



Dwellings with cross ventilation calculator tool - Moderate Risk Location

Section 1: Buildings or parts of buildings with cross-ventilation should not exceed the maximum glazing areas.

Section 1a: Limiting solar gains - Maximum glazing area for the dwelling

1. Use Calculator 1a- Maximum glazing area for dwelling
2. Select from the drop down list the orientation of the most glazed facade (this will be the same for 1a and 1b)
3. The cell will highlight the cell in Table 1 you need to enter once calculated
4. Enter the floor area and glazing area of the dwelling
5. Take the calculated Area of glazing (5 floor area) and put it into the now red coloured box in table 1.
6. If this stays teal with green font then it meets the standard, if it turns red the value exceeds the standards (see reference table).

Calculator 1a- Maximum glazing area for dwelling

Orientation of the facade that has the largest glazing area	North
Floor area of dwelling	102.44
Glazing area of the dwelling	25.27
Area of glazing (5 floor area)	13.47

Section 1b: Limiting solar gains - Maximum glazing area in the most glazed room

1. Use Calculator 1b- Maximum glazing area for most glazed room
2. Identify the room that has the highest area of glazing
3. Enter the floor area and glazing area of the room in Calculator 1b
4. Take the calculated area of glazing (5 floor area) and put it into the now red coloured box in table 1
5. If this stays teal with green font then it meets the standard, if it turns red then the value exceeds the standards (see reference table).

Calculator 1b- Maximum glazing area for most glazed room

Floor area of most glazed room	31.94
Glazing area of most glazed room	7.25
Minimum area of glazing in the most glazed room (5 floor area of room)	6.96

Table 1: Enter your dwellings data (see instructions)

Section 1: Buildings or parts of buildings with cross-ventilation should not exceed the maximum glazing areas		
Largest glazed facade orientation	Area of glazing for the whole dwelling (5 floor area)	Area of glazing in the most glazed room (5 floor area of room)
North	12.47	13.47
East		
South		
West		
Pass/fail?	Pass	Pass

Section 1 maximum glazed area (pass/fail?)

Pass

Reference Table 1: Limits taken from Approved Document O

Section 1: Buildings or parts of buildings with cross-ventilation should not exceed the maximum glazing areas		
Largest glazed facade orientation	Minimum area of glazing (5 floor area)	Minimum area of glazing in the most glazed room (5 floor area of room)
North	18	27
East	18	27
South	18	30
West	11	22

Section 2: Buildings or parts of buildings with cross-ventilation should be equal to or exceed the minimum free areas.

Section 2a: Removing excess heat - Minimum free area for whole dwelling

1. Use Calculator 2a- Minimum free area for whole dwelling
2. Calculate the equivalent area of all the openings in the dwelling (to do this you can use tab 'Free Eav Area')
3. When calculating for the whole dwelling (2d) daytime opening angles can be used.
4. Enter the floor area and glazing area of the whole dwelling
5. Table 2 will then calculate the minimum free area and compare this to the equivalent area
6. If it meets requirements the cell will go green and if it does not meet the requirements the cell will go red.

If important that when using openings for ventilation as a mitigation measure for overheating that they can actually be opened. For more information on the limitations to opening and the angles of openings with respect to noise, pollution, security protection from falling and protection from entrapment please refer to Approved Document O.

Calculator 2a - Minimum Free Area for Whole Dwelling

Equivalent area of openings	25.36
Floor area of whole dwelling	102.44
Glazing area of whole dwelling	25.27

Section 2b: Removing excess heat - Minimum free area for bedrooms

1. Use Calculator 2b- Minimum free area for bedrooms
2. Calculate the equivalent area of all the bedroom openings (to do this you can use tab 'Free Eav Area')
3. For bedroom ventilation this is to be used of night time and therefore the opening angles should reflect this.
4. Enter the floor area of the bedroom
5. Table 2 will then calculate the minimum free area and compare this to the equivalent area
6. If it meets requirements the cell will go green and if it does not meet the requirements the cell will go red.

If important that when using openings for ventilation as a mitigation measure for overheating that they can actually be opened. For more information on the limitations to opening and the angles of openings with respect to noise, pollution, security protection from falling and protection from entrapment please refer to Approved Document O.

Calculator 2b - Minimum free area for bedrooms

Bedroom 1	Bedroom 2 - Only enter if present	Bedroom 3 - Only enter if present
Free area or Equivalent area of openings for bedroom	2.60	Free area or Equivalent area of openings for bedroom
Floor area of bedroom	18.11	Floor area of bedroom
Bedroom 4 - Only enter if present	Bedroom 5 - Only enter if present	
Free area or Equivalent area of openings for bedroom	1.92	Free area or Equivalent area of openings for bedroom
Floor area of bedroom	18.39	Floor area of bedroom

Table 2: Enter your dwellings data (see instructions)

Section 2: Buildings or parts of buildings with cross-ventilation should equal or exceed the minimum free areas		
The greater of the following:	Minimum Free Area (m ²)	Equivalent area (m ²)
Floor area	18.24	25.36
Glazing Area	13.90	25.36
Bedroom 1	0.52	2.60
Bedroom 2	0.44	2.60
Bedroom 3	0.44	1.66
Bedroom 4	0.45	1.92
Bedroom 5	0.55	1.92
Total Minimum Free Area	Pass	
Bedrooms minimum Free Area Result	Pass	

Section 2: Minimum Free Area (pass/fail)

Pass

Reference Table 2: Limits taken from Approved Document O

Section 2: Buildings or parts of buildings with cross-ventilation should equal or exceed the minimum free areas		
Total minimum free area*	The greater of the following:	
	a. 1% of the floor area	
Bedroom minimum free area	b. 55% of the glazing area	
	4% of the floor area of the room	

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

Pass



Approved Document O - Simplified Method Report

Created in the Elmhurst Overheating tool - For use in England only

Building and Site Details				
Residential building name/number	1014 Wright Properties Farm Development Site			
Street	Rylands Green			
Town	Horswells Heath			
County	West Sussex			
Postcode	BN17 3JH			
Proposed building use/type of building	Domestic Dwelling			
Are there any security, noise or pollution issues?	No			
Site Details	Moderate risk location with cross ventilation			
Is this building high risk and shading strategy required?	No			
Shading strategy included? (See details)	No			
Results				
Minimum area of glazing (5)	Target	Basic		Pass/Fail
	11	12.47		Pass
Minimum area of glazing in the most glazed room (5)	22	35.48		Pass
Total minimum free area on 5 floor area (m ²)	18.24	25.36		Pass
Total minimum free area 5 glazing area (m ²)	13.90	25.36		Pass
The greater of the minimum free area floor area or glazing area divided by the target or ratio				
Bedroom 1 minimum free area (m ²)	0.52	2.60		Pass
Bedroom 2 minimum free area (m ²)	0.44	2.60		Pass
Bedroom 3 minimum free area (m ²)	0.44	1.66		Pass
Bedroom 4 minimum free area (m ²)	0.45	1.92		Pass
Bedroom 5 minimum free area (m ²)	0.55	1.92		Pass
Dwelling overall result	Pass			
Designer's declaration				
Designer's name	Faye Mitchell			
Designer's organisation	Elmhurst Energy Ltd			
Designer's email	info@elmhurstenergy.co.uk			
Designer's contact number	01403915479			
Designer's signature				
Registration number (if applicable)	V9810001			
Date of design	28/10/2025			