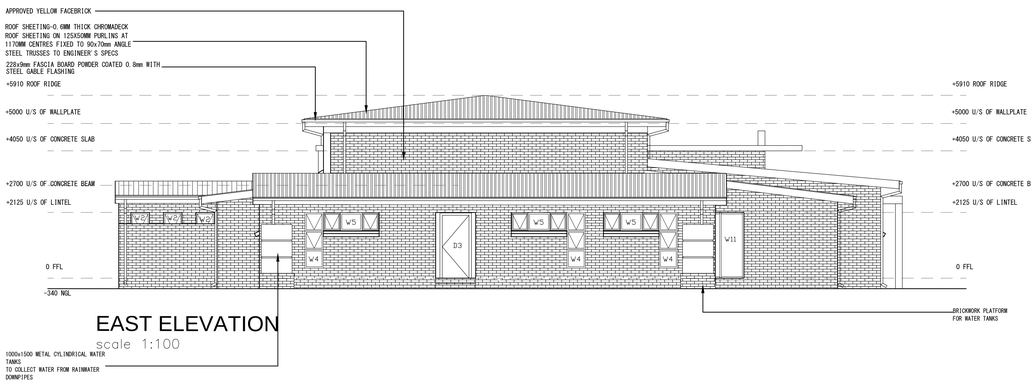


WEST ELEVATION
scale 1:100



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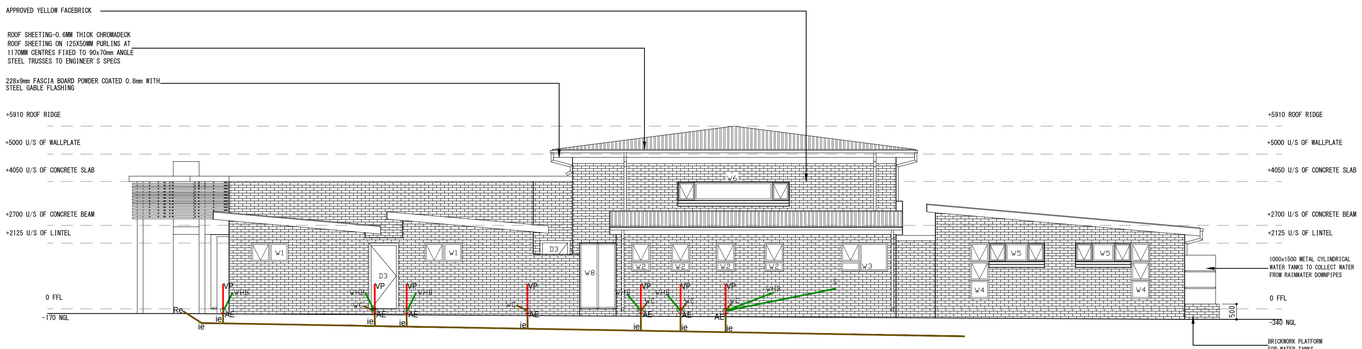
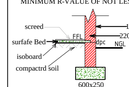


SOUTH ELEVATION
scale 1:100

NORTH ELEVATION
scale 1:100

UNDERFLOOR INSULATION

4.4.2 FLOORS
NOTE: WHERE AN UNDER FLOOR HEATING SYSTEM is e.g. in screed, under laminate heating, under carpet heating, undertile heating, and water based under floor heating) IS INSTALLED, THE HEATING SYSTEM SHALL BE INSULATED UNDERNEATH THE SLAB WITH INSULATION THAT HAS A MINIMUM R-VALUE OF NOT LESS THAN 1.0.



PERIMETER INSULATION

BUILDINGS WITH A FLOOR AREA OF LESS THAN 500mm WITH A CONCRETE SLAB ON GROUND SHALL THE VERTICAL EDGE OF THE PERIMETER:
a) have an R-value of not less than 1.0
b) resist water absorbtion in order to retain its internal properties and
c) be continuous from the adjacent finished ground level
 i) is a depth of less than 300mm or
 ii) for the full depth of the vertical edge of the concreteslab on ground.

