



Appendix A

DEFAULT DESIGN DATA

A.1 INTRODUCTION

This appendix provides the typical South African wall, roof and floor constructions as well as other default design data used in the preliminary architectural design tool. A material database is also provided. The different construction configurations are defined in terms of this database.

A.2 MATERIAL DATABASE

Code No.	Description	k W/(m K)	ρ kg/m ³	C _p kJ/(kg K)
0	Acoustic tile	0.061	481	0.84
1	Acoustone	0.080	258	1.00
2	Asbes/cement shingles	0.270	1900	1.00
3	Asbestos Cement Pressed	0.620	2100	0.83
4	Asbestos Cement Unpressed	0.480	1830	0.84
5	Ashcrete	0.330	753	1.20
6	Asphalt Shingles	0.125	1100	1.26
7	Asphalt	1.230	2243	1.67
8	Bitumen	0.160	1050.000	0.84
9	Brickwork (common)	0.727	1922	0.84
10	Carpet	0.045	120.000	1.00
11	Cast concrete h.w.	1.737	2243	0.84
12	Cast concrete l.w.	0.173	641	0.84
13	Concrete block h.w.	0.813	977	0.84
14	Concrete block h.w.	1.038	977	0.84
15	Concrete block l.w. (filled)	0.138	288	0.84
16	Concrete block h.w. (filled)	0.588	849	0.84
17	Concrete block l.w.	0.381	609	0.84
18	Concrete block l.w.	0.571	609	0.84
19	Concrete Panels	0.930	2300.000	0.65
20	Corrugated Iron	7870.000	447	0.80
21	Ergolite	0.040	16	0.84
22	Expanded Polystyrene	0.035	25	1.40
23	Face brick	1.333	2002	0.92
24	Felt Undercarpet	0.045	120	1.00
25	Fibreboard	240.000	0.058	1.46
26	Fibreglass	0.045	12	1.00
27	Fibretone	0.036	84	1.00
28	Glass	0.750	2483	0.67
29	Glass Wool	0.040	25	1.00
30	Granite	2.930	2643.000	0.92

Table A.1 - Material database [1,2]



Code No.	Description	k W/(m K)	ρ kg/m ³	C _p kJ/(kg K)
31	Gypsum Plaster Board	0.160	950	0.84
32	Hardboard	0.200	1121	1.36
33	Insulation	0.043	91	0.84
34	Metal facing	44.998	7689	0.42
35	Mild Steel	53.000	7850	0.50
36	Paper Honeycomb	0.180	1.1	1.00
37	Perlite	0.130	640	0.42
38	Perlite Honeycomb	0.110	66	1.00
39	Plaster	0.480	1442	0.88
40	Preformed Slab W&C	1.280	352	0.80
41	PVC Floor Covering	0.400	120	1.00
42	Q-Lite Translucent	0.220	2400	0.80
43	Sand Building	0.300	1500	0.84
44	Slate	1.400	2500	0.75
45	Soil	0.850	1500	1.50
46	Steves	0.004	50	0.96
47	Stone	2.800	2400	0.79
48	Stucco	0.692	1858	0.84
49	Subfloor	0.115	512	0.80
50	Tiles Asphalt	1.230	243	1.46
51	Tiles Burnt Clay	0.840	1922	0.92
52	Tiles Linoleum	0.350	1750	1.26
53	Vermiculite	0.065	100	0.88
54	Wood Hardwood	0.150	720	1.63
55	Wood Pine	0.150	660	1.40
56	Wood Ply-	0.140	530	1.40
57	Wood Teak	0.170	700	1.40

Table A.1 - Material database (Continued)

Some construction configuration incorporates the use of an airspace. The thermal properties of these “building materials” are defined in terms of its thermal resistance R per unit area.

Code No.	Description	R (m K) / W
54	Air space resistance	0.161
55	Airspace ceiling	0.176

Table A. 2 - Airspace thermal resistance



A.3 STANDARD WALLS

No.	Description	Layer Codes	Thickness	α^1
		Outside to Inside	Outside to Inside	%
A	Brickwork			
1	Single brick	1,9	110	75
2	Single brick with 13mm plaster	2,9,35	110,13	75
3	Double brick	2,9,9	110,110	75
4	Double brick with 13mm plaster	3,9,9,35	110,110,13	75
5	Double brick, airspace, 10mm plasterboard	4,9,9,54,27	110,110,50,10	75
6	Brick, airspace brick with 13mm plaster	4,9,54,9,35	110,50,110,13	75
B	Stone			
7	Stone	1,47	200	70
8	Stone, 13mm plaster	2,43,35	200,13	70
9	stone, airspace, 10mm plasterboard	3,43,54,27	200,50,10	70
C	Concrete blocks			
10	100mm l.w. concrete block with 13mm plaster	2,12,35	100,13	65
11	100mm l.w. concrete block, airspace, 10mm plasterboard	3,12,54,27	100,50,10	65
12	200mm l.w. concrete block with 13mm plaster	2,13,35	200,13	65
13	200mm l.w. concrete block, airspace, 10mm plasterboard	3,13,54,27	200,50,10	65
D	Cast Concrete and Pre Cast Panels			
14	150mm l.w. cast concrete	1,11	150	65
15	200mm l.w cast concrete	1,11	200	65
16	150mm l.w. cast concrete, 50mm wood wool slab, 13mm plaster	3,11,21,35	150,50,13	65
17	200mm l.w cast concrete, 50mm wood wool slab, 13mm plaster	3,11,21,35	200,50,13	65
E	Face Brick			
18	Face Brick	1,19	100	75
19	Face Brick 10mm plasterboard	2,19,27	100,10	75
20	Face brick, common brick with 13mm plaster	3,19,9,35	100,110,13	75
21	Face brick, common brick, airspace, 10mm plasterboard	4,19,9,54,27	100,110,50,10	75
22	Face brick, airspace, common brick, 13mm plaster	4,19,54,9,35	100,50,110,13	75
23	Face brick, l.w. concrete block with 13mm plaster	3,19,12,35	100,100,13	75
24	Face brick, l.w. cast concrete, 13mm plaster	3,19,11,35	100,150,13	75
F	Brickwork + Material X			
25	13mm plaster, brick, face brick	3,35,9,19	13,110,100	60
26	13mm plaster, brick, airspace, face brick	4,35,9,54,19	13,110,50,100	60
27	13mm plaster, brick, l.w. concrete block, 13mm plaster	4,35,9,12,35	13,110,100,13	60
28	13mm plaster, brick, airspace, l.w. concrete block, 13mm plaster	5,35,9,54,12,35	13,110,50,100,13	60
29	13mm plaster, brick, l.w. cast concrete	3,35,9,11	13,110,150	60
30	13mm plaster, brick, airspace, l.w. cast concrete	4,35,9,54,11	13,110,50,150	60

