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#### Energy Efficiency in Buildings SANS 10400-XA & SANS 204 – Report

Report Date: 23 February 2014 Registered to: Roger Heatley v.2.0

Competent Person: Roger Heatley Professional Registration No: CAD21342

Client's Name: MR. Jurgen H. Tolksdorf

Project Description: Window & Door Replacement, Serving Hatch Made Bigger

Site Address: 83 Jan Hofmeyr Road

Cadastral Description: LOT 1281, Westville

Pg. 1 of 8

MR. Jurgen H. Tolksdorf Window & Door Replacement, Serving Hatch Made Bigger 83 Jan Hofmeyr Road LOT 1281, Westville

Building Total Nest Floor Area: 194.315 m² Building Total Nest Floor Area: 194.316 m² Building Total Nest Floor Area: 194.316 m² Building Total Floor Area: 302.541 m² Design Occupancy Time: 24 hrs per Day  Climatic Zone of Building  Climatic Zone: 5  Maximum Energy Demand & Consumption  Design Assumption for Building Cleastification Max. Energy Demand: Non-specified NAM* No requirement Max. Energy Demand: Non-specified NAM* No requirement  Energy Demand & Consumption  Max. Energy Demand: Non-specified NAM* No requirement  Energy Demand & Consumption: Non-specified NAM* No requirement  Building Orientation  Orientation of vinidows / longer building axis: North Optimal orientation achieved  Dominant windows of Abbitable recent or larger axis of the building to be orientation achieved  Concrete slab-on-ground? Yes In-slab heating to be provided? No In-slab heating to be provided? No Insulation Requirements - Ploors  Slab-on-ground  Perimeter insulation required? No Insulation Requirements - Ploors  Suspended floor  Suspended floor  Insulation of unenclosed perimeter required? No Under-floor insulation required? No Under-floor insulation required? No Deminer windows of No.  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Masonry  Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Double for its wall types: No cwity CR-value; 40  Minimum CR-value required: 50 Hours  Advisory Note - Applicable on masonry walls only in terms of SANS 204  CR-value: 40	Occupancy Classification of Building					
Building Total Floor Area: 302.541 m² Design Occupancy Time: 24 Hris per Day 7 Days per Week Climatic Zone of Building Climatic Zone: 5  Maximum Energy Demand & Consumption Design Assumption Total Building (Sastification Max. Energy Demand: Non-specified VA/m² No requirement Max. Energy Demand: Non-specified Whh(m²) No requirement Max. Energy Consumption: Non-specified Whh(m²) No requirement Max. Energy Demand © NVA (WW) No requirement Max. Annual Energy Consumption: Non-specified Whh No requirement Dominate windows of habitable rooms or longer axe of the building to be orientated within 15 deg's of true north.  Floor Construction Slab-on-ground Concrete slab-on-ground? Yes In-slab heating to be provided? No Insulation Requirements - Floors Slab-on-ground Perimeter insulation required? No Under-floor insulation required? No Suspended floor Insulation Required R-value Mail Type? Masonry Minimum R-value required Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, no navity, plastered internally or rendered externally, or Single-leaf masonry wall, no navity, plastered internally or rendered externally, or Single-leaf masonry wall, no navity, plastered internally or rendered externally, or Single-leaf masonry walls, no navity, plastered internally or rendered externally, or Single-leaf masonry walls, no navity, plastered internally or rendered externally, or Single-leaf masonry walls no navity, plastered int	Occupancy	H4				
Design Occupancy Time: 24 hts per Day T Days per Week  Climatic Zone of Building Climatic Zone: 5  Maximum Energy Demand & Consumption  Design Assumption for Building Classification Max. Energy Demand & Consumption Max. Energy Demand & Consumption Max. Energy Demand & Consumption Max. Energy Demand & O KVA (KW) No requirement Max. Annual Energy Consumption: Non-specified KWh No requirement Max. Annual Energy Consumption: Non-specified KWh No requirement Max. Annual Energy Consumption: Non-specified KWh No requirement Max. Annual Energy Consumption: Dominant works of habitable rooms or longer axis of the building to be orientated within 13 days of true north.  Floor Construction Slab-on-ground Concrete slab-on-ground? Vas In-slab heating to be provided? No Under-floor insulation required? No Under-floor insulation required? No Under-floor insulation required? No Under-floor insulation required? No Perimeter insulation required? No Suspended floor Suspended floor Suspended floor Suspended Required R-value Wall Type? Minimum R-value required: No Minimum R-value required: O.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note. Compliant masonry walling only in terms of SANS 204 Required R-value Minimum CR-value required: 69 Hours Advisory Note - Applicable to mesonry walls no carryly, plastered internally or randered externally, or	Building Total Nett Floor Area	194.316	$m^2$			
Climatic Zone of Building  Climatic Zone: 5  Maximum Energy Demand & Consumption  Design Assumption for Building Classification  Max. Energy Demand: Non-specified VA/m² No requirement  Max. Energy Demand: Non-specified NWN/m² No requirement  Max. Energy Demand: Non-specified NWN No requirement  Max. Annual Energy Consumption: Non-specified NWN No requirement  Max. Annual Energy Consumption: Non-specified NWN No requirement  Building Orientation  Orientation of windows / longer building axis: North Optimal orientation achieved  Dominant windows of habitable rooms or longer axis of the building to be orientated within 15 degls of twe north.  Floor Construction  Slab-on-ground  Concrete slab-on-ground? Yes In-slab heating to be provided? No Suspended floor No Suspended floor No Suspended floor No Suspended floor Insulation required? No Suspended floor Perimeter insulation required? No Suspended floor No No Suspended floor No	Building Total Floor Area	302.541	$m^2$			
Climatic Zone of Building  Climatic Zone: 5  Maximum Energy Demand & Consumption  Design Assumption for Building Classification  Max. Energy Demand: Non-specified W/Mr² No requirement  Max. Energy Demand: Non-specified W/Mr² No requirement  Max. Energy Demand: Non-specified W/Mr² No requirement  Energy Demand & Consumption: Non-specified W/Mr No requirement  Max. Annual Energy Consumption: Non-specified W/Mr No requirement  Building Orientation of windows / longer building axis: North Optimal orientation achieved  Dominant windows of habitable rooms or longer axis of the building to be orientated within 15 dag's of two north.  Floor Construction  Slab-on-ground  Concrete slab-on-ground? Yes In-slab heating to be provided? No  Suspended floor  Suspended floor as building envelope? No  In-slab heating to be provided? No  Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required? No  Under-floor insulation required? No  Perimeter & under-floor insulation required? No  Perimeter & under-floor insulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Masonry  Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling:  SANS 204 Required CR-value  Minimum CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Design Occupancy Time	24	Hrs per Da	ay		
Maximum Energy Demand & Consumption  Design Assumption for Building Classification  Max. Energy Demand:  Non-specified  With No requirement  No requirement  Non-specified  With No requirement  Demand:  Non-specified  Non-s		7	Days per \	Week		
Maximum Energy Demand & Consumption  Design Assumption for Building Classification  Max. Energy Demand:  Max. Energy Consumption:  Non-specified  Non-specif	Climatic Zone of Building					
