ATP - Queensmere House

Part O Overheating Report

April 2025

Project Ref: 3280433

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We are **thermal comfort** experts

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We are **sustainability** experts

We are **building physics** experts

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abbreviations

ADF	-	Approved Document F
ADO	-	Approved Document O
APR	-	Air Permeability Rating
CIBSE	-	Chartered Institution of Building Service Engineers
EPC	-	Energy Performance Certificate
DSY	-	Design Summer Year
KLD	-	Kitchen / Living / Dining
MVHR	-	Mechanical Ventilation and Heat Recovery
SAP	-	Standard Assessment Procedure
VLT	-	Visible Light Transmittance

executive summary

executive summary

Thermal comfort has been assessed in accordance with Approved Document Part O: Overheating (2021 edition) of the Building Regulations.

Results demonstrate all occupied rooms fail criterion (a) and (b) for naturally ventilated rooms, based on the requirements of Approved Document Part O, and the CIBSE TM59 methodology detailed within this report.

zed. have compiled this report on behalf of ATP to provide a summary of the overheating risk assessment for the proposed Queensmere House, located in East Grinstead, following Approved Document Part O: Overheating (2021 edition) of the Building Regulations.

The Queensmere House development consists of 4 storeys of domestic accommodation consisting of 24 apartments. As new build residential spaces these plots are all subject to assessment under Approved Document Part O: Overheating (2021 edition).

Works have been undertaken by Jordan Turner, a Building Physics & Sustainability Engineer and CIBSE registered Energy Assessor and Low Carbon Consultant (LCEA206448). Government approved IES - VE (v2024.1.0.0) dynamic thermal modelling software has been used in accordance with CIBSE AM11 & CIBSE TM59.

Building attributes and performance details have been provided to **zed.** by ATP.

An annual simulation has been undertaken utilising the closest applicable weather data for the proposed building, which is London Gatwick DSY weather data.

Compliance has been assessed against the criteria for predominantly naturally ventilated homes as set out within CIBSE TM59:

(a) *For living rooms, kitchens and bedrooms: the number of hours which ΔT is greater than or equal to one degree (K) during the period May to September inclusive shall not be more than 3 percent of occupied hours. (CIBSE TM52 Criterion 1: Hours of exceedance).*

(b) *For bedrooms only: to guarantee comfort during the sleeping hours the operative temperature in the bedroom from 10pm to 7am shall not exceed 26°C for more than 1% of annual hours. (Note: 1% of the annual hours between 22:00 and 7:00 for bedrooms is 32hrs, so 33 or more hours above 26°C will be recorded as a fail).*

Results demonstrate overall compliance with CIBSE TM59 has not been achieved.

approved document O: overheating

approved document O

Approved Document O: Overheating (ADO) gives guidance on how to comply with Part O of the Building Regulations.

Figure 1. approved document O: overheating

Approved Document Part O (ADO) outlines two standardised approaches to predicting the overheating risk for residential buildings, Section 1: Simplified Method, and Section 2: Dynamic Thermal Modelling. The dynamic method has been used in this assessment. The approach in Section 2 of ADO uses the TM59 methodology outlined in this report, in addition to further limitations in the form of standardised window opening profiles, specific to Part O outlined below:

(a) When a room is occupied during the day (8am to 11pm), openings should be modelled to do all the following.

i. Start to open when the internal temperature exceeds 22°C.

ii. Be fully open when the internal temperature exceeds 26°C.

iii. Start to close when the internal temperature falls below 26°C.

iv. Be fully closed when the internal temperature falls below 22°C.

(b) At night (11pm to 8am), openings should be modelled as fully open if both of the following apply.

i. The opening is on the first floor or above and not easily accessible.

ii. The internal temperature exceeds 23°C at 11pm.

(c) When a ground floor or easily accessible room is unoccupied, both of the following apply.

i. In the day, windows, patio doors and balcony doors should be modelled as open, if this can be done securely, following the guidance in paragraph 3.7 [of ADO].

ii. At night, windows, patio doors and balcony doors should be modelled as closed. d. An entrance door should be included, which should be shut all the time.

(d) An entrance door should be included, which should be shut all the time.

These window opening profiles are referenced back to later in the report within table 3.

It should be noted due to the absence of community heating pipework, communal corridors are not required to be assessed as per the guidance stated on Section 3.9 of CIBSE TM59.