Table A. 3 - Standard wall configurations

¹ Absorptance



No.	Description	Layer Codes	Thickness	α %
		Outside to Inside	Outside to Inside	
G	Stone + Material X			
31	Stone, brick, 13mm plaster	2,43,9,35	100,100,13	70
32	Stone, airspace, brick 13mm plaster	4,43,54,9,35	100,50,110,13	70
33	Stone, l.w. concrete block, 13mm plaster	3,43,12,35	100,100,13	70
34	Stone, airspace, l.w. concrete block, 13mm plaster	4,43,54,12,35	100,50,100,13	70
35	Stone, l.w. cast concrete	2,43,11	100,150	70
36	Stone, airspace, l.w. cast concrete	3,43,54,11	100,50,150	70
H	100mm Concrete block + Material X			
37	13mm plaster, 100mm l.w. conc. block, face brick	3,35,12,19	13,100,100	60
38	13mm plaster, 100mm l.w. conc. block, airspace, face brick	4,35,12,54,19	13,100,50,100	60
39	100mm l.w. conc. block, 100mm l.w. conc. block, 13mm plaster	3,12,12,35	100,100,13	65
40	100mm l.w. conc. block, airspace 100mm l.w. conc. block, 13mm plaster	4,12,54,12,35	100,50,100,13	65
41	100mm l.w. conc. block, 150mm l.w. cast conc. , 13mm plaster	3,12,11,35	100,150,13	65
42	100mm l.w. conc. block, airspace 150mm l.w. cast conc., 13mm plaster	4,12,54,11,35	100,50,150,13	65
I	150mm Cast Concrete + Material X			
43	150mm l.w. cast conc., face brick	2,11,19	150,100	65
44	150mm l.w cast conc., airspace, face brick	3,11,54,19	150,50,100	65
45	150mm l.w. cast conc., 100mm l.w. conc. block, 13mm plaster	3,11,12,35	150,100,13	65
46	150mm l.w. cast conc., airspace 100mm l.w. conc. block, 13mm plaster	4,11,54,12,35	150,50,100,13	65
47	150mm l.w. cast conc., 100mm cast conc. , 13mm plaster	3,11,11,35	150,100,13	65
48	150mm l.w. cast conc., airspace 100mm cast conc. , 13mm plaster	4,11,54,11,35	150,50,100,13	65
J	Corrugated Iron + Material X			
49	24 Gauge Corrugated Iron	1,16	2	70
50	24 Gauge Corrugated Iron, airspace, 13mm Ins. Board	3,16,54,21	2,50,13	70
51	24 Gauge Corrugated Iron, airspace, 20mm Wood	3,16,54,51	2,50,20	70
K	Wood			
52	20mm Wood	1,50	20	70
53	20mm wood, airspace, 10mm plasterboard	3,50,54,27	20,50,10	70
L	Partition wall			
54	Metal facing, glass/wood/cotton fibre, metal facing	3,30,22,30	2,50,2	70
55	Metal facing, paper honeycomb, metal facing	3,30,32,30	2,50,2	70
56	Metal facing, paper honeycomb with perlite fill, metal facing	3,30,34,30	2,50,2	70
57	Metal facing, fibreboard, metal facing	3,30,21,30	2,50,2	70
58	Metal facing, wood shredded, metal facing	3,30,52,30	2,50,2	70
59	Metal facing, expanded vermiculite, metal facing	3,30,49,30	2,50,2	70
60	Metal facing, perlite, metal facing	3,30,33,30	2,50,2	70
61	25mm plasterboard, 25mm airspace, 25mm plasterboard	3,27,54,27	25,25,25	70
62	12mm fibreboard, 25mm airspace, 12mm fibreboard	3,21,54,21	12,25,12	70

Table A. 3 - Standard wall configurations (Continued)

A.4 STANDARD ROOFS

Roof types that include insulation are not represented in this table in order to save space. Insulated roofs have an additional fifty millimetres of insulation (material 29).

No.	Description	Layer Codes	Thickness	α	ϵ_r^2
		Outside to Inside	Outside to Inside	%	%
A	Metal Deck				
1	Steel deck	1,31	2	70	90
2	Steel deck, airspace, 20mm plaster or gypsum ceiling	3,31,55,27	2,300,20	70	90
3	Steel deck, airspace, acoustic tile	3,31,55,0	2,300,19	70	90
B	Pre-Cast slabs				
4	Precast slab	1,36	150	65	90
5	Pre-cast slab, airspace, 20mm plaster or gypsum ceiling	3,36,55,27	150,300,20	65	90
6	Pre-cast slab, airspace, acoustic tile	3,36,55,0	150,300,19	65	90
7	19mm asphalt, 75mm screed, pre-cast slab	3,8,35,36	19,75,150	55	5
8	19mm asphalt, 75mm screed, pre-cast slab, airspace, 20mm plaster or gypsum ceiling	5,8,35,36,55,27	19,75,150,300,20	55	5
9	19mm asphalt, 75mm screed, pre-cast slab, airspace, acoustic tile	5,8,35,36,55,0	19,75,150,300,19	55	5
D	150mm l.w. cast concrete				
10	150mm l.w. concrete	1,11	150	65	90
11	150mm l.w. concrete, airspace, 20mm plaster or gypsum ceiling	3,11,55,27	150,300,20	65	90
12	150mm l.w. concrete, airspace, acoustic tile	3,11,55,0	150,300,19	65	90
13	19mm asphalt, 75mm screed, l.w. concrete	3,8,35,11	19,75,150	55	5
14	19mm asphalt, 75mm screed, l.w. concrete, airspace, 20mm plaster or gypsum ceiling	5,8,35,11,55,27	19,75,150,300,20	55	5
15	19mm asphalt, 75mm screed, l.w. concrete, airspace, acoustic tile	5,8,35,11,55,0	19,75,150,300,19	55	5
16	Linoleum tiles, l.w. concrete	2,48,11	5,150	50	93.1
17	Linoleum tiles, l.w. concrete, airspace, 20mm plaster or gypsum ceiling	4,48,11,55,27	5,150,300,20	50	93.1
18	Linoleum tiles, l.w. concrete, airspace, acoustic tile	4,48,11,55,0	5,150,300,19	50	93.1
19	Carpet, l.w. concrete	2,10,11	5,150	50	30
20	Carpet, l.w. concrete, airspace, 20mm plaster or gypsum ceiling	4,10,11,55,27	5,150,300,20	50	30
21	Carpet, l.w. concrete, airspace, acoustic tile	4,10,11,55,0	5,150,300,19	50	30
E	Wood				
22	Hard wood	1,50	20	70	90
23	Hardwood, airspace, 20mm plaster or gypsum ceiling	3,50,55,27	20,300,20	70	90
24	Hardwood, airspace, acoustic tile	3,50,55,0	20,300,19	70	90