Design Assumption for Building Classification  Max. Energy Demand:  Non-specified  Non-specified	Climatic Zone	5				
Max. Energy Demand:  Max. Energy Consumption:  Non-specified KWh/(m²) No requirement  Energy Demand & Consumption  Max. Energy Demand:  Non-specified kWh/(m²) No requirement  Demand:  No requirement  No Perimeter Required ?  No Perimeter Requir	Maximum Energy Demand & Consumption	on				
Building Orientation  Max. Energy Demands & Consumption:  Max. Energy Demands & O	Design Assumption for Building Classification					
Energy Demand & Consumption  Max. Energy Demand:  Max. Annual Energy Consumption:  Non-specified  Non-specified  Non requirement  Building Orientation  Orientation of windows / longer building axis:  North  Optimal orientation achieved  Dominant windows of habitable rooms or longer axis of the building to be orientated within 15 deg's of true north.  Floor Construction  Slab-on-ground  Concrete slab-on-ground?  In-slab heating to be provided?  No  Suspended floor  Suspended floor as building envelope?  In-slab heating to be provided?  No  In-slab heating to be provided?  No  In-slab heating to be provided?  No  Insulation Requirements - Floors  Slab-on-ground  Perimeter insulation required?  No  Under-floor insulation required?  No  Suspended floor  Insulation of unenclosed perimeter required?  No  Perimeter & under-floor insulation required?  No  Suspended floor  Insulation of unenclosed perimeter required?  No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type?  Minimum R-value required:  Compliant masonry wallin:  Single-leaf masonry wall, no cavity, plastered internally or rendered externally, or  Single-leaf masonry wall, no minal wall thickness not < 140 mm, plastered internally and rendered externally.  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Max. Energy Demand	Non-specif	ied	VA/m <sup>2</sup>	No requirement	
Max. Annual Energy Consumption:  Non-specified kWh No requirement  Non-specified kWh No required within 15 degs of true north.  Non-specified kWh No required within 15 degs of true north.  Non-specified kWh Nore required within 15 degs of true north.  Non-specified kWh Nore required within 15 degs of true north.  Non-specified kWh Nore required within 15 degs of true north.  Non-specified kWh Nore required within 15 degs of true north.  Non-specified kWh Nore required within 15 degs of true north.  Non-specified kWh Nore required within 15 degs of true north.  Non-specified kWh Nore required within 15 degs of true north.  Non-specified kWh Nore required within 15 degs of true north.  Non-specified kWh North Nor	Max. Energy Consumption	Non-specif	ied	kWh/(m <sup>2</sup> )	No requirement	
Building Orientation Orientation of windows / longer building axis: North Optimal orientation achieved Dominant windows of habitable rocons or longer axis of the building to be orientated within 15 deg's of true north.  Floor Construction Slab-on-ground Concrete slab-on-ground? Yes In-slab heating to be provided? No Suspended floor Suspended floor as building envelope? No In-slab heating to be provided? No In-slab heating to be provided? No Insulation Requirements – Floors Slab-on-ground Perimeter insulation required? No Under-floor insulation required? No Suspended floor Insulation of unenclosed perimeter required? No Perimeter & under-floor insulation required? No External Wall Construction SANS 10400-XA Required R-value  Wall Type? Masonry Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note. Compliant masonry walling: Compliant masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours Advisory Note - Applicable to masonry walls only in terms of SANS 204	Energy Demand & Consumption					
Building Orientation  Orientation of windows / longer building axis: North Optimal orientation achieved  Dominant windows of habitable rooms or longer axis of the building to be orientated within 15 deg's of true north.  Floor Construction  Slab-on-ground  Concrete slab-on-ground? Yes In-slab heating to be provided? No  Suspended floor  Suspended floor susualting envelope? No In-slab heating to be provided? No Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required? No Inder-floor insulation required? No Insulation of unenclosed perimeter required? No Insulation of unenclosed	Max. Energy Demand	0		kVA (kW)	No requirement	
Orientation of windows / longer building axis: North Optimal orientation achieved  Dominant windows of habitable rooms or longer axis of the building to be orientated within 15 deg's of true north.  Floor Construction  Slab-on-ground  Concrete slab-on-ground? No In-slab heating to be provided? No Suspended floor as building envelope? No In-slab heating to be provided? No Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required? No Under-floor insulation required? No Suspended floor  Insulation of unenclosed perimeter required? No Perimeter & under-floor insulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Masonry  Minimum R-value required: 0.35 Refer SAINS 10400-XA (4.4.3) & SAINS 204 - Table 4 and Advisory Note.  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Max. Annual Energy Consumption	Non-specif	ied	kWh	No requirement	
Floor Construction  Slab-on-ground  Concrete slab-on-ground? In-slab heating to be provided?  No  Suspended floor Suspended floor as building envelope? In-slab heating to be provided? No  Insulation Requirements - Floors Slab-on-ground  Perimeter insulation required? No  Under-floor insulation required? No  Suspended floor  Suspended floor  Slab-on-ground  Perimeter insulation required? No  Suspended floor Insulation of unenclosed perimeter required? No  Suspended floor Insulation of unenclosed perimeter required? No  External Wall Construction  SANS 10400-XA  Required R-value  Wall Type?  Minimum R-value required: Compliant masonry walling: SANS 204  Required CR-value  Minimum CR-value required: Advisory Note -  Advisory Note -  Advisory Wale on Hours  Advisory walls only in terms of SANS 204  Hours  Advisory walls only in terms of SANS 204	Building Orientation					
Floor Construction  Slab-on-ground  Concrete slab-on-ground? Yes In-slab heating to be provided? No  Suspended floor Suspended floor as building envelope? No In-slab heating to be provided? No Slab-on-ground  Perimeter in-sulation required? No In-slab heating to be provided? No Suspended floor In-sulation of unenclosed perimeter required? No Perimeter & under-floor in-sulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Masonry Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling: Single-leaf masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Orientation of windows / longer b	uilding axis:	North	Optimal o	orientation achieved	
Slab-on-ground  Concrete slab-on-ground? Yes In-slab heating to be provided? No  Suspended floor Suspended floor as building envelope? No In-slab heating to be provided? No Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required? No Under-floor insulation required? No Suspended floor Insulation of unenclosed perimeter required? No Perimeter & under-floor insulation required? No Perimeter & under-floor insulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Masonry  Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling: Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Dominant window	s of habitable rooms or lo	onger axis of t	he building to be orienta	ated within 15 deg's of true no	orth.