CIBSE: TM59

CIBSE: TM59

CIBSE: TM59: Design methodology for the assessment of overheating risk in homes (2017) gives guidance on the risk of domestic overheating.

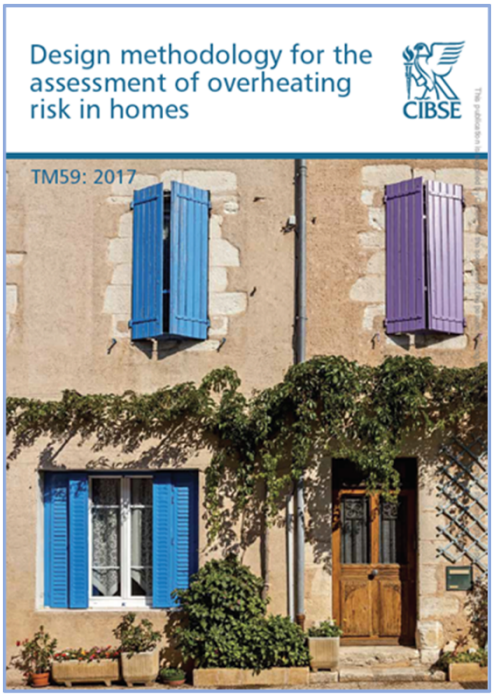

Figure 2. CIBSE TM59: 2017

Recent evidence has shown that overheating risk needs to be taken seriously in the residential sector. Many new or refurbished homes have designs that contribute to overheating risk by, for example, having high proportions of glazing (resulting in excessive solar heat gains), inadequate natural ventilation strategies or mechanical ventilation systems that are not delivering the intended air change rates.

Many factors influence overheating in homes, including the intensity of heat gains, occupancy patterns, orientation, dwelling layout, shading strategy and ventilation method. Dynamic thermal modelling can be used to simulate the internal temperature conditions and will therefore help establish whether threshold conditions of discomfort will be reached. Given the complexity of the factors influencing overheating it is important that a standardised methodology is used to assess risk and hence the need for a technical memorandum. It can be applied to dwellings, care homes and student residences. Early analysis of overheating risk is recommended so that mitigation strategies can be reviewed in design proposals.

This is a standardised approach to predicting overheating risk for residential building designs (new-build or major refurbishment) using dynamic thermal analysis. The testing of the methodology has focused on flats, as they tend to represent a higher overheating risk than houses. However, the methodology should also be applied to houses.

Developments should refer to the latest CIBSE design summer year (DSY) weather files and be required to pass using the DSY1 file most appropriate to the site location, for the 2020's, high emissions, 50% percentile scenario.

The following weather file has been selected as the most appropriate to the site location.

Closest available simulation weather file:
CIBSE – London_GTW_DSY1_2020High50.epw

limitations

limitations

building regulations

All occupied domestic rooms on the lower ground floor and the south facing rooms are considered lower than 3.5m above ground level, as such the restrictions under Section 3.6 (security) are applicable.

Occupied spaces are bedrooms, kitchen and living/dining rooms, but only bedrooms are considered as occupied spaces overnight.

Unoccupied spaces are hallways, bathrooms and stores/cupboards.

Outlined below are some limitations from Approved Document Part O (ADO), as well as their impact on the dynamic thermal model.

Part O Limitations

Under Section 3.6 (Security) of ADO, only windows that can be opened securely, and are not easily accessible should be considered to provide useful ventilation.

Easily Accessible is defined in Appendix A of ADO as:

(a) a window or doorway, any part of which is within 2m vertically of an accessible level surface, such as the ground or basement level, or an access boundary.

(b) a window within 2m vertically of a flat or sloping roof (with a pitch of less than 30 degrees) that is within 3.5m of ground level.

Windows to occupied rooms assessed against criterion (b) that are easily accessible must be considered closed overnight for safety reasons, even if the window opening is restricted.

All occupied domestic rooms on the lower ground floor and the south facing rooms are considered lower than 3.5m above ground level, as such the restrictions under Section 3.6 (security) are applicable.

Section 3.8-3.10 (Protection from falling) states openings which are intended to be open for long periods to reduce overheating risk may pose a risk to falls from height. Table 3.1 in ADO states that for a window to open more than 100mm, a guarding height (here sill height) of 1100mm must be met.

