

CLASS OF OCCUPANCY	H4	SANS 'A' Table 1 Pg 43 & 44	SHGC	Table	6	Pg14
Climatic Zone	5	SANS 204 Fig A1 Pg 30	Glazing	Table	6	Pg14
Direction of Heat Flow	DOWN	SANS 204 Table 10 Pg 20	G	Figure	3	Pg 16
NETT Floor Area = NFA (m <sup>2</sup> )	228.750	SEE FLOOR PLAN/S	P	Figure	3	Pg 16
Total Fenestration Area = FA (m <sup>2</sup> )	25.290	SEE FENESTRATION CONDUCTION CALC	Shading	Figure	4	Pg 17
Ratio Percentage (%) Total	11.056	FA/NFAx100 (m <sup>2</sup> )	H	ELEMENT HEIGHT + G (m)		
15% of NFA	34.313	NFA x 0.15 (m <sup>2</sup> )	E	Table	C5	Pg 42
Orientation: Longer Building Axis	SEE SITE AND/OR FLOOR PLAN/S					
Ratio Percentage (%) Total	<15% of NFA complies with SANS 204 and > 15% of NFA must comply with SANS 204 by calculations					
Conduction Constant = Cu	1.40	SHGC constant = Cshgc		0.11		
Conduction Max. = NFA x Cu	320.250	Solar Heat Gain Max = NFA x Cshgc		25.163		

FENESTRATION CONDUCTION:										
Width and Height = Element Dimensions / U and SHGC = SANS 204 Table 6 Pg 14										
Element	Opening Width (m)	Opening Height (m)	Area - A (FA m <sup>2</sup> )	Glazing Description Table 6	Frame Description	Glass Thk (mm)	U W/m <sup>2</sup> k	SHGC	Conduction = A x U	
D1	0.900	2.100	1.890	TSG	ALUM	4	2.40	0.51	4.536	
D1	0.900	2.100	1.890	TSG	ALUM	4	2.40	0.51	4.536	
W1	1.800	0.900	1.620	TSG	ALUM	4	2.40	0.51	3.888	
W2	1.800	1.200	2.160	TSG	ALUM	5	2.40	0.51	5.184	
W3	1.500	1.200	1.800	TSG	ALUM	4	2.40	0.51	4.320	
W4	1.200	0.900	1.080	TSG	ALUM	4	2.40	0.51	2.592	
W5	1.200	1.200	1.440	TSG	ALUM	4	2.40	0.51	3.456	
W5	1.200	1.200	1.440	TSG	ALUM	4	2.40	0.51	3.456	
W6	1.500	0.900	1.350	TSG	ALUM	4	2.40	0.51	3.240	
W7	1.800	1.200	2.160	TSG	ALUM	5	2.40	0.51	5.184	
W7	1.800	1.200	2.160	TSG	ALUM	5	2.40	0.51	5.184	
D2	1.500	2.100	3.150	TSG	ALUM	5	2.40	0.51	7.560	
D2	1.500	2.100	3.150	TSG	ALUM	5	2.40	0.51	7.560	
TOTAL FA (m <sup>2</sup> ) =	25.290				TOTAL CONDUCTION =		60.696			
					Max. Conduction Permissible					320.250