Concrete slab-on-ground?  In-slab heating to be provided?  No  Suspended floor  Suspended floor as building envelope?  In-slab heating to be provided?  No  In-slab heating to be provided?  No  Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required?  No  Under-floor insulation required?  No  Suspended floor  Insulation of unenclosed perimeter required?  No  Perimeter & under-floor insulation required?  No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type?  Minimum R-value required:  Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required:  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Floor Construction					
In-slab heating to be provided?  Suspended floor  Suspended floor as building envelope?  In-slab heating to be provided?  No  Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required?  No  Under-floor insulation required?  No  Suspended floor  Insulation of unenclosed perimeter required?  No  Perimeter & under-floor insulation required?  No  External Wall Construction  SANS 10400-XA  Required R-value  Wall Type?  Minimum R-value required:  Compliant masonry walling:  Single-leaf masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204  Required CR-value  Minimum CR-value required:  60  Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Slab-on-ground					
Suspended floor  Suspended floor as building envelope? No In-slab heating to be provided? No Insulation Requirements – Floors Slab-on-ground  Perimeter insulation required? No Under-floor insulation required? No Suspended floor Insulation of unenclosed perimeter required? No Perimeter & under-floor insulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Masonry  Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Concrete slab-on-ground 1	Yes				
Suspended floor as building envelope?  In-slab heating to be provided?  No  Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required?  No  Under-floor insulation required?  Insulation of unenclosed perimeter required?  No  Perimeter & under-floor insulation required?  No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type?  Masonry  Minimum R-value required:  Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required:  Advisory Note - Applicable to masonry walls only in terms of SANS 204	In-slab heating to be provided 1	No				
In-slab heating to be provided?  Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required?  No  Under-floor insulation required?  Insulation of unenclosed perimeter required?  Perimeter & under-floor insulation required?  No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type?  Minimum R-value required:  Outle-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required:  Advisory Note -  Applicable to masonry walls only in terms of SANS 204	Suspended floor					
Insulation Requirements – Floors  Slab-on-ground  Perimeter insulation required? No Under-floor insulation required? No Suspended floor Insulation of unenclosed perimeter required? No Perimeter & under-floor insulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Minimum R-value required:  Compliant masonry walling: Double-skin masonry wall, no cavity, plastered internally or rendered externally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: Minimum CR-value required: Advisory Note - Applicable to masonry walls only in terms of SANS 204	Suspended floor as building envelope	No				
Slab-on-ground  Perimeter insulation required? No Under-floor insulation required? No Suspended floor Insulation of unenclosed perimeter required? No Perimeter & under-floor insulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling: Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	In-slab heating to be provided ?	No				
Perimeter insulation required?  Under-floor insulation required?  No  Suspended floor  Insulation of unenclosed perimeter required?  No  Perimeter & under-floor insulation required?  No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type?  Masonry  Minimum R-value required:  Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required:  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Insulation Requirements – Floors					
Under-floor insulation required?  Suspended floor Insulation of unenclosed perimeter required? No Perimeter & under-floor insulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type?  Minimum R-value required:  Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required:  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Slab-on-ground					
Suspended floor Insulation of unenclosed perimeter required? No Perimeter & under-floor insulation required? No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Minimum R-value required:  Compliant masonry walling: Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required:  Mo  Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Perimeter insulation required 1	No				
Insulation of unenclosed perimeter required?  No  Perimeter & under-floor insulation required?  No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type?  Masonry  Minimum R-value required:  Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required:  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Under-floor insulation required 1	No				
Perimeter & under-floor insulation required?  No  External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Masonry  Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling: Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Suspended floor					
External Wall Construction  SANS 10400-XA Required R-value  Wall Type? Masonry  Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling: Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Insulation of unenclosed perimeter required 1	No				
SANS 10400-XA Required R-value  Wall Type? Masonry  Minimum R-value required: 0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling: Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Perimeter & under-floor insulation required '	No				
Mall Type?  Masonry  Minimum R-value required:  O.35  Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204  Required CR-value  Minimum CR-value required:  Advisory Note - Applicable to masonry walls only in terms of SANS 204	External Wall Construction					
Minimum R-value required:  0.35 Refer SANS 10400-XA (4.4.3) & SANS 204 - Table 4 and Advisory Note.  Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204 Required CR-value  Minimum CR-value required:  60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	SANS 10400-XA Required R-value					
Compliant masonry walling:  Double-skin masonry wall, no cavity, plastered internally or rendered externally, or Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  SANS 204  Required CR-value  Minimum CR-value required:  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Wall Type 1	Masonry	,			
Sans 204 Required CR-value  Minimum CR-value required:  Advisory Note - Applicable to masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  Single-leaf masonry wall, nominal wall thickness not < 140 mm, plastered internally and rendered externally.  Sans 204 Required CR-value  Minimum CR-value required:  Applicable to masonry walls only in terms of SANS 204	Minimum R-value required	0.35	Refer SAN	IS 10400-XA (4.4.3)	& SANS 204 - Table 4 and	d Advisory Note.
SANS 204 Required CR-value  Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	Compliant masonry walling					
Minimum CR-value required: 60 Hours  Advisory Note - Applicable to masonry walls only in terms of SANS 204	SANS 204 Required CR-value		,		, ,	,,
Advisory Note - Applicable to masonry walls only in terms of SANS 204	•	60	Hours			
	· · · · · · · · · · · · · · · · · · ·			in terms of SANS 20	04	
	· ·					40
CR-value of wall insufficient.			- 7			