Table A. 4 - Standard roof configurations

² Long-wave emittance



No.	Description	Layer Codes	Thickness	α	ϵ_s
		Outside to Inside	Outside to Inside	%	%
F	Asphalt singles				
25	Asphalt shingles & 8mm pine wood	2,6,51	10,8	90	80
26	Asphalt singles, airspace, 20mm plaster or gypsum ceiling	3,6,55,27	10,300,20	90	80
27	Asphalt singles, airspace, acoustic tile	3,6,55,0	10,300,19	90	80
G	Asbestos-cement singles				
28	Asbestos-Cement Shingles & 8mm pine wood	2,2,51	10,8	65	90
29	Asbestos-cement singles, airspace, 20mm plaster or gypsum ceiling	3,2,55,27	10,300,20	65	90
30	Asbestos-cement singles, airspace, acoustic tile	3,2,55,0	10,300,19	65	90
H	Slate tiles				
31	Slates tile & 8mm pine wood	2,40,51	10,8	90	90
32	Slate singles, airspace, 20mm plaster or gypsum ceiling	3,44,59,31	10,300,20	90	90
33	Slate singles, airspace, acoustic tile	3,44,59,0	10,300,19	90	90
I	Sheet metal				
34	Sheet metal & 8mm pine wood	2,16,51	2,8	70	90
35	Sheet metal, airspace, 20mm plaster or gypsum ceiling	3,16,55,27	2,300,20	70	90
36	Sheet metal, airspace, acoustic tile	3,16,55,0	2,300,19	70	90
J	Wood singles				
37	Wood shingles & 25x100mm strips	2,50,52	10,25	70	90
38	Wood shingles & 8mm plywood	2,50,52	10,8	70	90
39	Wood shingles, airspace, 20mm plaster or gypsum ceiling	3,50,55,27	10,300,20	70	90
40	Wood shingles, airspace, acoustic tile	3,50,55,0	10,300,19	70	90

Table A. 4 - Standard roof configurations (Continued)



A.5 STANDARD FLOORS

No.	Description	Layer Codes	
		Inside to Outside	Thickness Inside to Outside
A	Concrete & Ground		
1	20 mm screed, 150 mm l.w concrete, ground	2,35,11	20,150
2	Linoleum tile, 150 mm l.w concrete, ground	2,48,11	5,150
3	Clay tile, 150mm l.w. concrete, ground	2,47,11	5,150
4	25 mm hardwood, 150 mm l.w. concrete, ground	2,50,11	5,150
5	Carpet, 150mm l.w. concrete, ground	2,10,11	5,150
B	150 mm l.w. concrete		
6	150 mm l.w. concrete	1,11	150
7	150 mm l.w. concrete, airspace, 20 mm plaster or gypsum ceiling	3,11,55,27	150,300,20
8	150 mm l.w. concrete, airspace, acoustic tile	3,11,55,0	150,300,19
9	Linoleum tiles, l.w. concrete	2,48,11	5,150
10	Linoleum tiles, l.w. concrete, airspace, 20 mm plaster or gypsum ceiling	4,48,11,55,27	5,150,300,20
11	Linoleum tiles, l.w. concrete, airspace, acoustic tile	4,48,11,55,0	5,150,300,19
12	Clay tiles, l.w. concrete	2,47,11	5,150
13	Clay tiles, l.w. concrete, airspace, 20 mm plaster or gypsum ceiling	4,47,11,55,27	5,150,300,20
14	Clay tiles, l.w. concrete, airspace, acoustic tile	4,47,11,55,0	5,150,300,19
15	Carpet, l.w. concrete	2,10,11	5,150
16	Carpet, l.w. concrete, airspace, 20 mm plaster or gypsum ceiling	4,10,11,55,27	5,150,300,20
17	Carpet, l.w. concrete, airspace, acoustic tile	4,10,11,55,0	5,150,300,19
18	Hardwood, l.w. concrete	2,50,11	5,150
19	Hardwood, l.w. concrete, airspace, 20 mm plaster or gypsum ceiling	4,50,11,55,27	5,150,300,20
20	Hardwood, l.w. concrete, airspace, acoustic tile	4,50,11,55,0	5,150,300,19
C	Wood		
21	Hard wood	1,50	20
22	Hardwood, airspace, 20 mm plaster or gypsum ceiling	3,50,55,27	20,300,20
23	Hardwood, airspace, acoustic tile	3,50,55,0	20,300,19
24	Carpet, hardwood, airspace, 20 mm plaster or gypsum ceiling	4,10,50,55,27	5,20,300,20
25	Carpet, hardwood, airspace, acoustic tile	4,10,50,55,0	5,20,300,19

Table A.5 - Standard floor configurations



A.6 DEFAULT DESIGN DATA

Table A.6 provides the default design data used in the preliminary thermal design tool. These values are typical design values for South African conditions and may thus vary depending on country. These values were obtained from various literature sources and experience [3,4,5,6].