NOTE: CARE SHOULD BE TAKEN TO ENSURE ANY REQUIRED TERMITE MANAGEMENT SYSTEM NOT COMPROMISED BY SLAB EDGE INSULATION

EXTRUDED POLYSTERENE - ISOBOARD ON EXPANDED POLYSTERENE IS RECOMMENDED OR ANY OTHER SIMILAR INSULATION WITH A R-VALUE 1.0

NOTES

1. ALL SHOWERS TO BE FITTED WITH BRASS TRAPS
2. GEYSERS TO COMPLY WITH SABS 0254
3. ANTI VAC TRAPS TO ALL WASTE FITTINGS 3M OR LONGER
4. SCREEN WALLS AROUND DRYING YARD TO BE 2.1M HIGH
5. 450x450 FIBRE CEMENT ACCESS PANEL TO ALL DRAINAGE DUCTS
6. ALUMINIUM STRIPS TO ALL TILED EDGING.
7. RAINSHIELD WATERPROOFING TO THE TOPS OF CHIMNEYS AND ALL EXPOSED PLASTER SURFACES.
8. DPC UNDER ALL WINDOW CILLS
9. PLINTH MAX. 850 ABOVE NGL.
10. NO FIBRE HYDRANT ON PAVEMENT.
11. GENERATORS, SOLAR PANELS AND AIR CONDITIONING TO BE INSTALLED ACCORDING TO GUIDELINES.
12. ALL WOOD TO COMPLY WITH 10163 OF SANS 10400.
13. ALL ROOFS AND SLABS ACCORDING TO ENGINEER's SPECIFICATIONS.

HOT WATER PLAN NOTE

A MINIMUM OF 50% BY VOLUME OF THE ANNUAL AVERAGE OF HOT WATER HEATING REQUIREMENT SHALL BE PROVIDED BY MEANS OF OTHER THAN ELECTRICAL RESISTANCE HEATING.
ALL HOT WATER PIPES TO BE INSULATED

EXTERNAL WALL CALCULATIONS

PARAMETERS
MINIMUL THERMAL RESITIVITY — R-value = 0.35
CLIMATIC ZONE — c.zone = 2

	conductivity (w/m.k)	thickness (mm)	resistivity (mK/w)
EXTERNAL PLASTER WORK	0.6	10	0.4
BRICKWORK	0.7	230	0.4
INTERNAL PLASTER WORK	0.6	10	0.4
TOTAL	1.9	240	0.7

CONCLUSION
The two designs complies with the requirement of SANS 10400-XA-2011 for external walls.

ROOF ASSEMBLY CALCULATIONS

ACCORDING TO SANS 10400-XA & SANS 204 THE MINIMUM THERMAL RESISTIVELY VALUE

Conc. cladding @ 22-45° pitch w/ horiz. ceiling

NOTES	Climate zone	total required resistivity R = m²K/W	direction
Total R-VALUE is a combination of roof assembly & insulation	1	0.35	UP
R-VALUE of roof & ceiling material calculated for metal roof sheets & plaster board ceiling		0.05	
Minimum value of added thermal resistivity for required insulation		3.3	

THE 50mm ISOTHERM AS SPECIFIED HAVE A R-VALUE OF 1.1 AND IS NOT SUFFICIENT FOR THE DESIGN TO COMPLY TO SANS 10400-XA: 2011
TO ACHIEVE THE THERMAL RESISTIVITY OF 2.8, ONE OF THE FOLLOWING IS RECOMMENDED:
1. PINK AEROLITE, GLASSWOOL THERMAL & ACOUSTIC CEILING INSULATION WITH A MINIMUM THICKNESS OF 115mm WHICH HAS A R-VALUE OF 2.8
2. A COMBINATION OF PINK AEROLITE & A REFLECTIVE FOIL CAN ALSO BE USED PROVIDED THAT THE R-VALUE OF THE COMBINATION IS GREATER THAN 2.8
3. ECO-INSULATIONS CELLULOSE FIBRE CEILING INSULATION WITH A MINIMUM THICKNESS OF 100mm

NOTE:
THE ABOVE POINT IS A RECOMMENDATION ONLY.
ANY INSULATION CAN BE USED AS LONG AS THERMAL RESISTIVITY OF THE MATERIAL TO BE USED IS MORE THAN 2.8

CONCLUSION
THE TWO DESIGNS COMPLES WITH SANS 10400-XA-2011 IF THE ABOVE CONDITIONS ARE MET.