MR. Jurgen H. Tolksdorf Window & Door Replacement, Serving Hatch Made Bigger 83 Jan Hofmeyr Road LOT 1281, Westville

Fenestration - Buildings with Natural Environmental Control Constants Conductance ( C<sub>U</sub> ) constant 1.4 Solar Heat Gain (  $\ensuremath{C_{\text{SHGC}}}$  ) constant: 0.11 Storey Conductance / Solar Heat Gain **Ground Storey** 194,316 Net Floor Area of Storey / Room: m<sup>2</sup> 47.546 Fenestration Area of Storey / Room: m<sup>2</sup> % Fenestration Area to Net Floor Area: % 24.5 Permissible CONDUCTANCE & SOLAR HEAT GAIN I.T.O SANS 204. Max. Conductance (C<sub>U</sub>) for Storey / Room: 272.042 Max. Solar Heat Gain (  $C_{SHGC}$  ) for Storey / Room: 21.375 Achieved 260.572 Conductance ( CU ) for Storey / Room: 20.756 Solar Heat Gain ( CSHGC ) for Storey / Room: Available (In Hand) Conductance ( C<sub>U</sub> ) for Storey / Room: 11.471 Acceptable & refer SANS 204 (4.3.4) Solar Heat Gain (  $C_{\text{SHGC}}$  ) for Storey / Room: 0.619 Acceptable & refer SANS 204 (4.3.4) First Storey 0.000 Net Floor Area of Storey / Room: m<sup>2</sup> Fenestration Area of Storey / Room: m<sup>2</sup> **#VALUE!** % Fenestration Area to Net Floor Area: % Permissible Max. Conductance (C<sub>IJ</sub>) for Storey / Room: 0.000 Max. Solar Heat Gain ( CSHGC ) for Storey / Room: 0.000 Achieved Conductance ( C<sub>U</sub> ) for Storey / Room: Solar Heat Gain ( C<sub>SHGC</sub> ) for Storey / Room: Available (In Hand) Conductance (  $C_U$  ) for Storey / Room: Solar Heat Gain ( C<sub>SHGC</sub> ) for Storey / Room: Second Storey 0.000 Net Floor Area of Storey / Room: m<sup>2</sup> Fenestration Area of Storey / Room: m<sup>2</sup> % Fenestration Area to Net Floor Area: % #VALUE! Permissible Max. Conductance ( C<sub>U</sub> ) for Storey / Room: 0.000 Max. Solar Heat Gain ( C<sub>SHGC</sub> ) for Storey / Room: 0.000 Achieved Conductance (C<sub>U</sub>) for Storey / Room: Solar Heat Gain ( C<sub>SHGC</sub> ) for Storey / Room: Available (In Hand) Conductance ( C<sub>U</sub> ) for Storey / Room: Solar Heat Gain ( CSHGC ) for Storey / Room:

MR. Jurgen H. Tolksdorf Window & Door Replacement, Serving Hatch Made Bigger 83 Jan Hofmeyr Road LOT 1281, Westville

## Fenestration – Buildings with Natural Environmental Control

Third Storey	
Net Floor Area of Storey / Room: m <sup>2</sup>	0.000
Fenestration Area of Storey / Room: m <sup>2</sup>	
% Fenestration Area to Net Floor Area: %	#VALUE!
Permissible	
Max. Conductance ( C <sub>U</sub> ) for Storey / Room:	0.000
Max. Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	0.000
Achieved	
Conductance ( C <sub>U</sub> ) for Storey / Room:	
Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	
Available ( In Hand )	
Conductance ( C <sub>U</sub> ) for Storey / Room:	
Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	
Fourth Storey	
Net Floor Area of Storey / Room: m <sup>2</sup>	0.000
Fenestration Area of Storey / Room: m²	0.000
% Fenestration Area to Net Floor Area: %	#VALUE!
Permissible	, TALOL.
Max. Conductance ( C <sub>U</sub> ) for Storey / Room:	0.000
Max. Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	0.000
Achieved	0.000
Conductance ( C <sub>U</sub> ) for Storey / Room:	
Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	
Available (In Hand)	
Conductance ( C <sub>U</sub> ) for Storey / Room:	
Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	
Fifth Storey	
Net Floor Area of Storey / Room: m <sup>2</sup>	0.000
Fenestration Area of Storey / Room: m <sup>2</sup>	
% Fenestration Area to Net Floor Area: %	#VALUE!
Permissible	
Max. Conductance ( $C_U$ ) for Storey / Room:	0.000
Max. Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	0.000
Achieved	
Conductance ( C <sub>U</sub> ) for Storey / Room:	
Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	
Available (In Hand )	
Conductance ( C <sub>II</sub> ) for Storey / Room:	
Solar Heat Gain ( C <sub>SHGC</sub> ) for Storey / Room:	
Solar Fleat Sain ( SHGC ) for Storey / ROOM.	

MR. Jurgen H. Tolksdorf Window & Door Replacement, Serving Hatch Made Bigger 83 Jan Hofmeyr Road LOT 1281, Westville

#### Fenestration – Buildings with Centrally Controlled Artificial Ventilation or Air Conditioning

			10	
		Energy index: 0.	.18	
ound Storey	/ Facade			
	Orientation	Allowable Air-conditioning	Achieved Air-conditioning	
	North	17.410	8.207	Acceptable & refer SANS 204 (4.3.4)
	North East			
	East	7.620	5.550	Acceptable & refer SANS 204 (4.3.4)
	South East			
	South	25.337	5.305	Acceptable & refer SANS 204 (4.3.4)
	South West			
	West	8.950	6.108	Acceptable & refer SANS 204 (4.3.4)
	North West			
st Storey Fa	acade			
	Orientation	Allowable Air-conditioning	Achieved Air-conditioning	1
	North	7 mewasie 7 m eenamening	7 torne ved 7 til eerialiering	-
	North East	1		
	East	1		
	South East			
	South			
	South West			
	West		_	
	North West			
ond Storey	/ Facade			
J.U.U		Allerred L. A	A abias 1 A	
	Orientation	Allowable Air-conditioning	Achieved Air-conditioning	-
	North	+	<u> </u>	-
	North East	+		-
	East South East	+	-	
	South East	+	+	
	South West			
	West			
	******			
d Storov E	North West			]
rd Storey F	acade Orientation	Allowable Air-conditioning	Achieved Air-conditioning	]
rd Storey F	acade Orientation North	Allowable Air-conditioning	Achieved Air-conditioning	
d Storey F	Orientation North North East	Allowable Air-conditioning	Achieved Air-conditioning	
d Storey F	acade Orientation North North East East	Allowable Air-conditioning	Achieved Air-conditioning	
rd Storey F	Orientation North North East East South East	Allowable Air-conditioning	Achieved Air-conditioning	
d Storey F	Orientation North North East East South East South	Allowable Air-conditioning	Achieved Air-conditioning	
d Storey F	Orientation North North East East South East South West	Allowable Air-conditioning	Achieved Air-conditioning	
d Storey F	Orientation North North East East South East South West West	Allowable Air-conditioning	Achieved Air-conditioning	
	Orientation North North East East South East South West West North West	Allowable Air-conditioning	Achieved Air-conditioning	
	Orientation North North East East South East South West West North West			
	Orientation North North East East South East South West West North West Facade Orientation	Allowable Air-conditioning  Allowable Air-conditioning	Achieved Air-conditioning  Achieved Air-conditioning	
	Orientation North North East East South East South West West North West Facade Orientation North			
	Orientation North North East East South East South West West North West Facade Orientation North North East			
	Orientation North North East East South East South West West North West Facade Orientation North North East East			
	Orientation North North East East South East South West West North West Facade Orientation North North East East South East			
	Orientation North North East East South East South West West North West Facade Orientation North North East East South East South South West West North West			
	Orientation North North East East South East South West West North West Facade Orientation North North East East South Esst South West			
	Orientation North North East East South East South West West North West Facade Orientation North North East East South Est West North West Facade Orientation North South East South South West West West			
th Storey	Orientation North North East East South East South West West North West  Facade  Orientation North North East East South Esst South West West North West  Facade  Orientation North South East South East South East South West West North West			
th Storey	Orientation North North East East South East South West West North West  Facade  Orientation North North East East South Esst South West West North West  Facade  Orientation North South East South East South East South West West North West			
rth Storey	Acade  Orientation North North East East South East South West West North West  Facade  Orientation North North East East South East South Vorth East East South East South West West North West Worth West Worth West North West Acade	Allowable Air-conditioning	Achieved Air-conditioning	
irth Storey	Orientation North North East East South East South West West North West  Facade  Orientation North North East East South Esst South West West North West  Facade  Orientation North South East South East South East South West West North West			
irth Storey	Orientation North North East East South East South West West North West  Facade  Orientation North North East East South East South West West North West  Facade  Orientation North North East East South East South West West North West Orientation North South West Output Description	Allowable Air-conditioning	Achieved Air-conditioning	
irth Storey	Orientation North North East East South East South West West North West Facade Orientation North North East East South West West North West Facade Orientation North North East East South East South West West North West Orientation North North West West North West Orientation North North	Allowable Air-conditioning	Achieved Air-conditioning	
urth Storey	Orientation North North East East South East South West West North West Facade Orientation North North East East South West Vest North West Facade Orientation North North East South South West West North West Vest North West North West North West North West North West Acade Orientation North North East	Allowable Air-conditioning	Achieved Air-conditioning	
irth Storey	Orientation North North East East South East South West West North West Facade  Orientation North North East East South East South West West North West  Facade  Orientation North North East South East South West West North West North West Acade  Orientation North North East South East	Allowable Air-conditioning	Achieved Air-conditioning	
irth Storey	Orientation North North East East South East South West West North West  Facade  Orientation North North East East South East South West  West Orientation North North East East South East South West West North West West North West South East	Allowable Air-conditioning	Achieved Air-conditioning	
rd Storey F	Orientation North North East East South East South West West North West Facade  Orientation North North East East South East South West West North West  Facade  Orientation North North East South East South West West North West North West Acade  Orientation North North East South East	Allowable Air-conditioning	Achieved Air-conditioning	