All openable bedroom windows across the Queensmere House development have a sill height less than 1100mm, as such the restrictions under Section 3.8-3.10 are applicable. All windows are modelled as restricted to a 100mm opening.

limitations

project specific

Outlined below are project specific limitations for Queensmere House.

Acoustic Limitations

A noise assessment report has been produced by Hawkins Environmental (4th November 2024) which determines that the noise on the south façade of the proposed developments is greater than that permitted for part Part O, as such all windows must remain closed overnight between the hours of 2300 – 0800 for acoustic requirements.

Mechanical Ventilation and Heat Recovery (MVHR) systems will be required to aid with any residual overheating during acoustically restricted periods.

As a result of these restrictions, opening profile (a) from ADO (see page 6) is assigned to all windows. This simulates windows opening during the daytime but keeps them closed during acoustically restricted periods.

thermal model

thermal model

Thermal modelling has been carried out using IES-VE v2024.1.0.0 dynamic simulation software.

The model for Queensmere House has been constructed using IES-VE software from the architectural drawings provided by ATP. The thermal envelope specification has been assigned based on a basic design intent agreed with ATP.

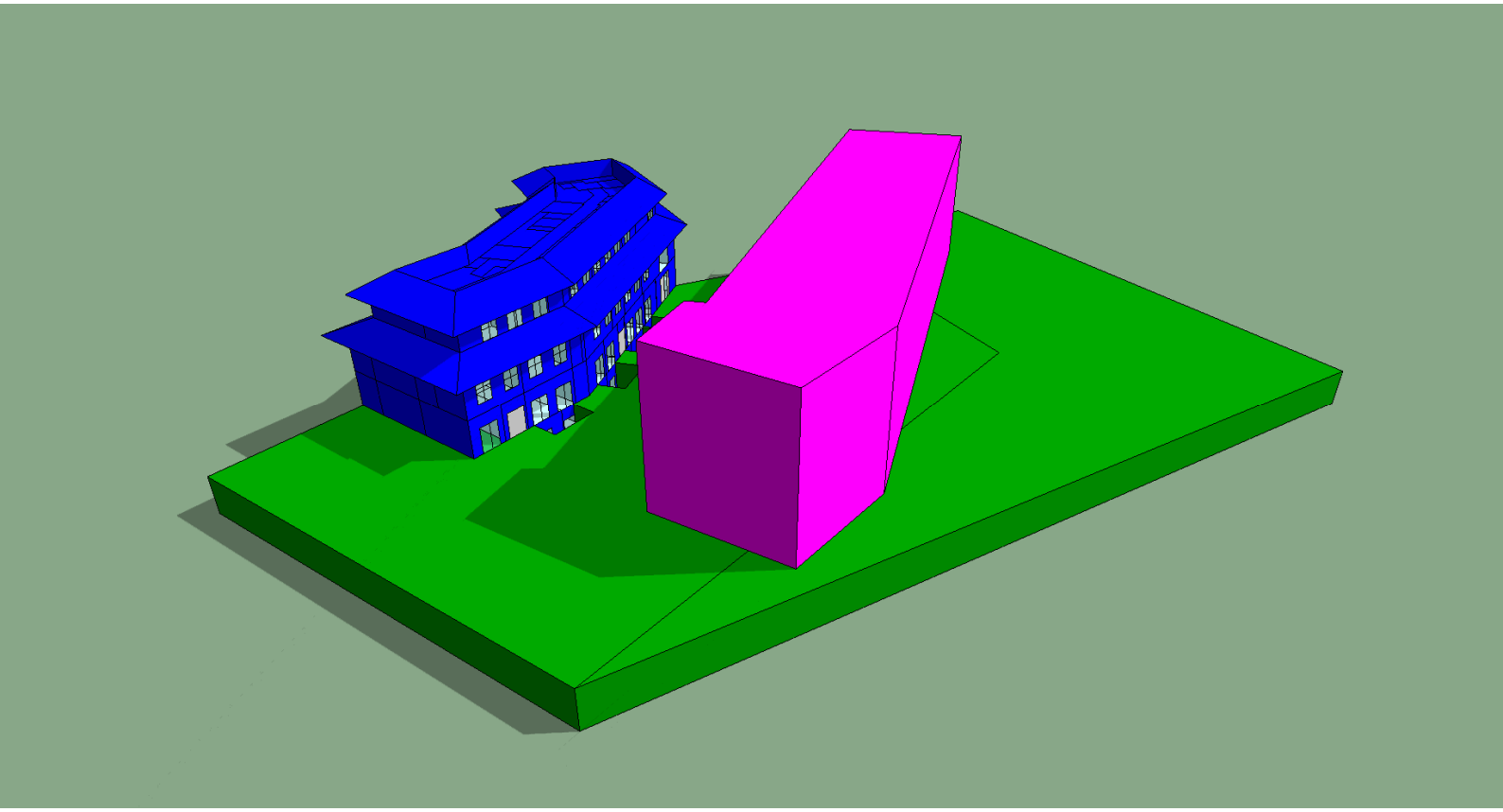

Figure 3. IES-VE thermal model geometry

Fabric & Openings	U-Value (W/m^2.K)	Notes
Ground floor	0.17	
External walls	0.21	
External walls - Retaining	0.18	
Roof	0.13	
Windows	1.40	G-value / VLT = 0.42 / 0.71
Doors	2.00	
Air permeability	**Infiltration (ach^{-1})**	**Notes**
Entire building	0.25	Equivalent to the design target APR of 5.0m^3(hr.m^2)@50Pa.

Table 1. building envelope specification

internal gains

internal gains

Internal gains are set out within Table 2 of CIBSE: TM59 and assigned based on room and dwelling type.

The occupancy, and equipment, gains and profiles have been developed for the purpose of the TM59 methodology. They represent a robust test that ensures the key aspects of overheating are captured namely the hours when risk is highest (i.e. the middle of the day and early afternoon) and nighttime hours when, if rooms do not cool down, sleep can be disrupted.

Unit/ room type	Occupancy	Equipment load
Studio	2 people at 70% gains from 11 pm to 8 am 2 people at 100% gains from 8 am to 11 pm	Peak load of 450 W from 6 pm to 8 pm*. 200 W from 8 pm to 10 pm 110 W from 9 am to 6 pm and 10 pm to 12 pm Base load of 85 W for the rest of the day