ENERGY EFFICIENCY IN BUILDING

EXTERNAL WALLS

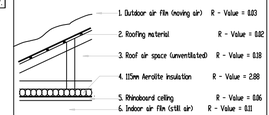
o-value to be 40 hours with the r-value of 1.9

HOT WATER SERVICE

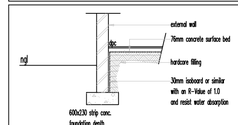
*1A minimum of 50% of the annual average heating requirement for hot water must be provided by means other than electric resistance heating (keyser) or fossil fuels
oOser options below but not only limited to these:
*Solar heating
*Heat pumps
*Geothermal heat
*Renewable combustible fuel
*Heat recovery from oltemative systems and processes
*The functional requirements of sub-regulation 1A2 shall be satisfied when:
o14.1.1 The population for which such building is designed is determined in accordance with Regulation A21;
o14.1.2 The hot water demand is determined in accordance with table 2 and table 5 of SANS 10252-1:2004;
o14.1.3 The storage requirement is based on maintenance of a hot water temperature of 60 0C;
o14.1.4 Solar water heating systems shall comply with SANS 1307, SANS 10106 and SANS 10254 based on the thermal performance determined in accordance with the requirements of SANS 6211-1 and SANS 6211-2.
o14.1.5 All exposed hot water service pipes (SANS 10252-1) shall be clad with insulation with a minimum R-value in accordance with SANS 204.
o14.1.6 Thermal insulation, if any, shall be installed in accordance with the manufacturer's instructions.

All exposed hot water pipes with o 80 mm diameter
*Must be insulated with a minimum R-value of 1.00
All exposed hot water pipes with o diameter greater than 80 mm diameter
*Must be insulated with a minimum R-value of 1.50

R- Value For Roof In Climate Zone 2: 3.2



Total R - Value = 3.28 m2.K/W



TYPICAL PERIMETER INSULATION

GENERAL NOTES:
- ALL WORK TO COMPLY WITH NBR AND LOCAL BY-LAWS.
- REFER TO GIVEN DIMENSIONS ONLY.
- CONSULT THE AUTHOR IN CASE OF ANY UNCERTAINTIES.
- THE CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING.
- IF THERE ARE AMENDEMENTS AFTER THIS PLAN IS APPROVED. THE OWNER OR CONTRACTOR (WHOEVER MADE THE DECISION) WILL BE LIABLE FOR ARCHITECTUTAL AND MUNICIPAL FEES IN ORDER FOR US TO HELP WITH AMENDED PLAN.
- COPYRIGHT IS RESERVED TO WANTHLA ARCHITECTScc.

ROOF: TIMBER TRUSS ROOF NOTES
- 7-12° ROOF PITCH WITH IBR SHEETING, WITH SABS APPROVED UNDERLAY.
- 76 x 50mm PURLINS ON PVC UNDERLAY.
- TRUSSES FROM S.A. PINE AT 1200mm CENTRES FASTENED SECURELY WITH 2 WIRES OF 4mm (EMBEDDED AT LEAST 300mm INTO BRICKWORK WITH CONNECTING DEVICES ACCORDING TO SCHEDULE 1 OF SABS 0400. TABLE L2
- ALL WEB MEMBERS TO BE MINIMUM 38 x 114mm GRADE 5 WITH EQUAL THAN 1500mm. APPROVED BRACINGS, MUST PREVENT BUCKLING AND KEEP TRUSSES UPRIGHT.
- VALLEY AND HIP RAFTERS TO BE GRADE 7, 50 x 228mm S.A. PINE.
- LAMINATED TIMBER TO COMPLY WITH SABS 876.
- 50mm GLASS FIBRE INSULATION TO BE INSTALLED ON CEILING.

FLOORS AND WATERPROOFING
- SURFACE BED TO BE MINIMUM 85mm THICK 20MPa CONCRETE PERFECTLY LEVEL AND AT MINIMUM 150mm ABOVE GROUND ON PROPERLY COMPACTED HARDCORE FILL
- 25mm THICK SCREED AND FINISHES AS INDICATED.
- SUSPENDED CONC. FLOOR SLABS TO ENGINEER`S DETAILS AND SPECIFICATIONS.
- DPC UNDER ALL WALLS (EXCEPT FREE STANDING), FLOORS AND WINDOW SILLS AND TO ALL VERTICAL CHANGES IN FLOOR LEVELS.
- FLASHING TO ALL PARAPETS AND CHANGES IN ROOF LEVELS.
- ATRIUMS AND COURTYARDS TO BE FITTED WITH AT LEAST 1 x 50mm= OUTLET PIPES FROM CATCHPIT FITTED WITH GRATING AND SILT TRAPS.
- PLANTERS TO BE WATERPROOFED AND DRAINAGE INSTALLED.