MR. Jurgen H. Tolksdorf Window & Door Replacement, Serving Hatch Made Bigger 83 Jan Hofmeyr Road LOT 1281, Westville

Roof Assembly		
SANS 10400-XA Required R-value		
Minimum Total R-value required:	2.7	m²-K/W
Direction of heat flow:	Down	
Construction Type R-value		
Basic roof assembly:	Clay	y tile type
R-value for roof covering material:	0.48	m²-K/W
R-value for ceiling:	0.05	m²-K/W
Required added R-value for insulation:	2.17	m²-K/W
SANS 204 Required R-value		
Construction Type R-value		
Roof venting:	Unventila	ated
Basic roof construction ?		Conc./clay tile @ 22-45° w/ horiz. ceiling
Basic R-value for Roof		
Direction of heat flow:	DOWN	
Outdoor air film (7m/s)	0.03	
Roof tile, clay or concrete		
(1922 kg/m³)	0.02	
Roof air space (non-reflective)	0.28	
Plasterboard, gypsum (10 mm, 880 kg/m³)	0.06	
Indoor air film (still air)	0.16	
Total R-value	0.55	m <sup>2</sup> K/W
_		
Thermal Insulation	1.03	21/24/
Minimum added R-Value of insulation required:  Generic insulation product added?		m²K/W Flexible fibre glass blanket
Density of generic insulation added:	10 – 18	kg/m³
Thickness of generic insulation required:	45	mm
_		
Roofs Lights	40	
Roofs Lights Room Dimensions		
Roofs Lights	0	$m^2$
Roofs Lights Room Dimensions	0	$m^2$
Roofs Lights  Room Dimensions  Floor area of space served by roof light:	0	$m^2$
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that  Length of roof light?  Width of roof light?	<b>0</b> allows light to en	m <sup>2</sup> Iter the building )
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light?	0 allows light to en	m <sup>2</sup> ster the building )  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that  Length of roof light?  Width of roof light?	0 allows light to end 0	m <sup>2</sup> ter the building )  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that  Length of roof light ?  Width of roof light?  or  Diameter of roof light?	0 allows light to end 0 0 0	m <sup>2</sup> ter the building )  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that  Length of roof light?  Width of roof light?  or  Diameter of roof light?  No. of roof lights:	0 allows light to end 0 0 0	m <sup>2</sup> ter the building )  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light?  Width of roof light?  Or  Diameter of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceilin Length of roof light opening at ceiling level?  Width of roof light opening at ceiling level?	0 allows light to end 0 0 0 0 understanding the service of the ser	m <sup>2</sup> Iter the building )  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light?  Width of roof light?  Or  Diameter of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceilin Length of roof light opening at ceiling level?	0 allows light to end 0 0 0 0 output	m² iter the building )  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light?  Width of roof light?  Or  Diameter of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceiling Length of roof light opening at ceiling level?  Width of roof light opening at ceiling level?	O allows light to end O O O O O O O O O O O O O O O O O O O	m²  Inter the building )  m  m  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light ?  Width of roof light ?  Diameter of roof light?  No. of roof light?  Roof Light Opening Dimension - Internal - ( roof opening ceiling Length of roof light opening at ceiling level ?  Width of roof light opening at ceiling level ?  Diameter of roof light opening at ceiling level ?	O allows light to end O O O O O O O O O O O O O O O O O O O	m²  Inter the building )  m  m  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light ?  Width of roof light?  Or  Diameter of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceiling Length of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Or  Diameter of roof light opening at ceiling level?  Roof Light Shaft Index	0 allows light to end 0 0 0 0 0 ong level ) 0 0	m²  ter the building )  m  m  m  m  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light?  Width of roof light?  Vidth of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceiling Length of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Or Diameter of roof light opening at ceiling level?  Roof Light Shaft Index  Vertical (shaft) height of roof light?	0 allows light to end 0 0 0 0 0 ong level ) 0 0	m²  ter the building )  m  m  m  m  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light ?  Width of roof light?  Diameter of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceiling Length of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Or  Diameter of roof light opening at ceiling level?  Roof Light Shaft Index  Vertical (shaft) height of roof light?  Roof light shaft index:	0 allows light to end 0 0 0 0 0 ong level ) 0 0	m²  ter the building )  m  m  m  m  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light ?  Width of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceiling Length of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Roof Light Shaft Index  Vertical (shaft) height of roof light?  Roof light shaft index:  Area of Roof Light	0 allows light to end 0 0 0 0 0 ong level ) 0 0	m²  ter the building )  m  m  m  m  m  m  m  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light?  Width of roof light?  Vidth of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceiling Length of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Roof Light Shaft Index  Vertical (shaft) height of roof light?  Roof light shaft index:  Area of Roof Light  Area of roof light:	O allows light to end O O O O O O O O O O O O O O O O O O O	m²  ter the building )  m  m  m  m  m  m  m  m  m  m  m  m  m
Roofs Lights  Room Dimensions  Floor area of space served by roof light:  Roof Light Opening Dimension - External - ( roof opening that Length of roof light?  Width of roof light?  Vidth of roof light?  No. of roof lights:  Roof Light Opening Dimension - Internal - ( roof opening ceiling Length of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Width of roof light opening at ceiling level?  Or Diameter of roof light opening at ceiling level?  Roof Light Shaft Index  Vertical (shaft) height of roof light?  Roof light shaft index:  Area of Roof Light  Area of roof light:  Roof Light Area as % of Floor Area:	O allows light to end O O O O O O O O O O O O O O O O O O O	m²  ter the building )  m  m  m  m  m  m  m  m  m  m  m  m  m