FENESTRATION SOLAR HEAT GAIN: SHG									
P and H and G = SANS 204 Figure 3 & 4 Pg 16 and 17 / E = SANS 204 Table C5 Pg 42 / If G > 500: USE 1/2 OF P VALUE									
Element	Area - A (FA m <sup>2</sup> )	G (m)	P (m)	H = Ht + G (m)	P/H	Orientation	SHGC	E (m <sup>-2</sup> )	A x SHGC x E
D1	1.890	1.700	0.500	3.800	0.132	SW	0.51	1.03	0.993
D1	1.890	1.700	0.500	3.800	0.132	SW	0.51	1.03	0.993
W1	1.620	1.700	0.500	2.600	0.192	SW	0.51	0.97	0.801
W2	2.160	0.200	0.500	1.400	0.357	NE	0.51	0.49	0.540
W3	1.800	0.900	0.500	2.100	0.238	SE	0.51	0.90	0.826
W4	1.080	0.200	0.500	1.100	0.455	NE	0.51	0.43	0.237
W5	1.440	0.200	0.500	1.400	0.357	NE	0.51	0.48	0.353
W5	1.440	0.200	0.500	1.400	0.357	NE	0.51	0.48	0.353
W6	1.350	0.200	0.500	1.100	0.455	NE	0.51	0.43	0.296
W7	2.160	1.700	0.500	2.900	0.172	SW	0.51	0.56	0.617
W7	2.160	1.200	0.500	2.400	0.208	SW	0.51	0.56	0.617
D2	3.150	1.200	0.500	3.300	0.152	NW	0.51	0.65	1.044
D2	3.150	1.200	0.500	3.300	0.152	NW	0.51	0.65	1.044
TOTAL SOLAR HEAT GAIN =							8.713		
Max. SHG Permissible =							25.163		

**WALL**

MASONRY WALLS				
MATERIAL - SANS 10400-XA 4.4.3 Pg 10 AND SANS 204(4.3.3 Pg10)				
EXTERNAL SKIN /OR	140mm (DOUBLE LEAF) STD. CONCRETE BRICKS (COMPLIES WITH THE R-VALUE REQUIREMENTS - PART XA: 4.4.3)			
EXTERNAL SKIN /OR	110mm (SINGLE LEAF) MAXI CONCRETE BLOCKS (COMPLIES WITH THE R-VALUE REQUIREMENTS - PART XA: 4.4.3)			
EXTERNAL SKIN	2 x 115mm OR > (DOUBLE SKIN) CLAY BRICKS (COMPLIES WITH THE R-VALUE REQUIREMENTS - PART XA: 4.4.3)			
MIN. REQUIREMENTS (SANS 10400-XA 4.4.3 Pg 10)	0.35	TOTAL R VALUE (m <sup>2</sup> K/W)	0.35	

**ROOF & CEILING (HEAT FLOW = DOWN) - SANS 204 Table F3 Pg 60 & 61**

SKILLION ROOF - TILES, METAL CLADDING & APPLIED WATERPROOFING MEMBRANE - > 22° PITCH			
OUTDOOR AIR FILM 7m/s			0.03
METAL CLADDING (SANS XA Table 8 Pg 11)			0.00
REFLECTIVE FOIL SISALATION UNDERSIDE METAL CLADDING (SANS 204 Table 9 Pg 19)			1.06
ROOF AIR SPACE (30mm TO 100mm)			0.22
100mm FLEXIBLE FIBREGLASS BLANKET (10 -18 Kg/m <sup>3</sup> ) SANS 204 Table 10 Pg 20			2.15
SUSPENDED CEILING 10mm GYPSUM BOARD (880 Kg/m <sup>3</sup> )			0.07
INDOOR AIR FILM (STILL AIR)			0.11
(MIN. REQUIREMENTS - SANS 204 Pg 17 Table 8)	2.70	TOTAL R VALUE (m <sup>2</sup> K/W)	3.64

**FLOOR**

STEEL FRAME FLOOR JOIST - SUSPENDED TENANCY SEPARATING FLOOR			
MULTI STOREYS CONCRETE BEAMS & BLOCKS FLOOR - WITHOUT HEATING SYSTEM			
SURFACE BED	255mm 25Mpa CONCRETE BEAMS & BLOCKS FLOORS (2400 Kg/m <sup>3</sup> )		
RE-INFORCING	BRC MESH 393		
WATERPROOFING	250 MICRONS POLYETHYLENE SHEETING WITH 300mm OVERLAPS		
MIN. REQUIREMENTS NOT APPLICABLE TO ZONE 5 (SANS 204 4.3.2 Pg 10)			

