
Approved Document O report
Overheating risk in residential buildings
for
95 Martland Fold

95 Martland Fold

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Building details

Project name: 95 Martland Fold	Date: 09-10-2025 14:54:52
Location: Rochdale; ENG, GB	
Address: 95 Marland Fold, Rochdale, OL11 4RF	
Building use: Domestic Housing	
Are there any security, noise, or pollution issues: Assumed no issues.	

Designer's details

Designer's name: Daniel Willis
Designer's organisation: Complete Sustainability Solutions Ltd
Designer's address: 1 Balloon St, Manchester, M4 4BE

Dynamic thermal model

Software: IESVE version 2025.0.0.0	
Weather file: Manchester_DSY1_2020High50_.epw	
Results file: OH02 - 33716 95 Martland Fold.aps	
Number of rooms analysed: 4	
TM59: summer elevated air speed: 0.1	
TM59: occupant category: Category I (vulnerable)	
Overheating mitigation strategy: MVHR to Kitchen and Bedrooms, Glazing g-value of 0.63	
Has the building construction proposal been modelled accurately?	YES
Have the analysed rooms passed the assessment for Approved Doc O Dynamic Thermal Modelling Method (CIBSE TM 59)?	YES
Designer's signature: Daniel Willis	

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Summary

CIBSE TM59 overheating methodology for predominantly naturally ventilated rooms assesses against two criteria, (a) and (b) (for Category I occupancy, T_{max} is reduced by 1K):

- Criterion (a) states that for living rooms, kitchens and bedrooms, the number of hours during which ΔT is greater than or equal to 1K from May to September (or November to March for southern hemisphere locations) shall not exceed 3% of occupied hours
- Criterion (b) states that the operative temperature of the bedrooms from 22:00-07:00 shall not exceed 26°C for more than 1% of annual hours (33 hours is therefore recorded as a fail). Approved document O applies limits to CIBSE TM59 section 3.3 (openings); these requirements are applied by appropriate assignment of MacroFlo types / scripted profiles in the model (see Modelled Openings Section).

CIBSE TM59 overheating methodology for predominantly mechanically ventilated rooms states the operative temperature of all rooms shall not exceed 26°C for more than 3% of annual occupied hours.

CIBSE TM59 also states that the inclusion of corridors in the overheating analysis is mandatory where community heating pipework runs through them. While there is no mandatory target for communal corridors, if an operative temperature of 28°C is exceeded for more than 3% of the total annual hours this should be identified as a significant risk.

Room name	Naturally ventilated Criterion a check	Naturally ventilated Criterion b check	Mechanically ventilated check	Corridor overheating risk check
00 Open Plan Kitchen / Living / Dining	Pass	N/A	-	-
01 Bedroom 1	Pass	Pass	-	-
01 Bedroom 2	Pass	Pass	-	-
01 Bedroom 3	Pass	Pass	-	-

Naturally ventilated rooms – criterion (a)

Criterion (a) states that for living rooms, kitchens and bedrooms, the number of hours during which ΔT is greater than or equal to 1K from May to September (or November to March for southern hemisphere locations) shall not exceed 3% of occupied hours.

Room name	Occupied hours	No. hours $\Delta T \geq 1^\circ\text{K}$	% Occupied hours $\Delta T \geq 1^\circ\text{K}$	Criterion a check
00 Open Plan Kitchen / Living / Dining	1989	10	0.5	Pass
01 Bedroom 1	3672	25	0.7	Pass
01 Bedroom 2	3672	6	0.2	Pass
01 Bedroom 3	3672	5	0.1	Pass

Naturally ventilated rooms – criterion (b)

Criterion (b) states that the operative temperature of the bedrooms from 22:00-07:00 shall not exceed 26°C for more than 1% of annual hours (33 hours is therefore recorded as a fail). Any rooms that are not bedrooms are therefore not assessed, hence the corresponding N/A values.

Room name	No. hours > 26°C 22:00-24:00	No. hours > 26°C 00:00-07:00	Total hours > 26°C	Criterion b check
00 Open Plan Kitchen / Living / Dining	N/A	N/A	N/A	N/A
01 Bedroom 1	13	5	18	Pass
01 Bedroom 2	14	4	18	Pass
01 Bedroom 3	14	4	18	Pass

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Mechanically ventilated rooms

CIBSE TM59 overheating methodology for predominantly mech. vent. rooms states the operative temperature of all rooms shall not exceed 26°C for more than 3% of annual occupied hours.

Room name	No. hours > 26°C	% Annual hours > 26°C	Mechanically ventilated check
No mech vent rooms	N/A	N/A	N/A

Communal corridors

CIBSE TM59 states that whilst there is no mandatory target for communal corridors, if an operative temperature of 28°C is exceeded for more than 3% of annual hours, then this should be identified as a significant risk within the TM59 overheating report.

Room name	No. hours > 28°C	% Annual hours > 28°C	Corridor overheating risk check
No corridors	N/A	N/A	N/A

Modelled details & overheating mitigation strategy

Approved document O: Providing Information & Appendix B requires information about the model and the overheating mitigation strategy. The following tables detail the modelling method and mitigation strategies applied to each analysed room. Where multiple active openings per space (windows & louvres) exist they are all listed. Occupancy, equipment and lighting profiles for occupied rooms comply with TM59 section 5.

Modelled occupancy

Room name	Floor area m ²	Thermal template	Occupancy profile	Equipment profile	Lighting profile
00 Open Plan Kitchen / Living / Dining	97.41	TM59 - 3 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
01 Bedroom 1	32.66	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
01 Bedroom 2	14.8	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
01 Bedroom 3	11.54	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h

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Modelled openings

Room name	Window to wall ratio %	Window g-value (EN 410)	Opening gross area m ²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
00 Open Plan Kitchen / Living / Dining	17.02	0.63, 0.63, 0.63, 0.63, 0.63	1.11, 1.37, 1.37, 2.41, 1.89, 1.89, 1.89, 1.99, 2.0, 2.1, 2.1, 0.49, 0.49, 0.83, 0.59, 0.98, 1.74, 0.74, 0.74	45.0, 0.0, 0.0, 0.0, 100.0, 100.0, 0.0, 100.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 45.0, 45.0, 45.0, 45.0	10.33	off continuously, on continuously, ADO.Section_26a
01 Bedroom 1	30.89	0.63	1.89, 1.89, 2.0, 2.0, 2.1, 2.1	100.0, 100.0, 0.0, 20.0, 0.0, 0.0	12.8	off continuously, ADO.Section_26ab, Internal Doors Bedroom Weekly
01 Bedroom 2	15.05	0.63	1.27, 0.61, 1.89	20.0, 0.0, 100.0	14.49	off continuously, ADO.Section_26ab, Internal Doors Bedroom Weekly
01 Bedroom 3	18.64	0.63	1.89, 1.27, 0.6	100.0, 20.0, 0.0	18.58	off continuously, ADO.Section_26ab, Internal Doors Bedroom Weekly

Modelled ventilation

Room name	Infiltration rate ACH	Mech vent flow rate ACH
00 Open Plan Kitchen / Living / Dining	0.2	0.17
01 Bedroom 1	0.2	0.24
01 Bedroom 2	0.2	0.58
01 Bedroom 3	0.2	0.66