MR. Jurgen H. Tolksdorf Window & Door Replacement, Serving Hatch Made Bigger 83 Jan Hofmeyr Road LOT 1281, Westville

Air Infiltration and Leaka	age				
Ma	x. Permissible Air Leakage (AL):		L/sm <sup>2</sup> – 0	Openable glazing	
Ma	x. Permissible Air Leakage (AL):		L/sm <sup>2</sup> - N	Non-openable glazing	
Ma	x. Permissible Air Leakage (AL):		L/sm <sup>2</sup> – 0	Glazed double action swing doors and revolving doors	
		All with 75 Pa pressu	ure differer	ence when tested in accordance with SANS 613.	
Chimneys and Flues					
	Type of burning device ?	Solid-fue	el – Open	Refer SANS 204 (4.4.3) - Damper or flap required.	
Roof Lights and Skylights					
	Roof light or skylight installed ?	No			
External Doors	_				
	Door serves:				
Exhaust Fans				_	
	Exhaust fan serves:				
Roofs, Walls and Floors	_ , , , , , , , , , , , , , , , , , , ,			7 v o · · ·	
	Roofs, external walls & floors and	Habitable Ro	om	No Requirements.	
Services					
Lighting and Power					
	Max. Energy Demand:	1512.705	W – Pern	rmissible	
Max. E	nergy Consumption per Annum:	1512.705	kWh – Pe	Permissible	
	Lamp power (W) rating:	No. of lamps	3:	Hours in use / day:	
	0	0		0	
	0	0		0	
	0	0		0	
	0	0		0	
	0	0		0	
	0	0		0	
	0	0	7	0	
	Total lamp energy demand (W): L				
	Total energy demand (W/m²):				
Avail	able Energy Demand for Lights :	#VALUE!	W		
Total ener	rgy consumption – Lights (kWh):		1		
	or		1		
3,	consumption – Lights (kWh/m²):		1		
Available annu	al energy consumption – Lights: L	#VALUE!	kWh		
Hot Water Services	(Use actual measured	data where available.	.)		
	Type of Accommodation ?		Dwelling I	houses - Low rental : 80-115 L/capita/day	
Assu	umed Hot Water Consumption?	85	L		
	No. of Persons:	4	Per Day		
	d Daily Hot Water Consumption:	340	L		
Assumed A	Annual Hot Water Consumption:	123.76		sed on daily design occupancy per week	
50 % of A	Annual Hot Water Consumption:	61.88		nimum volume of hot water to be heated by means other than electrical ce heating	
	or Daily Hot Water Consumption:	170	L – To be	be heated by means other than electrical resistance heating	
	., ,			· · · · · · · · · · · · · · · · · · ·	
Insulation Requirements			1		
	eter of Hot Water Service Pipe ?	> 80	mm   D-f- :: 0.4	MAID 004 (4 5 0)	
Mınımum Requi	ired R-value for Pipe Insulation?	1.5	Keter SA	ANS 204 (4.5.2)	
Hot Water Vessels / Tanks	<u>-</u>		1		
Minimum Requ	uired R-value for Vessel / Tank?	2	Additiona value.	nal insulation to manufacturer's insulation may be required to achieve this	
	s, energy constants and heating / cooling shify that all the information containe			tion element calculations) If my knowledge and belief, true and correct.	

Signature:		
Competent Person:	Roger Heatley	

Professional Registration No: CAD21342

MR. Jurgen H. Tolksdorf Window & Door Replacement, Serving Hatch Made Bigger 83 Jan Hofmeyr Road LOT 1281, Westville