Building type	Internal load (W/ m ²)	Occupancy (m ² / person)	Outdoor air (L/s/ person)	Operating hours	Setpoint
Office	26	10	10	07h00-18h00	24 S ; 22 W
Dep. stores	Varies ³	Varies	7.5	09h00-18h00	24 S ; 22 W
Hotels	32	38	7.5	24 hours	27 S ; 22 W
Residences	8	38 Night time 114 Day time ⁴	7.5 ⁵	06h00-8h00 (W) 13h00-22h00 (S)	27 S ; 22 W
Hospital	Varies ³	10	11	24 hours	24 S ; 22 W
Factory	Varies ³	100	15 ⁶	07h00-18h00	26 S ; 20 W
Places of assembly	12	7 (Winter) ⁷ 1.4 (Summer)	9	07h00-12h00 (W) ⁸ 13h00-18h00 (S)	24 S ; 22 W

Table A.6 - Default design data for various building types

³ Load can vary considerable depending on type of store, hospital or factory equipment being used and must this be specified.

⁴ It is assumed that only a third of the occupants are at home during the daytime.

⁵ Ventilation normally satisfied by infiltration and natural ventilation over entire 24-hour period.

⁶ Ventilation requirements depend on the factory processes. Processes using volatile chemical elements will require larger amounts of outdoor air to flush out contaminants than normal assembly factories.

⁷ It is assumed that only 20% of the auditorium is occupied for winter load calculation

⁸ Operating hours of an auditorium vary depending on its function. In South Africa these time usually will result in the highest system requirements for winter and summer respectively

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Appendix B

SUMMARY OF THE VERIFICATION DATA

B.1 SUMMARY OF BUILDING ZONES

In this appendix a summary of the verification data is given in tabular form. The following gives an overview of the major features of the 103 verification studies. The symbols used in the tables are: burro

- MZ - Multi-zone simulation performed? (Y/N)
- GC - Building zone in ground contact, or exterior, interior floor? (G,E,I)
- WO - Windows open during monitored period? (Y/N)
- HG - Heat generation (Internal load) in building zone? (Y/N)
- FA - Floor area of building zone (m²).
- CON - Does exterior walls have the same construction? (Y/N)

Six studies are listed as YN in the WO column. This indicates that the windows were open and closed during the monitoring period as described in Chapter 3.

NO	BUILDING	LOCATION	DATE	MZ	GC	WO	HG	CON	FA
1	Experim1	Pretoria	07/06/82-13/06/82	N	G	N	N	Y	9
2	Experim2	Pretoria	07/06/82-13/06/82	N	G	N	N	Y	9
3	Experim3	Pretoria	07/06/82-13/06/82	N	G	N	N	Y	9
4	Experim4	Pretoria	07/06/82-13/06/82	N	G	N	N	Y	9
5	Experim1	Pretoria	26/07/82-01/08/82	N	G	N	N	Y	9
6	Experim2	Pretoria	26/07/82-01/08/82	N	G	N	N	Y	9
7	Experim3	Pretoria	26/07/82-01/08/82	N	G	N	N	Y	9
8	Experim4	Pretoria	26/07/82-01/08/82	N	G	N	N	Y	9
9	Experim1	Pretoria	27/09/82-03/10/82	N	G	Y	N	Y	9
10	Experim2	Pretoria	27/09/82-03/10/82	N	G	Y	N	Y	9
11	Experim3	Pretoria	27/09/82-03/10/82	N	G	Y	N	Y	9
12	Experim4	Pretoria	27/09/82-03/10/82	N	G	Y	N	Y	9
13	Experim1	Pretoria	13/07/82-19/08/82	N	G	Y	N	Y	9
14	Experim2	Pretoria	13/07/82-19/08/82	N	G	Y	N	Y	9
15	Experim3	Pretoria	13/07/82-19/08/82	N	G	Y	N	Y	9
16	Experim4	Pretoria	13/07/82-19/08/82	N	G	Y	N	Y	9
17	Experim1	Pretoria	14/02/83-20/02/83	N	G	Y	N	Y	9
18	Experim2	Pretoria	14/02/83-20/02/83	N	G	Y	N	Y	9



