Approved Document Part O Simplified overheating Calculations

Site Address

Name/Number	Bedevire (Right Hand)
Street	Bodinnick Road
Town	St Tudy, Bodmin
County	Cornwall
Postcode	PL30 3NX

Results

		Target	Result	Pass/Fail
Maximum Glazing Area	**must be less than**	18.1698	**27.7232**	FAIL
Maximum area of glazing in the most glazed room		7.5746	**16.74**	FAIL
Total Minimum Free Area (% of the floor area)		> 9%	**11.77503**	PASS
Total Minimum Free Area (% of the glazing area)		> 55%	**70.15785**	PASS
Bedroom Minimum Free Area		> 4%	See blow	PASS

Bed 1	Bed 2	Bed 3
7.879185817	**9.338521**	**18.19788**

Does the dwelling meet the simplified requirements for moderate risk with cross Ventilation? FAIL

Building Details

Use	Residential dwelling
Site Location	Cornwall
Risk	Moderate
Cross Ventilation	Yes

Part O Simplified Method Overheating Assessor

Name	Stuart Thomas BSc(Hons) C.Build E FCABE		
Orginisation	Energy Access		
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Date of assessment	10th	October	2023

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Approved Document Part O Simplified overheating Calculations

			Glazing Permitted Table 1.1 (% Floor area)		Area of glazing allowed on this project	
Floor Area of House	LGF	0	North	18		
	GF	103.93	East	18		
	FF	61.25	South	15		
	SF	0	West	11		**11**
						11
	Total	**165.18**				

Largest Glazed Façade -		permitted	18.1698	
Elevation - Galzing m2	N	29.7324		
	NE	29.7324	*take North as worse case	
	E	29.7324		
	SE	24.777	*take South as worse case	
	S	24.777		
	SW	18.1698	*take West as worse case	
	W	18.1698		
	NW	18.1698	*take West as worse case	
		0		
		0		

Notes

Approved Document Part O Simplified overheating Calculations

Maximum area of glazing in the most glazed room (%floor area of room)

				%Glazing Permitted Table 1.1		Area of glazing on this project
Most glazed room is	Kit Liv Din	34.43	4.5m max depth	North	37	
				East	37	
				South	30	
area of the room				West	22	22
						22
	Total	**34.43**				

Largest Glazed Façade -	Proposed	Glazing	permitted	7.5746	
Elevation - Galzing m2	N		12.7391		
	NE		12.7391	*take North as worse case	
	E		12.7391		
	SE		10.329	*take South as worse case	
	S		10.329		
	SW		7.5746	*take West as worse case	
	W	16.74	7.5746		
	NW		7.5746	*take West as worse case	
			16.74		
		16.74			

Notes

opening siz	h	w	area	
W 9 - 13	0	0	12.03	West
W 15	0	0	0.66	South
W 16-18	0	0	4.05	North
		total	16.74	

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Calculator 2a - Minimum free area for the whole dwelling

Free area or equivalent area of windows	19.45		
Floor area of Whole dwelling	165.18		
Glazing area of whole dwelling	27.7232		
Free Area as a % of floor area	11.77503	%	target is > than 9% of the floor area
Free Area as a % of the glazing area	70.15785	%	target is > than 55% of the glazed area

Calculator 2b - Minimum free area for the bedrooms

Bedroom 1			**Bedroom 2**	
Free area or equivalent area of windows for the bedroom	1.2		Free area or equivalent area of windows for the bedroom	1.2
Floor area of the bedroom	15.23		Floor area of the bedroom	12.85
% of floor area	**7.879186**		% of floor area	**9.338521**
Bedroom 3				
Free area or equivalent area of windows for the bedroom	1.03			
Floor area of the bedroom	5.66			
% of floor area	**18.19788**			

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Whole Dwelling Equivalent Free Area *assumed 50mm frame around glazing

	Window Location	Window Reference	Window Orientation	Glazing* Height	Glazing* Width	Glazing Areas	Opening Angle	Equivilent Area (tables D1-D9)	Structural Op Height	Structural Op Width
1	Entrance		East	0.45	0.6	0.27	90	1.86	2.1	1
2	Utility		East	1	0.4	0.4	45	0.51	1.2	0.6
3	Entrance		East	1	0.3	0.3	0	0	1.1	0.4
4	Reception		East	1	1.2	1.2	45	1.3	1.2	2.4
				1.1	0.7	0.77	0	0		
5	Bedroom 2		East	1	1.2	1.2	45	1.3	1.2	2.4
				1.1	0.7	0.77	0	0		
6	Bedroom 1		East	1	1.2	1.2	45	1.3	1.2	2.4
				1.1	0.7	0.77	0	0		
									Total area	**6.88**
7	Bedroom 3		West	1.5	0.6	0.9	45	1.03	1.7	0.8
8	Bathroom		West	0.5	1.6	0.8	90	0.74	0.7	1.8
9	Liv Kit Din		West	0.98	3.42	3.3516	0	0	1.08	3.52
10	Liv Kit Din		West	0.98	3.42	3.3516	0	0	1.08	3.52
11	Liv Kit Din		West	1.8	1.7	3.06	90	3.89	2.1	2.4
12	Liv Kit Din		West	1	1.2	1.2	45	1.3	1.2	2.4
				1.1	0.7	0.77	0	0		
13	Liv Kit Din		West	1	0.3	0.3	0	0	1.1	0.4
									Total area	**13.7332**
14	Reception		North	1	0.4	0.4	45	0.51	1.2	0.6
15	Liv Kit Din		North	0.3	2.2	0.66	45	0.67	0.5	2.4
16	Liv Kit Din		North			1.35	90	1.68	2	1
17	Liv Kit Din		North			1.35	90	1.68	2	1
18	Liv Kit Din		North			1.35	90	1.68	2	1
									Total area	**5.11**
19	FF Landing		Horz			2	0	0	0.8	2.5
									Total area	**2**
						27.7232		19.45		

Notes

fixed
***both sides open fixed centre**

***both sides open fixed centre**

***both sides open fixed centre**

fixed
fixed

***both sides open fixed centre**

fixed
fixed

fixed lantern

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Bedroom - Equivalent Free Area

	Window Reference	Window Orientation	Glazing Height	Glazing Width	Glazing Area	Opening Angle	Equivilent Area (tables D1-D9)		
Bedroom 1									
1		1	1.2	1.2	45	1.3	1.2	2.4	
2		1.1	0.7	0.77	0	0			
3									
4									
5									
					45		1.2		
Bedroom 2									
1		1	1.2	1.2	45	1.3	1.2	2.4	
2		1.1	0.7	0.77	0	0			
3									
4									
5									
					45		1.2		
Bedroom 3									
1		West	1.5	0.6	0.9	45	1.03	1.7	0.8
2									
3									
4									
5									
					0.9		1.03		

The Equivalent Areas have also been Derived using Dr B Jones Window Discharge Coefficient calculator

The window discharge coefficient calculator was developed by
Dr Benjamin Jones of Nottingham University.
And is a copy of the calculator found on the governement website here.