1-bedroom apartment: living room/kitchen	1 person from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 450 W from 6 pm to 8 pm 200 W from 8 pm to 10 pm 110 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 85 W for the rest of the day
1-bedroom apartment: living room	1 person at 75% gains from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 150 W from 6 pm to 10 pm 60 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 35 W for the rest of the day
1-bedroom apartment: kitchen	1 person at 25% gains from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 300 W from 6 pm to 8 pm Base load of 50 W for the rest of the day
2-bedroom apartment: living room/kitchen	2 people from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 450 W from 6 pm to 8 pm 200 W from 8 pm to 10 pm 110 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 85 W for the rest of the day
2-bedroom apartment: living room	2 people at 75% gains from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 150 W from 6 pm to 10 pm 60 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 35 W for the rest of the day
2-bedroom apartment: kitchen	2 people at 25% gains from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 300 W from 6 pm to 8 pm Base load of 50 W for the rest of the day
3-bedroom apartment: living room/kitchen	3 people from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 450 W from 6 pm to 8 pm 200W from 8 pm to 10 pm 110 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 85 W for the rest of the day
3-bedroom apartment: living room	3 people at 75% gains from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 150 W from 6 pm to 10 pm 60 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 35 W for the rest of the day
3-bedroom apartment: kitchen	3 people at 25% gains from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 300 W from 6 pm to 8 pm base load of 50 W for the rest of the day
Double bedroom	2 people at 70% gains from 11 pm to 8 am 2 people at full gains from 8 am to 9 am and from 10 pm to 11 pm 1 person at full gains in the bedroom from 9 am to 10 pm	Peak load of 80 W from 8 am to 11 pm Base load of 10 W during the sleeping hours
Single bedroom (too small to accommodate double bed)	1 person at 70% gains from 11 pm to 8 am 1 person at full gains from 8 am to 11 pm	Peak load of 80 W from 8 am to 11 pm Base load of 10 W during sleeping hours
Communal corridors	Assumed to be zero	Pipework heat loss only; see section 3.1 above

Table 2. CIBSE TM59 – table 2

ventilation strategy

ventilation strategy

The Queensmere House Development has been proposed with predominantly natural ventilation, utilizing openable windows and balcony/patio doors.