NO	BUILDING	LOCATION	DATE	MZ	GC	WO	HG	CON	FA
19	Experim3	Pretoria	14/02/83-20/02/83	N	G	Y	N	Y	9
20	Experim4	Pretoria	14/02/83-20/02/83	N	G	Y	N	Y	9
21	Experim1	Pretoria	18/04/84-26/04/84	N	G	Y	N	Y	9
22	Experim2	Pretoria	18/04/84-26/04/84	N	G	Y	N	Y	9
23	Experim4	Pretoria	18/04/84-26/04/84	N	G	Y	N	Y	9
24	Experim4	Pretoria	10/02/86-16/02/86	N	G	Y	Y	Y	9
25	Experim1	Pretoria	01/11/90-03/11/90	N	G	Y	Y	Y	9
26	Bedroom1	Centurion	18/08/86-24/08/86	N	G	N	N	Y	11
27	Bedroom1	Centurion	04/08/86-10/08/86	N	G	N	N	Y	11
28	Bedroom1	Centurion	21/10/85-27/10/85	N	G	Y	N	Y	11
29	Bedroom1	Centurion	25/11/85-01/12/85	N	G	Y	N	Y	11
30	Bedroom1	Centurion	04/11/85-17/11/85	N	G	Y	N	Y	11
31	Bedroom1	Centurion	21/07/86-27/07/86	N	G	Y	Y	Y	11
32	Bedroom2	Wingate Park	31/10/90-01/11/90	Y	G	N	Y	Y	11
33	Bedroom3	Moreleta Park	20/10/90-21/10/90	Y	I	N	Y	Y	8
34	Bathroom	Faerie Glen	19/10/90-21/10/90	Y	G	N	Y	N	4
35	Dormit1	Negev Desert	11/07/88-16/07/88	N	G	N	N	Y	23
36	Dormit1	Negev Desert	25/07/88-01/08/88	N	G	NY	N	Y	23
37	Dormit1	Negev Desert	01/08/88-08/08/88	N	G	Y	N	Y	23
38	Dormit2	Negev Desert	11/07/88-16/07/88	N	G	N	N	Y	23
39	Dormit2	Negev Desert	25/07/88-01/08/88	N	G	NY	N	Y	23
40	Dormit2	Negev Desert	01/08/88-08/08/88	N	G	Y	N	Y	23
41	Prefab	Negev Desert	11/07/88-16/07/88	N	E	N	N	Y	13
42	Prefab	Negev Desert	25/07/88-01/08/88	N	E	NY	N	Y	13
43	Prefab	Negev Desert	01/08/88-08/08/88	N	E	Y	N	Y	13
44	Garage	Centurion	27/01/86-02/02/86	N	G	N	N	N	18
45	Garage	Centurion	03/02/86-09/02/86	Y	G	Y	Y	N	18
46	Shop	Centurion	04/08/86-10/08/86	N	G	N	N	N	102
47	Shop	Centurion	21/07/86-27/07/86	N	G	Y	N	N	102
48	Shop	Centurion	27/01/86-16/02/86	N	G	Y	Y	N	102
49	School 1	Menlo Park	20/07/87-26/07/87	N	I	N	N	Y	58
50	School 1	Menlo Park	13/07/87-19/07/87	N	I	Y	N	Y	58
51	School 2	The Willows	17/02/90-18/02/90	N	G	Y	N	Y	51
52	Store 1	The Willows	20/10/90-23/10/90	Y	G	N	Y	N	13
53	Store 2	Volksrust	29/06/87-04/07/87	N	G	Y	N	Y	763
54	Studio	Brooklyn	09/11/91-10/09/91	N	G	N	N	N	340



NO	BUILDING	LOCATION	DATE	MZ	GC	WO	HG	CON	FA
55	Church	Arcadia	18/03/90-18/03/90	N	G	NY	Y	N	200
56	Factory	Groenkloof	11/11/85-24/11/85	N	G	NY	N	N	7755
57	Office1	CSIR Pretoria	09/04/84-15/04/84	N	I	N	N	Y	14
58	Office1	CSIR Pretoria	02/04/84-08/04/84	N	I	Y	N	Y	14
59	Office2	GH Marais	06/05/89-07/05/89	N	E	N	N	Y	34
60	Office3	GH Marais	06/05/89-07/05/89	N	I	N	N	Y	17
61	Office3	GH Marais	18/04/90-20/04/90	N	I	N	Y	Y	17
62	Office4	GH Marais	06/05/89-07/05/89	N	E	N	N	Y	12
63	Office5	Cent. Gov. Off.	18/02/89-21/02/89	N	I	N	Y	Y	29
64	Office6	Liberty Life	26/01/88-31/01/88	N	I	N	Y	N	22
65	Office7	Poyntons	12/04/89-16/04/89	N	I	N	N	N	21
66	Office8	UNISA Pretoria	11/04/89-14/04/89	N	I	N	N	Y	14
67	Office9	Eng. Block	20/10/90-21/10/90	Y	I	N	Y	Y	18
68	Office10	Eng. Block	20/10/90-21/10/90	Y	I	N	Y	N	21
69	Office11	JG Strijdom	20/10/90-21/10/90	Y	I	N	Y	Y	10
70	Office12	JG Strijdom	20/10/90-21/10/90	Y	I	N	Y	Y	14
71	Lightweight	Negev Desert	18/08/92-25/08/92	N	E	Y	N	Y	45.9
72	Heavyweight	Negev Desert	18/08/92-25/08/92	N	G	Y	N	Y	9.7
73	Lightweight	Negev Desert	24/08/92-30/08/92	N	E	Y	N	Y	45.9
74	Heavyweight	Negev Desert	24/08/92-30/08/92	N	G	NY	N	Y	9.7
75	Room 1-91	Pretoria	20/02/96-23/02/96	N	G	N	Y	Y	14.6
76	Room 1-90	Pretoria	20/02/96-23/02/96	N	G	N	Y	Y	14.6
77	Room 1-94	Pretoria	20/02/96-23/02/96	N	G	N	Y	Y	43.1
78	Room 1-93	Pretoria	20/02/96-23/02/96	N	G	N	Y	Y	33.2
79	Room 1-79	Pretoria	23/02/96-27/02/96	N	G	N	Y	Y	8.2
80	Room 1-80	Pretoria	23/02/96-27/02/96	N	G	N	Y	Y	8.2
81	Room 1-82	Pretoria	23/02/96-27/02/96	N	G	N	Y	Y	9.9
82	Room 1-83	Pretoria	23/02/96-27/02/96	N	G	N	Y	Y	14.5
83	Room 1-122	Pretoria	30/09/96-03/10/96	Y	G	N	Y	Y	31.6
84	Room 1-123	Pretoria	30/09/96-03/10/96	Y	G	N	Y	Y	31.6
85	Room 1-125	Pretoria	03/10/96-07/10/96	Y	G	N	Y	Y	8.3
86	Room 1-126	Pretoria	03/10/96-07/10/96	Y	G	N	Y	Y	8.3
87	Room 1-127	Pretoria	03/10/96-07/10/96	Y	G	N	Y	Y	16.7
88	Room 1-141	Pretoria	01/03/96-05/03/96	N	G	N	Y	Y	18.8
89	Room 1-142	Pretoria	01/03/96-05/03/96	N	G	N	Y	Y	18.8
90	Room 1-143	Pretoria	01/03/96-05/03/96	N	G	N	Y	Y	18.8