**LIGHTING AND POWER**

TOTAL FLOOR AREA (m <sup>2</sup> )	516.250	TFA	SEE SCHEDULE OF AREAS
CLASS OF OCCUPANCY	H4	CO	SANS PART 'A' - Table 1 Pg 43 & 44
ENERGY DEMAND (W/m <sup>2</sup> )	5	ED	SANS 204 Table 12 Pg 24
ENERGY CONSUMPTION (kWh/m <sup>2</sup> )	5	EC	SANS 204 Table 12 Pg 24
MAX. ENERGY DEMAND ALLOWED	2581	W/m <sup>2</sup>	TFA x ED
MAX. ENERGY CONSUMPTION ALLOWED	2581	K/Wh/m <sup>2</sup>	TFA x EC
ELEMENT	W	No. IN USE	TOTAL W
DOWN LIGHT	60	48	2880
FLOOD LIGHT	120	6	720
TOTAL ENERGY DEMAND - TED (W/m <sup>2</sup> )			3600
TOTAL ANNUAL ENERGY CONSUMPTION (KWh/m <sup>2</sup> )			9198.00
			TED x 7 Hrs x 365 DAYS/1000

**HOT WATER SERVICES**

SANS 10252-1:2004 AND SANS 10400-XA 4.1 AND SANS 204 4.5.22			
CLASS OF OCCUPANCY	H4	SANS PART 'A' - Table 1 Pg 43 & 44	
No. OF PERSONS	8	OCCUPANCY POPULATION - PART XA: Pg 9 Table 5	
HOT WATER CONSUMPTION PER DAY PER PERSON (Litres)	25	ASSUMED DAILY AVERAGE CONSUMPTION	
TOTAL HOT WATER CONSUMPTION PER DAY (Litres)	200	No. OF PERSON x LITRES PER DAY	
50% OF TOTAL HOT WATER CONSUMPTION PER DAY (Litres)	100	50% OF No. OF PERSON x LITRES PER DAY	
TOTAL HOT WATER CONSUMPTION PER ANNUM - 365 Days (Kilolitres)	73	STANDARD TANK SIZES AVAILABLE -	
HOT WATER PIPE INTERNAL DIAMETER (mm)	25	RESIDENTIAL = 50 / 100 / 150 / 200 / 250	
HOT WATER PIPE MATERIAL	COPPER		
EXISTING ELECTRIC GEYSER (Litres)	0	EXISTING SOLAR GEYSER (Litres)	0
HOT WATER SUPPLY APPARATUS		50% NON-ELECTRIC HOT WATER SUPPLY APPARATUS	
PROPOSED ELECTRIC GEYSER (Litres)	0	PROPOSED SOLAR GEYSER (Litres)	150
PIPEWORK INSULATION (Min allowed R Value = 1)		ECO-FLEX GLASS WOOL SNAP-ON INSULATION TUBING	1.00
ELECTRIC GEYSER INSULATION (Min allowed R Value = 2)		110mm THICK "ISOTHERM" FLEXIBLE POLYESTER BLANKET	2.29
DEEMED TO SATISFY GENERIC INSULATION PRODUCTS: SANS 204 Pg 20 Table 10/ PIPES: MIN REQUIREMENTS= SANS 204 Pg 25 Table 13			
ALL GEYSERS AND HEAT PUMPS INSTALLED BY SPECIALISTS AS PER MANUFACTURERS INSTRUCTIONS (INCL. COMPLIANCE CERTIFICATE)			

Engineer . . . . .  
Address . . . . .  
Company . . . . .

Location of Boundary Pegs to determine Site Boundary is owners responsibility.

All levels and dimensions to be checked on site prior to commencement of work by builder.

**Fenestration Schedule**  
TSS Property Investments (Pty) Ltd  
35 Jackson Road  
Portion 313/665  
Bluff

Drawn : Gail Gillings  
41 Kew Gardens  
13 Kew Avenue, Westville  
Tel: 0836459766  
email: thedrawingbroad@gmail.com  
Date : June 2023

Owner . . . . .  
Plan No. 2023/06