A noise assessment report by Hawkins Environmental (dated 4th November 2024) indicates that noise levels on the south façade of the proposed development exceed the limits set for Part O. As a result, all windows must remain closed overnight, between the hours of 2300 and 0800, to meet acoustic requirements.

window openings

window openings

The Queensmere House Development has been proposed with predominantly natural ventilation, utilising openable windows and balcony/patio doors.

The windows in each room are controlled separately, are in line with CIBSE TM59 modelling guidance and have been assigned the appropriate opening profiles specified in ADO.

Openable windows and balcony doors are modelled to open during daytime hours (8am to 11pm) when both the internal dry bulb temperature exceeds 22°C and the room is occupied. No windows are openable overnight due to acoustic requirements.

Table 3 below details all opening types. These openings are displayed in Figures 4 – 7 overleaf.

Opening Ref & Colour	Description	Exposure Type	Opening Category	Openable Area (%)	Opening restriction (mm)	Equivalent Free Area (% of gross)	Opening Profile
XTRN0010	LGF_SF_Door_(day)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	9.9	100	9.9	ADO.Section_26a
XTRN0008	LGF_NF_Window_(day)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	14.8	100	14.8	ADO.Section_26a
XTRN0002	LGF_NF_Door_(day unoccupied)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	7.3	100	7.3	ADO.Section_26c
XTRN0015	GF_SF_Door_(day)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	11.6	100	11.6	ADO.Section_26a
XTRN0014	GF_SF_Door_(day unoccupied)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	11.6	100	11.6	ADO.Section_26c
XTRN0013	GF_NF_Window_2_(day)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	17.3	100	17.3	ADO.Section_26a
XTRN0012	GF_NF_Window_2_(day unoccupied)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	17.3	100	17.3	ADO.Section_26c
XTRN0011	GF_NF_Window_1_(day unoccupied)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	17.3	100	17.3	ADO.Section_26c
XTRN0020	FF_SF_Window_1_(day)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	11.6	100	11.6	ADO.Section_26a
XTRN0017	FF_NF_Window_2_(day unoccupied)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	17.3	100	17.3	ADO.Section_26c
XTRN0018	FF_NF_Window_2_(day)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	17.3	100	17.3	ADO.Section_26a
XTRN0016	FF_NF_Window_1_(day unoccupied)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	17.3	100	17.3	ADO.Section_26c
XTRN0023	SF_SF_Window_1_(day)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	11.6	100	11.6	ADO.Section_26a
XTRN0024	SF_SF_Window_1_(day unoccupied)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	11.6	100	11.6	ADO.Section_26c
XTRN0021	SF_NF_Window_1_(day unoccupied)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	11.6	100	11.6	ADO.Section_26c
XTRN0022	SF_NF_Window_1_(day)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	11.6	100	11.6	ADO.Section_26a
XTRN0001	ADO section 2.6d (closed)	05. 1:1 semi-exposed wall	Custom / sharp edge orifice	0	0	0	ADO.AlwaysOff