NO	BUILDING	LOCATION	DATE	MZ	GC	WO	HG	CON	FA
91	Room 1-145	Pretoria	01/03/96-05/03/96	N	G	N	Y	Y	18.8
92	Room 1-7	Pretoria	12/03/96-15/03/96	N	G	N	Y	Y	27
93	Room 1-7	Pretoria	15/03/96-18/03/96	N	G	N	Y	Y	27
94	Room 1-9	Pretoria	12/03/96-15/03/96	N	G	N	Y	Y	30.5
95	Room 1-9	Pretoria	15/03/96-18/03/96	N	G	N	Y	Y	30.5
96	Sasol-E	Secunda	09/09/95-15/09/95	N	I	Y	Y	Y	683.9
97	Sasol-F	Secunda	23/09/95-29/09/95	N	G	Y	Y	Y	135.7
98	Sasol-N	Secunda	16/09/95-22/09/95	N	G	Y	Y	Y	911.8
99	Sasol-N	Secunda	09/09/95-15/09/95	N	I	Y	Y	Y	911.8
100	Sasol-S	Secunda	16/09/95-22/09/95	N	G	Y	Y	Y	911.8
101	Sasol-S	Secunda	09/09/95-15/09/95	N	I	Y	Y	Y	911.8
102	Sasol-W	Secunda	16/09/95-22/09/95	N	G	Y	Y	Y	683.9
103	Sasol-W	Secunda	09/09/95-15/09/95	N	I	Y	Y	Y	683.9

B.2 SUMMARY OF THE DESIGN TOOL INPUT REQUIREMENTS.

The following table summarises the required input for the design tool. The number indicated in the floor, roof and wall construction corresponds with the default construction given in Appendix A. Bold numerals indicate that the building zone was fitted with insulation. Fifty-millimetre insulation was added to the default construction for these zones. The columns marked I, indicates if the surface is an internal surface.

NO.	BUILDING ZONE	LOCATION	N WALL LENGTH (M)	HEIGHT (M)	FLOOR AREA (M ²)	NO. OF STORIES	NORTH GLAZING (%)	I	EAST GLAZING (%)	I	SOUTH GLAZING (%)	I	WEST GLAZING (%)	I	GLASS TYPE	SHADING	PEOPLE	LOADS (W/m ²)	AZIMUTH ANGLE (Deg.)	WALL TYPE	ROOF TYPE	FLOOR TYPE
1	Experim1	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	1
2	Experim2	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	1
3	Experim3	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	32	1
4	Experim4	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	13	1
5	Experim1	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	5
6	Experim2	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	5
7	Experim3	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	32	5
8	Experim4	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	13	5
9	Experim1	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	1
10	Experim2	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	1
11	Experim3	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	32	1
12	Experim4	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	13	1
13	Experim1	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	5
14	Experim2	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	5
15	Experim3	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	32	5
16	Experim4	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	13	5
17	Experim1	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	1
18	Experim2	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	5
19	Experim3	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	32	5

NO.	BUILDING ZONE	LOCATION	N WALL LENGTH (M)	HEIGHT (M)	FLOOR AREA (M ²)	NO. OF STORIES	NORTH GLAZING (%)	I	EAST GLAZING (%)	I	SOUTH GLAZING (%)	I	WEST GLAZING (%)	I	GLASS TYPE	SHADING	PEOPLE	LOADS (W/m ²)	AZIMUTH ANGLE (Deg.)	WALL TYPE	ROOF TYPE	FLOOR TYPE
20	Experim4	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	13	5
21	Experim1	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	5
22	Experim2	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	2	5
23	Experim4	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	32	5
24	Experim4	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	288.9	0	4	13	5
25	Experim1	Pretoria	3.0	3.00	9.0	1	8.9	N	0.0	N	8.9	N	0.0	N	Ordinary	Heavy	0	262.2	0	4	2	5
26	Bedroom1	Centurion	3.5	2.45	11.0	1	21.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Light	0	0	13	4	2	5
27	Bedroom1	Centurion	3.5	2.45	11.0	1	21.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Light	0	0	13	4	2	5
28	Bedroom1	Centurion	3.5	2.45	11.0	1	21.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Light	0	0	13	4	2	5
29	Bedroom1	Centurion	3.5	2.45	11.0	1	21.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Light	0	0	13	4	2	5
30	Bedroom1	Centurion	3.5	2.45	11.0	1	21.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Light	0	160	13	4	2	5
31	Bedroom1	Centurion	3.5	2.45	11.0	1	21.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Light	0	0	13	4	2	5
32	Bedroom2	Wingate Park	3.3	2.55	10.8	1	43.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	None	0	137.9	0	6	2	5
33	Bedroom3	Moreleta Park	3.0	2.50	8.4	1	0.0	Y	0.0	Y	23.0	N	0.0	Y	Ordinary	None	0	158.3	0	6	32	5
34	Bathroom	Faerie Glen	2.3	2.64	4.4	1	0.0	Y	20.0	N	33.0	N	0.0	Y	Ordinary	None	0	454.5	0	6	32	5
35	Dormit1	Negev Desert	3.1	2.87	23.0	1	13.6	N	0.0	N	3.4	N	0.0	Y	Ordinary	Heavy	0	0	14	45	13	3
36	Dormit1	Negev Desert	3.1	2.87	23.0	1	13.6	N	0.0	N	3.4	N	0.0	Y	Ordinary	Heavy	0	0	14	45	13	3
37	Dormit1	Negev Desert	3.1	2.87	23.0	1	13.6	N	0.0	N	3.4	N	0.0	Y	Ordinary	Heavy	0	0	14	45	13	3
38	Dormit2	Negev Desert	2.2	2.87	23.0	1	3.4	N	0.0	Y	13.6	N	0.0	N	Ordinary	Heavy	0	0	14	45	13	3
39	Dormit2	Negev Desert	2.2	2.87	23.0	1	3.4	N	0.0	Y	13.6	N	0.0	N	Ordinary	Heavy	0	0	14	45	13	3
40	Dormit2	Negev Desert	2.2	2.87	23.0	1	3.4	N	0.0	Y	13.6	N	0.0	N	Ordinary	Heavy	0	0	14	45	13	3
41	Prefab	Negev Desert	3.5	2.62	13.0	1	14.6	N	0.0	N	14.6	N	0.0	Y	Ordinary	Heavy	0	0	14	54	5	21
42	Prefab	Negev Desert	3.5	2.62	13.0	1	14.6	N	0.0	N	14.6	N	0.0	Y	Ordinary	Heavy	0	0	14	54	5	21
43	Prefab	Negev Desert	3.5	2.62	13.0	1	14.6	N	0.0	N	14.6	N	0.0	Y	Ordinary	Heavy	0	0	14	54	5	21
44	Garage	Centurion	3.2	3.17	18.0	1	0.0	Y	5.3	N	0.0	N	0.0	N	Ordinary	Heavy	0	0	18	4	0	1
45	Garage	Centurion	3.2	3.17	18.0	1	0.0	Y	5.3	N	0.0	N	0.0	N	Ordinary	Heavy	0	166.7	18	4	0	1
46	Shop	Centurion	10.5	2.55	204.0	2	0.0	Y	28.6	N	14.2	N	0.0	Y	Ordinary	Heavy	0	0	43	3	32	2