#### **GLAZING ELEMENTS: FACTOR & CO-EFFICIENT SUMMARY**

Ground Storey   V/2   S		G	lazing Elemer	nts		Glazing	Element	Se	ctor		Sha	ading	
Ground Storey	Storey Level					U-value	SHGC	Orie	ntation				P/H
Storey Level   Identifier   No. of   No.		140.	Office	WAII	()			Sc	outh				0.04
Scriegy Level   Service   Service	Ground Storey	W2	3	1.43 x 1.43	6.13	5.60	0.77		C <sub>A</sub>	Св	C <sub>C</sub>		Cooling
Storey Level   No:   Units   w x h   (my)   U-stake   SHOL   Ordertation   (p)   0-05   05   05   05   No:   No:   Units   w x h   (my)   U-stake   SHOL   O.32   2.24   0.84   0.07   Select   O.32   2.24   0.84   0.07   Select   O.32   0.00   0.48   0.02   1.00   0.48   O.07   Select   O.32									0.00	0.48	0.02		
Ground Storey	Storey Level					U-value	SHGC	Orie	ntation				P/H
Strong Level   More					()			Sc	outh				0.07
Sizery Level	Ground Storey	W3	1	0.9 x 1.4	1.26	5.60	0.77		C <sub>A</sub>	Св	C <sub>C</sub>		Cooling
Strong Level   No.   United   W.x.h   (ph)   United   SHCC   United Storey   W/4   6   0.61 x 1.22   4.47   4.23   0.72   Factor   C. x.   C. c.   C. c.   No.   No.   Colorado   No.   O.   Size   Area   No.   O.   No.   O.   O.   O.   O.   O.   O.   O.									0.00	0.48	0.02		
Ground Storey	Storey Level					U-value	SHGC	Orie	ntation				P/H
Storey Level   Identifier   No. of   Size   Area   Invalue   SHGC   Orientation   Projection   Height   Heigh					()			Sc	outh				0.37
Storey Level   Identifier   No. of   Size   w x h   Area   (m²)   Uvalue   SHGC   Orientation   Projection   Projection   Height   Heigh	Ground Storey	W4	6	0.61 x 1.22	4.47	4.23	0.72		C <sub>A</sub>	Св	C <sub>c</sub>		Cooling
Storey Level   Not   N									0.00	0.48	0.02		
Ground Storey	Storey Level					U-value	SHGC	Orie	ntation				P/H
Storey Level   Ground Storey   WS   6		110.	OTHE		( )			No	orth				0.37
Storey Level   Morefiller   No. of	Ground Storey	W5	6	0.61 x 1.22	4.47	4.23	0.72		C <sub>A</sub>	Св	C <sub>C</sub>		Cooling
Storey Level   No: Units									0.00	0.80	0.02		
Ground Storey	Storey Level					U-value	SHGC	Orie	ntation				P/H
Storey Level   Identifier   No. of Units   Size   Area (m²)   U-value   SHGC   Orientation   Projection   Height (Pi)   Pi)   Height (Pi)   Pi)   Pi   Pi   Pi   Pi   Pi   Pi		140.	Office		()			No	orth				2.51
Storey Level   Identifier   No. of	Ground Storey	W6	2	0.75 x 1.45	2.18	5.60	0.77		C <sub>A</sub>	Св	C <sub>C</sub>		Cooling
Storey Level   No.   Units   w x h   (m²)   U-value   SHGC   Orientation   (ip)   (ii)   (ij)   (i									0.00	0.80	0.02		
Ground Storey   D2	Storey Level					U-value	SHGC	Orie	ntation				P/H
Storey Level   Identifier No. of Units   No. of N		INO.	Ullits	WAII	(111-)			No	orth				1.74
Storey Level   Identifier   No. of	Ground Storey	D2	1	3 x 2.032	6.10	5.60	0.77		C <sub>A</sub>	Св			Cooling
Storey Level   No.   Units   w x h   (m²)   Uvalue   SRC   Uvalue   SRC   C   (p)   (p)   (p)   (c)   (c)   P/H	·								0.00	0.80	0.02		
Ground Storey   W2   1	Storey Level					U-value	SHGC	Orie	ntation				
Storey Level   Identifier No:   Units   No. of Units   Value   Value   Identifier No:   Units   V		INO.	Ullits	WAII	(111-)			No	orth				0.39
Storey Level   Identifier No. of Units   No. of U	Ground Storey	W2	1	1.43 x 1.43	2.04	5.60	0.77		C <sub>A</sub>	Св	Cc		Cooling
Storey Level   No:   Units   w x h   (m²)   U-value   SHGC   Chemitation   (P)   (H)   (G)   P/H	·								0.00	0.80	0.02		
	Storey Level					U-value	SHGC	Orie	ntation				P/H
Storey Level   Identifier No. of Units   No. of U		INO.	Ullits	WAII	(111-)			No	orth				0.39
Storey Level   Identifier No:   Vinits   Vinit	Ground Storey	W1	1	2.05 x 1.43	2.93	7.90	0.81		C <sub>A</sub>	Св	Cc		
Storey Level   No:   Units   w x h   (m²)   U-value   SHGC   Orientation   (P)   (H)   (G)   P/H									0.00	0.80	0.02		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Storey Level					U-value	SHGC	Orie	ntation				P/H
Storey Level   Identifier No. of No:   U-value   Storey Level   Identifier No:   U-value   Storey Level   U-value   Storey Level   Identifier No:   U-value   Storey Level   U-value   U-value   Storey Level   U-value   U-value		NO.	Offits	WAII	(1117)			No	orth				0.50
Storey Level   Identifier   No. of   Units   W x h   (m²)   U-value   SHGC   Orientation   Projection   Height   Height   (P)   (H)   (G)   P/H	Ground Storey	W7	1	0.75 x 1	0.75	5.60	0.77		C <sub>A</sub>	Св	Cc		Cooling
Storey Level   No:   Units   W x h   (m²)   U-value   SHGC   Orientation   (P) (H) (G)   P/H									0.00	0.80	0.02		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Storey Level					U-value	SHGC	Orie	ntation				P/H
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		INO.	Units	WXII	(111-)			E	ast				0.00
Storey Level   Identifier   No. of	Ground Storey	W2	1	1.43 x 1.43	2.04	5.60	0.77		C <sub>A</sub>				Cooling
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$									0.00	0.91	0.02		
Ground Storey   D3   1   4.582 x 1.706   7.82   4.23   0.72     East   2.00   2.45   0.33   0.82	Storey Level					U-value	SHGC	Orie	•				
Ground Storey   D3   1   4.582 x 1.706   7.82   4.23   0.72   Factor (E)   C <sub>A</sub>   C <sub>B</sub>   C <sub>C</sub>   Heating S <sub>C</sub>   S <sub>H</sub>   S <sub>C</sub>		IVO:	Units	II X W	(m²)			E	ast				
CE   SH   Sc   Sc   Storey Level   Identifier   No. of Units   No. of Units   W x h   Mean   U-value   SHGC   Orientation   Projection   Height (H) (G)   P/H	Ground Storey	D3	1	4.582 x 1.706	7.82	4.23	0.72	Factor				Heating	Cooling
Storey Level Identifier No: Units Size Area (m²) U-value SHGC Orientation Projection (P) (H) (G) P/H  West 0.22 2.95 1.52 0.04	•												
No: Units   Wx n   (m²)   West   0.22   2.95   1.52   0.04	Storey Level					U-value	SHGC			Projection	Height	Height	
Factor Libraries Cooling	•	INO:	Units	wxn	(m²)								
	Ground Storey	W2	1	1.43 x 1.43	2.04	5.60	0.77	Factor	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating	Cooling
Ground storey   W2   1   1.43 x 1.45   2.04   5.00   0.77   (E)   CA   CB   CC   S <sub>H</sub>   S <sub>C</sub>   1.27   0.00   0.88   0.02   1.00   1.00	, , , , , , , , , , , , , , , , , , , ,												

Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	ntation	Projection (P)	Height (H)	Height (G)	P/H
							W	est	0.22	2.39	0.26	0.09
Ground Storey	D1	1	2.696 x 1.696	4.57	7.90	0.81	Factor	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling
·							(E) 1.17	0.00	0.88	0.02	1.00	1.00
Storey Level	Identifier	No. of	Size	Area	Huelue	SHGC		ntation	Projection	Height	Height	P/H
Storey Level	No:	Units	wxh	(m²)	U-value	SHGC			(P)	(H)	(G)	
								est I	0.44	0.90	0.29	0.49
Ground Storey	W8	2	0.61 x 0.61	0.74	5.60	0.77	Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
							0.76	0.00	0.88	0.02	1.00	0.85
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	Orier	ntation	Projection	Height	Height	P/H
,	No:	Units	wxh	(m²)					(P)	(H)	(G)	
							Factor	Ι.	_		Heating	Cooling
							(E)	C <sub>A</sub>	Св	Cc	S <sub>H</sub>	Sc
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	ntation	Projection (P)	Height (H)	Height (G)	P/H
	140.	Offits	WAII	(111 )					(1)	(11)	(0)	
							Factor	C <sub>A</sub>	Св	C <sub>C</sub>	Heating	Cooling
							(E)	O <sub>A</sub>	ОВ		S <sub>H</sub>	Sc
	Laboratifi on	NIf	Cine						Dania atian	I I - I - I - I -	I I a Carlo A	
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	ntation	Projection (P)	Height (H)	Height (G)	P/H
				, ,							. ,	
							Factor	C <sub>A</sub>	Св	Cc	Heating	Cooling
							(E)		_		S <sub>H</sub>	S <sub>C</sub>
	Identifier	No. of	Size	Area					Projection	Height	Height	
Storey Level	No:	Units	wxh	(m²)	U-value	SHGC	Orier	ntation	(P)	(H)	(G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	$C_{c}$	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
							(=)				O <sub>H</sub>	O <sub>C</sub>
Storey Level	Identifier	No. of	Size	Area	Huelue	CLICC	Orion	ntation	Projection	Height	Height	P/H
Storey Level	No:	Units	wxh	(m²)	U-value	SHGC	Offer	itation	(P)	(H)	(G)	Р/П
							Feeter	1			Llastina	Cooling
							Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	S <sub>C</sub>
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	Orier	ntation	Projection	Height	Height	P/H
	No:	Units	wxh	(m²)					(P)	(H)	(G)	
							Factor		0		Heating	Cooling
							(E)	C <sub>A</sub>	Св	Сс	S <sub>H</sub>	Sc
	11		O.						5		11.1.1.	
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	ntation	Projection (P)	Height (H)	Height (G)	P/H
										. ,	(-)	
							Factor	C <sub>A</sub>	Св	C <sub>C</sub>	Heating	Cooling
							(E)	- ^	- 0	- 0	S <sub>H</sub>	S <sub>C</sub>
_	Identifier	No. of	Size	Area					Projection	Height	Height	
Storey Level	No:	Units	wxh	(m²)	U-value	SHGC	Orier	ntation	(P)	(H)	(G)	P/H
								•				
							Factor	C <sub>A</sub>	C <sub>B</sub>	$c_c$	Heating	Cooling
							(E)				S <sub>H</sub>	S <sub>C</sub>
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	Orion	ntation	Projection	Height	Height	P/H
Giorey Level	No:	Units	wxh	(m²)	o-value	JUGC	Orier	nauoti	(P)	(H)	(G)	F/II
							Foot				Hooting	Coolina
							Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	Orier	ntation	Projection	Height	Height	P/H
	No:	Units	wxh	(m²)					(P)	(H)	(G)	
							Factor			-	Heating	Cooling
							(E)	C <sub>A</sub>	Св	СС	S <sub>H</sub>	S <sub>C</sub>
			0.									
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	ntation	Projection (P)	Height (H)	Height (G)	P/H
		20		··· /					,	V: -7	\-/-	
							Factor	C <sub>A</sub>	Св	Сс	Heating	Cooling
							(E)		-5	-0	S <sub>H</sub>	Sc
	Identifier	No. of	Size	Area					Projection	Height	Height	
Storey Level	No:	Units	w x h	(m²)	U-value	SHGC	Orier	ntation	(P)	(H)	(G)	P/H
							Factor (E)	C <sub>A</sub>	Св	$C_{C}$	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
							(-/				<u> </u>	<b>5</b> 0

Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
				()			Factor (E)	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
	110.	S.III.S	W.X.I.	(,			Factor (E)	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
	140.	Office	WAII	(iii)			Factor	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien	tation	Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien		Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien		Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
, in the second	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien	tation	Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
Story Edvar	No:	Units	wxh	(m²)	o value	0.100	Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Store Lavel	Identifier	No. of	Size	Area	Harter	61100	(E)		Projection	Height	S <sub>H</sub> Height	Sc
Storey Level	No:	Units	w x h	(m²)	U-value	SHGC	Orien		(P)	(H)	(G) Heating	P/H Cooling
							(E)	C <sub>A</sub>	Св	Cc	S <sub>H</sub>	Sc

Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
				()			Factor (E)	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
	110.	S.III.S	W.X.I	(,			Factor (E)	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
	140.	Office	WAII	(iii)			Factor	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien	tation	Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien		Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien		Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
, in the second	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien	tation	Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
Story Edvar	No:	Units	wxh	(m²)	o value	0.100	Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Store Lavel	Identifier	No. of	Size	Area	Harter	61100	(E)		Projection	Height	S <sub>H</sub> Height	Sc
Storey Level	No:	Units	w x h	(m²)	U-value	SHGC	Orien		(P)	(H)	(G) Heating	P/H Cooling
							(E)	C <sub>A</sub>	Св	Cc	S <sub>H</sub>	Sc

Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	Cc	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
				()			Factor (E)	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	tation	Projection (P)	Height (H)	Height (G)	P/H
	110.	S.III.S	W.X.I	(,			Factor (E)	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orien	itation	Projection (P)	Height (H)	Height (G)	P/H
	140.	Office	WAII	(iii)			Factor	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien	tation	Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien		Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien		Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
, in the second	No:	Units	w x h	(m²)			Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Storey Level	Identifier	No. of	Size	Area	U-value	SHGC	(E) Orien	tation	Projection	Height	S <sub>H</sub> Height	S <sub>C</sub>
Story Edvar	No:	Units	wxh	(m²)	o value	0.100	Factor	C <sub>A</sub>	(P)	(H)	(G) Heating	Cooling
Store Lavel	Identifier	No. of	Size	Area	Harter	61100	(E)		Projection	Height	S <sub>H</sub> Height	Sc
Storey Level	No:	Units	w x h	(m²)	U-value	SHGC	Orien		(P)	(H)	(G) Heating	P/H Cooling
							(E)	C <sub>A</sub>	Св	Cc	S <sub>H</sub>	Sc

Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	itation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	itation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	Св	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>
Storey Level	Identifier No:	No. of Units	Size w x h	Area (m²)	U-value	SHGC	Orier	tation	Projection (P)	Height (H)	Height (G)	P/H
							Factor (E)	C <sub>A</sub>	C <sub>B</sub>	C <sub>C</sub>	Heating S <sub>H</sub>	Cooling S <sub>C</sub>

Signature:
Competent Person: Roger Heatley
Professional Registration No: CAD21342

<sup>(</sup>Interpolation of solar exposure factors, energy constants and heating / cooling shading multipliers is utilised in fenestration element calculations).

I, the undersigned, hereby certify that all the information contained in this report is to the best of my knowledge and belief, true and correct.