Table 3. IES macro-flo window and door types

window openings

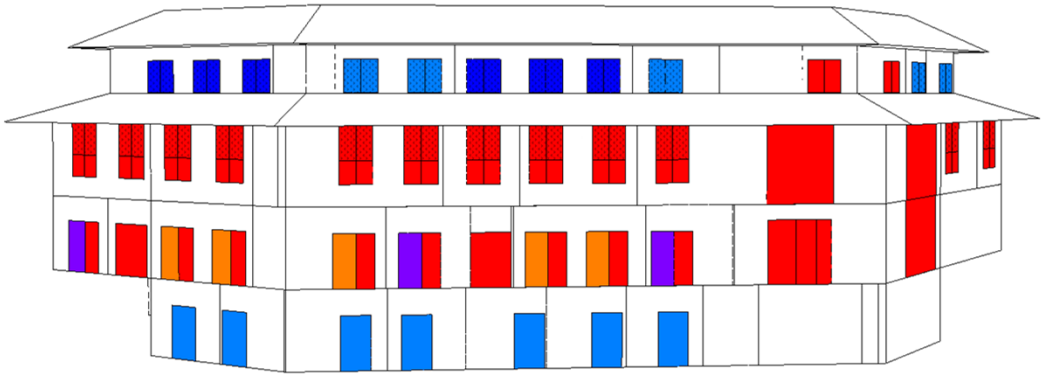

Figure 4. Openable Window Assignment – Southeast Elevation

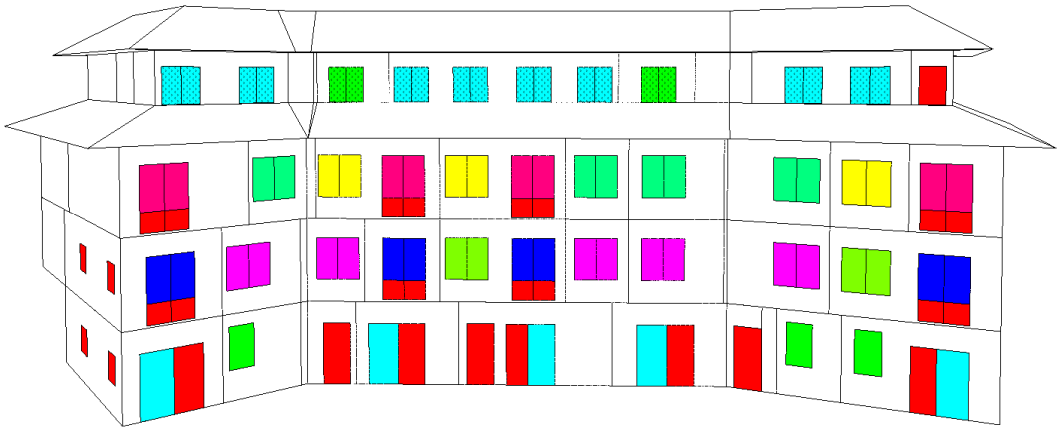

Figure 5. Openable Window Assignment – Northwest Elevation

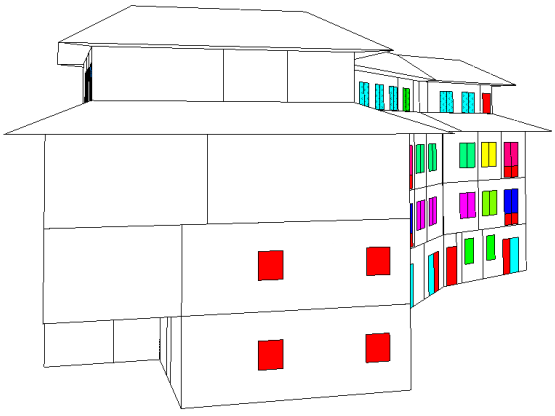

Figure 6. Openable Window Assignment – North Elevation

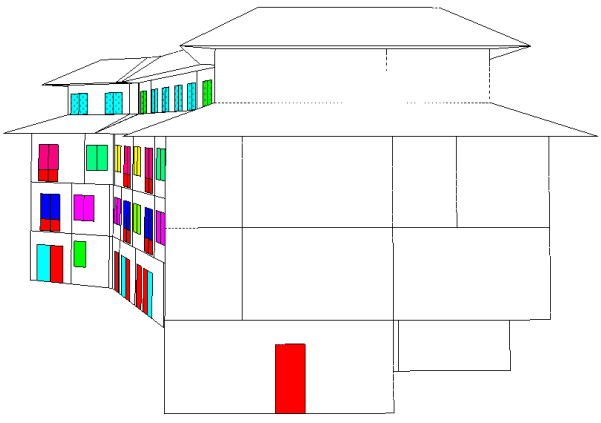

Figure 7. Openable Window Assignment – Southwest Elevation

results

results

CIBSE TM59: Criterion 1 & 2 – Nat Vent (CIBSE London Gatwick_DSY1_2020High50.epw)

The below results show that only one occupied room complies with both criterion (a) and (b) (bedrooms only) of Approved Document O. thermal comfort criteria. Only bedroom spaces are required to be assessed against criterion b.