NO.	BUILDING ZONE	LOCATION	N WALL LENGTH (M)	HEIGHT (M)	FLOOR AREA (M ²)	NO. OF STORIES	NORTH GLAZING (%)	I	EAST GLAZING (%)	I	SOUTH GLAZING (%)	I	WEST GLAZING (%)	I	GLASS TYPE	SHADING	PEOPLE	LOADS (W/m ²)	AZIMUTH ANGLE (Deg.)	WALL TYPE	ROOF TYPE	FLOOR TYPE
47	Shop	Centurion	10.5	2.55	204.0	2	0.0	Y	28.6	N	14.2	N	0.0	Y	Ordinary	Heavy	0	0	43	3	32	2
48	Shop	Centurion	10.5	2.55	204.0	2	0.0	Y	28.6	N	14.2	N	0.0	Y	Ordinary	Heavy	0	34.3	43	3	32	2
49	School1	Menlo Park	8.5	3.00	58.0	1	29.7	N	0.0	Y	58.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	35	9
50	School1	Menlo Park	8.5	3.00	58.0	1	29.7	N	0.0	Y	58.9	N	0.0	N	Ordinary	Heavy	0	0	0	4	35	9
51	School2	The Willows	7.2	2.66	51.5	1	51.7	N	0.0	Y	51.7	N	0.0	Y	Ordinary	Light	0	0	0	54	29	21
52	Store1	The Willows	2.9	3.03	12.6	1	0.0	Y	0.0	Y	30.1	N	0.0	N	Ordinary	None	0	115.8	0	54	2	5
53	Store2	Volkstrust	15.3	4.75	763.0	1	3.8	N	3.8	N	3.8	N	3.8	N	Ordinary	None	0	0	0	49	0	1
54	Studio	Brooklyn	15.5	4.53	340.0	1	17.0	N	11.7	N	100.0	N	46.8	N	Ordinary	None	0	0	0	6	2	3
55	Church	Arcadia	11.1	8.00	200.0	1	14.0	N	0.0	N	6.3	N	0.0	N	Double	Light	0	0	0	4	35	5
56	Factory	Groenkloof	77.1	13.86	7755.0	1	0.0	N	0.0	N	0.0	N	0.0	N	Ordinary	None	0	0	0	50	1	5
57	Office1	CSIR Pretoria	2.4	2.93	14.0	1	55.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Medium	0	0	0	6	16	2
58	Office1	CSIR Pretoria	2.4	2.93	14.0	1	55.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Medium	0	0	0	6	16	2
59	Office2	GH Marais	3.4	2.82	34.4	1	0.0	Y	28.6	N	0.0	Y	0.0	Y	Ordinary	Light	0	0	0	6	10	6
60	Office3	GH Marais	4.8	2.82	17.5	1	17.6	N	26.0	N	0.0	Y	0.0	Y	Ordinary	Light	0	0	0	6	10	6
61	Office3	GH Marais	4.8	2.82	17.5	1	17.6	N	26.0	N	0.0	Y	0.0	Y	Ordinary	Light	0	-57.1	0	6	10	6
62	Office4	GH Marais	2.4	2.83	12.0	1	35.8	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Light	0	0	0	6	10	6
63	Office5	Cent. Gov. Off.	4.6	3.60	28.9	1	0.0	Y	0.0	Y	31.6	N	0.0	Y	Ordinary	Light	1	10.3	0	4	10	6
64	Office6	Liberty Life	4.6	2.74	21.9	1	0.0	Y	0.0	Y	0.0	Y	41.9	N	Ordinary	Heavy	1	13.7	0	4	11	6
65	Office7	Poyntons	3.6	2.83	20.5	1	78.6	N	0.0	Y	0.0*	Y	0.0	Y	Ordinary	None	0	0	0	61	10	6
66	Office8	UNISA Pretoria	3.4	2.80	14.3	1	0.0*	Y	0.0*	Y	71.0	N	0.0	Y	Ordinary	Light	0	0	0	61	10	6
67	Office9	Eng. Block	4.0	2.52	18.1	1	0.0	N	0.0	Y	0.0	Y	14.9	N	Ordinary	Heavy	0	119.3	0	43	19	12
68	Office10	Eng. Block	4.1	2.52	21.3	1	0.0	Y	0.0	Y	14.0	N	72.7	N	Ordinary	Heavy	0	102.7	0	43	19	12
69	Office11	JG Strijdom	3.1	2.96	9.8	1	0.0	Y	0.0	Y	0.0	Y	42.0	N	Ordinary	Heavy	0	220.4	0	4	16	9
70	Office12	JG Strijdom	4.2	3.30	13.9	1	0.0	Y	36.0	N	0.0	Y	0.0	Y	Ordinary	Heavy	0	144.3	0	4	16	9
71	Lightweight	Negev Desert	11.9	2.35	45.9	1	8.6	N	0.0	N	24.0	N	0.0	N	Ordinary	Heavy	0	0	0	62	2	21