FOUNDATIONS, BRICKWORK AND PARTITIONS
- ALL FOUNDATIONS TO BE 25MPa CONCRETE AT LEAST 230 x 700mm MINIMUM 200mm UNDERGROUND TO ENGINEER`S DETAILS AND SPECIFICATIONS.
- BOUNDARY WALLS` FOUNDATION MUST NOT ENCROACH ON BOUNDARY LINE AND WALLS ARE TO BE PLASTERED AND PAINTED ON THE INNER WALL.
- PARAPET WALLS TO BE AT LEAST 300mm HIGH AND MINIMUM 500mm WITH BRICKFORCE IN EVERY COURSE.
- ALL SCREEN WALLS TO BE AT LEAST 1800mm HIGHABOVE GROUND LEVEL.
- LINTOLS TO BE SUPPORTED MINIMUM 150mm FOR OPENINGS UP TO 4800mm, BRICKFORCE TO BE BUILT IN EVERY COURSE BELOW FLOOR LEVEL AND ABOVE WINDOW LEVEL, EVERY THIRD COURSE BETWEEN IN-CONTINUOS BANDS.

STAIRS AND BALUSTRADES
- STAIRS TO BE 750mm MINIMUM WIDTH, TREADS 300mm, RISERS 170mm WITH 6mm MAX. DEVIATION.
- 1000mm HIGH BALUSTRADES TO ALL STAIRS AND BALCONIES.
- MAXIMUM 3000mm VERTICAL RISE PER FLIGHT, WINDERS WHERE SHOWN, TO BE AT LEAST 250mm WIDE, 450mm FROM THE NARROW END AND ANGLE BETWEEN THE RISERS TO BE CONSTANT.
- MINIMUM HEADROOM TO BE 2100mm MEASURED FROM PITCHLINE.
- GLASS BALUSTRADES (IF SHOWN) TO BE SAFETY GLASS.

GLAZING (AS PER NBR PART `N`)
- ALL PANE SIZES AND THICKNESS AS DESCRIBED ON WINDOW SCHEDULE.
- BATHROOM WINDOWS TO BE FROSTED GLASS.
- ALL GLAZING ON DOORS TO BE SAFETY GLASS.
- GLAZED AREA LESS THAN 300mm ABOVE FFL TO BE COV. WITH SAFETY GLASS.
- ALL GLAZED AREA TO COMPLY WITH SANS 204.

DRAINAGE
- 110mm= uPVC SOIL PIPES TO FALL 1:50
- RESEAL TRAPS TO ALL WASTE FITTINGS AND GULLEYS.
- 50mm= WASTE PIPES.
- DRAINAGE TO HAVE A MINIMUM INVERT LEVEL OF 450mm BELOW THE NATURAL GROUND LEVEL.
- REINFORCED FOUNDATIONS OVER SOIL PIPES, WHERE PIPES ARE LAID UNDERNEATH BUILDING.
- ALL DRAINAGE TO COMPLY WITH SECTION `P` OF NBR.

FIRE NOTE
- BUILDING TO COMPLY WITH SANS 10400 `T` : 2011` 4.9.2
- NO COMBUSTIBLE ROOF COMPONENTS SHALL PENETRATE THE SEPARATING ELEMENT DIVIDING THE SPACE BETWEEN THE GARAGE AND THE HABITABLE ROOMS.

ISSUE FOR TENDER

REVISION No	DATE :	DESCRIPTION:
1	05/11/21	REDUCED AREA SIZE OF LIBRARY

REVISIONS

SIZE ON ORIGINAL DRAWING 100 mm

CONSTRUCTION OF MAKUWA LIBRARY

PROJECT NAME:
CONSTRUCTION OF MAKUWA LIBRARY

CLIENT:
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PO BOX 206
BURGERSFORT 1150
FETAKGOMO - GREATER TUBATSE LOCAL MUNICIPALITY

DISCIPLINE
ARCHITECTURAL

WORK DESCRIPTION
NEW LIBRARY

DRAWING DESCRIPTION
ELEVATIONS

FILE No.			
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SCALE	AS SHOWN	SS MOGALE	CHECKED

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
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CONTRACTOR :

CADD SYSTEM	AUTOCAD		FILE NAME
SIZE	DRAWING NUMBER		REV
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