Room Name	Criterion (a) (%Hrs Top-Tmax>=1K)	(a) Pass /Fail	Criterion (b) (hrs > 26°C 10pm-7am)	(b) Pass /Fail
Limiting Value	3		32	
00_LGF_01_2b4p_Bed_ 1 (2pp)	8.3	FAIL	640	FAIL
00_LGF_01_2b4p_Bed_ 2 (2pp)	8.8	FAIL	712	FAIL
00_LGF_01_2b4p_LDK	4.3	FAIL	N/A	N/A
00_LGF_02_3b5p_Bed_ 1 (2pp)	10.1	FAIL	734	FAIL
00_LGF_02_3b5p_Bed_ 2 (2pp)	8.5	FAIL	749	FAIL
00_LGF_02_3b5p_Bed_ 3 (1pp)	8.6	FAIL	625	FAIL
00_LGF_02_3b5p_LDK	23	FAIL	N/A	N/A
00_LGF_03_2b4p_Bed_ 1 (2pp)	9.4	FAIL	725	FAIL
00_LGF_03_2b4p_Bed_ 2 (2pp)	12	FAIL	752	FAIL
00_LGF_03_2b4p_LDK	17	FAIL	N/A	N/A
00_LGF_04_1b2p_Bed_ 1 (2pp)	12.2	FAIL	764	FAIL
00_LGF_04_1b2p_Bed_ 1 (2pp)	10.3	FAIL	764	FAIL
00_LGF_04_1b2p_LDK	31.3	FAIL	N/A	N/A
00_LGF_04_1b2p_LDK	18.3	FAIL	N/A	N/A
01_GF_01_1b2p_Bed_1 (2pp)	11.1	FAIL	648	FAIL
01_GF_01_1b2p_LDK	23.3	FAIL	N/A	N/A
01_GF_02_1b2p_Bed_1 (2pp)	5.8	FAIL	623	FAIL
01_GF_02_1b2p_LDK	6.6	FAIL	N/A	N/A
01_GF_03_1b2p_Bed_1 (2pp)	21	FAIL	869	FAIL
01_GF_03_1b2p_LDK	24.7	FAIL	N/A	N/A
01_GF_04_2b3p_Bed_2 (1pp)	8.1	FAIL	563	FAIL
01_GF_04_2b3p_Bed_2 (2pp)	7.7	FAIL	657	FAIL
01_GF_04_2b3p_LDK	10.4	FAIL	N/A	N/A
01_GF_05_1b1p_Bed_1 (1pp)	17.6	FAIL	715	FAIL
01_GF_05_1b1p_LDK	26.4	FAIL	N/A	N/A
01_GF_06_1b1p_Bed_1 (1pp)	8.3	FAIL	646	FAIL
01_GF_06_1b1p_LDK	15.8	FAIL	N/A	N/A
01_GF_07_1b2p_Bed_1 (2pp)	10.6	FAIL	593	FAIL
01_GF_07_1b2p_LDK	19.9	FAIL	N/A	N/A
02_FF_06_1b2p_Bed_1 (2pp)	8	FAIL	560	FAIL

Table 4a. Part O – Overheating Results

results

CIBSE TM59: Criterion 1 & 2 – Nat Vent (CIBSE London Gatwick_DSY1_2020High50.epw)

The below results show that only one occupied room complies with both criterion (a) and (b) (bedrooms only) of Approved Document O. thermal comfort criteria. Only bedroom spaces are required to be assessed against criterion b.

Room Name	Criterion (a) (%Hrs Top-Tmax>=1K)	(a) Pass /Fail	Criterion (b) (hrs > 26°C 10pm-7am)	(b) Pass /Fail
Limiting Value	3		32	
02_FF_07_2b4p_Bed_2 (2pp)	21	FAIL	713	FAIL
02_FF_01_1b2p_Bed_1 (2pp)	5.5	FAIL	409	FAIL
02_FF_02_1b2p_Bed_1 (2pp)	4.2	FAIL	472	FAIL
02_FF_02_1b2p_LDK	5	FAIL	N/A	N/A
02_FF_04_2b3p_Bed_2 (1pp)	6.4	FAIL	416	FAIL
02_FF_04_2b3p_Bed_1 (2pp)	5.6	FAIL	511	FAIL
02_FF_04_2b3p_LDK	7.6	FAIL	N/A	N/A
02_FF_06_1b2p_LDK	9.5	FAIL	N/A	N/A
02_FF_01_1b2p_LDK	11.8	FAIL	N/A	N/A
02_FF_03_1b2p_LDK	14.3	FAIL	N/A	N/A
02_FF_03_1b2p_Bed_1 (2pp)	13.6	FAIL	675	FAIL
02_FF_05_1b1p_Bed_1 (1pp)	8.3	FAIL	503	FAIL
02_FF_05_2b3p_LDK	26.3	FAIL	N/A	N/A
02_FF_07_2b4p_Bed_1 (2pp)	13.8	FAIL	652	FAIL
02_FF_07_2b4p_LDK	12	FAIL	N/A	N/A
03_SF_05_2b3p_Bed_1 (2pp)	6.3	FAIL	602	FAIL
03_SF_05_2b3p_Bed_2 (1pp)	10.6	FAIL	608	FAIL
03_SF_03_1b2p_Bed_1 (2pp)	6.1	FAIL	624	FAIL
03_SF_03_1b2p_LDK	4.7	FAIL	N/A	N/A
03_SF_01_1b2p_LDK	2.9	PASS	N/A	N/A
03_SF_01_1b2p_Bed_1 (2pp)	3.6	FAIL	461	FAIL
03_SF_05_2b3p_LDK	6.6	FAIL	N/A	N/A
03_SF_04_1b2p_Bed_1 (2pp)	5.5	FAIL	529	FAIL
03_SF_02_1b2p_LDK	3.9	FAIL	N/A	N/A
03_SF_04_1b2p_LDK	6.5	FAIL	N/A	N/A
03_SF_02_1b2p_Bed_1 (2pp)	4.9	FAIL	533	FAIL