* Indoor glazing areas were not considered

NO.	BUILDING ZONE	LOCATION	N WALL LENGTH (M)	HEIGHT (M)	FLOOR AREA (M ²)	NO. OF STORIES	NORTH GLAZING (%)	I	EAST GLAZING (%)	I	SOUTH GLAZING (%)	I	WEST GLAZING (%)	I	GLASS TYPE	SHADING	PEOPLE	LOADS (W/m ²)	AZIMUTH ANGLE (Deg.)	WALL TYPE	ROOF TYPE	FLOOR TYPE
72	Heavyweight	Negev Desert	3.0	3.13	9.7	1	8.5	Y	0.0	N	30.4	N	0.0	N	Ordinary	Heavy	0	0	0	32	8	2
73	Lightweight	Negev Desert	11.9	2.35	45.9	1	8.6	N	0.0	N	24.0	N	0.0	N	Ordinary	Heavy	0	0	0	62	2	21
74	Heavyweight	Negev Desert	3.0	3.13	9.7	1	8.5	Y	0.0	N	30.4	N	0.0	N	Ordinary	Heavy	0	0	0	32	8	2
75	Room 1-91	Pretoria	2.7	2.21	14.6	1	0.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	51.5	0	2	14	2
76	Room 1-90	Pretoria	2.6	2.21	14.6	1	0.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	81.04	0	2	14	2
77	Room 1-94	Pretoria	6.2	2.21	43.1	1	0.0	N	0.0	Y	0.0	N	0.0	N	Ordinary	Heavy	0	12.75	0	6	14	1
78	Room 1-93	Pretoria	6.1	2.21	33.2	1	0.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	44.61	0	6	14	1
79	Room 1-79	Pretoria	2.7	2.21	8.2	1	0.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	137.1	0	2	14	2
80	Room 1-80	Pretoria	2.7	2.21	8.2	1	0.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	171.1	0	2	14	2
81	Room 1-82	Pretoria	3.3	2.22	9.9	1	0.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	21.3	0	2	14	2
82	Room 1-83	Pretoria	3.3	2.21	14.5	1	0.0	N	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	16.5	0	6	14	2
83	Room 1-122	Pretoria	3.4	2.66	31.6	1	0.0	Y	0.0*	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	46.5	0	4	10	2
84	Room 1-123	Pretoria	3.4	2.67	31.6	1	0.0	Y	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	56.4	0	4	10	2
85	Room 1-125	Pretoria	3.4	2.63	8.3	1	0.0	Y	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	0	0	4	10	2
86	Room 1-126	Pretoria	3.4	2.63	8.3	1	0.0	Y	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	100.8	0	4	10	2
87	Room 1-127	Pretoria	3.4	2.63	16.7	1	0.0	Y	0.0	Y	0.0	Y	0.0	Y	Ordinary	Heavy	0	54	0	4	10	2
88	Room 1-141	Pretoria	6.7	4.00	18.8	1	0.0	Y	4.7	N	0.0	Y	0.0	Y	Ordinary	Light	0	76.2	0	4	13	1
89	Room 1-142	Pretoria	6.7	4.00	18.8	1	0.0	Y	4.7	N	0.0	Y	0.0	Y	Ordinary	Light	0	76.2	0	4	13	1
90	Room 1-143	Pretoria	6.7	4.00	21.0	1	0.0	Y	1.8	N	0.0	Y	0.0	Y	Ordinary	Light	0	37.6	0	4	13	1
91	Room 1-145	Pretoria	6.7	4.00	35.5	1	0.0	Y	1.2	N	2.9	N	0.0	Y	Ordinary	Light	0	17	0	6	13	1
92	Room 1-9	Pretoria	7.2	3.33	30.5	1	0.0*	Y	13.1	N	7.5	N	13.1	N	Ordinary	Light	0	-2.3	0	6	2	1
93	Room 1-7	Pretoria	5.5	3.31	27.0	1	0.0*	Y	21.5	N	0.0*	Y	0.0	Y	Ordinary	Light	0	43	0	4	2	1
94	Room 1-9	Pretoria	7.2	3.33	30.5	1	0.0*	Y	13.1	N	7.5	N	13.1	N	Ordinary	Light	0	72.9	0	6	2	1
95	Room 1-7	Pretoria	5.5	3.30	27.0	1	0.0*	Y	21.5	N	0*	Y	0.0	Y	Ordinary	Heavy	0	45.5	0	4	2	1
96	Sasol-E	Secunda	26.3	3.09	683.7	1	22.2	N	12.6	N	22.2	N	10	N	Ordinary	None	48	11.1	0	6	29	15
97	Sasol-F	Secunda	10.6	5.62	135.7	1	0.0	Y	100.0	N	0	Y	100	N	Ordinary	Medium	5	4.4	0	6	11	5
98	Sasol-N	Secunda	36.0	2.81	911.8	1	35.5	N	15.0	N	22.2	N	15	N	Ordinary	Light	48	14.3	0	6	19	5

NO.	BUILDING ZONE	LOCATION	N WALL LENGTH (M)	HEIGHT (M)	FLOOR AREA (M ²)	NO. OF STORIES	NORTH GLAZING (%)	I	EAST GLAZING (%)	I	SOUTH GLAZING (%)	I	WEST GLAZING (%)	I	GLASS TYPE	SHADING	PEOPLE	LOADS (W/m ²)	AZIMUTH ANGLE (Deg.)	WALL TYPE	ROOF TYPE	FLOOR TYPE
99	Sasol-N	Secunda	33.0	3.07	911.8	1	35.5	N	15.0	N	22.2	N	15	N	Ordinary	Light	48	11	0	6	29	15
100	Sasol-S	Secunda	30.6	2.81	789.2	1	19.5	N	6.0	N	17.5	N	15.5	N	Ordinary	Light	24	15.2	0	6	19	5
101	Sasol-S	Secunda	28.8	3.07	911.8	1	21.6	N	20.2	N	22.2	N	15.1	N	Ordinary	Light	44	12.7	0	6	29	15
102	Sasol-W	Secunda	28.8	2.82	683.9	1	27.8	N	12.6	N	22.2	N	5	N	Ordinary	Light	27	13.2	0	6	19	5
103	Sasol-W	Secunda	32.8	3.09	683.9	1	22.2	N	12.6	N	22.2	N	5	N	Ordinary	Light	18	17.5	0	6	29	15

Table B. 1 - Summary of the design tool input requirements.