Table 4b. Part O – Overheating Results

conclusion

conclusion

Thermal comfort has been assessed in accordance with Approved Document Part O: Overheating (2021 edition) of the Building Regulations.

Results demonstrate all occupied rooms fail criterion (a) and (b) for naturally ventilated rooms, based on the requirements of Approved Document Part O, and the CIBSE TM59 methodology detailed within this report.

zed. have undertaken this assessment, on behalf of ATP, for the proposed Queensmere House, in accordance with the Approved Document Part O and CIBSE TM59 assessment methodology for assessing overheating risk in predominantly naturally ventilated dwellings.

Analysis has been carried out against the required 2020 High50 DSY1 weather data for London Gatwick, the closest appropriate weather data for the Queensmere House development.

- Results demonstrate that only one occupied zone (03_SF_01_1b2p_LDK) complies with CIBSE TM59 Criterion (a).
- Results demonstrate that all occupied zones do not achieve compliance with CIBSE TM59 Criterion (b).

Results therefore demonstrate overall compliance with CIBSE TM59 has not been achieved.

It should be noted that compliance with Part O is difficult to achieve for naturally ventilated buildings in the south of England, and compliance would not be expected for a building with both window restrictions due to security reasons and acoustic restrictions on an evening. Mechanical ventilation should be considered to achieve compliance with Part O .

The Approved Document Part O Compliance Report Output Document can be found in the Appendix A of this report.

drawing register

drawing register

The thermal model has been constructed using the following drawings.

Drawing Title	Drawing Reference	Issued By	Revision
Proposed Plan Layouts Lower Ground Floor	24152_PL04	ATP	A
Proposed Plan Layouts Ground Floor	24152_PL05	ATP	A
Proposed Plan Layouts First & Second Floor	24152_PL06	ATP	A
Proposed Front and Rear Elevations	24152_PL07	ATP	A
Proposed Side Elevations and Section	24152_PL08	ATP	A

Table 5. Drawing Register

appendix A: part O report

Approved Document O report
Overheating risk in residential buildings
for
Queensmere House

Queensmere House

Building details

Project name: Queensmere House	Date: 30-04-2025 15:08:31
Location: London Gatwick, United Kingdom	
Address: 49 Queens Road, East Grinstead, RH19 1BG	
Building use: Domestic	
Are there any security, noise, or pollution issues: Security and Acoustic	

Designer's details

Designer's name: Jordan Turner
Designer's organisation: Zero Energy Design
Designer's address: Upperbank House, Horsforth, Leeds LS18 4BN

Dynamic thermal model

Software: IESVE version 2024.1.0.0	
Weather file: London_GTW_DSY1_2020High50.epw	
Results file: London_GTW_DSY1_2020High50.epw.aps	
Number of rooms analysed: 68	
TM59: summer elevated air speed: 0.1	
TM59: occupant category: Category II (normal)	
Overheating mitigation strategy:	
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)?	NO
Designer's signature:	

Summary

CIBSE TM59 overheating methodology for predominantly naturally ventilated rooms assesses against two criteria, (a) and (b) (for Category I occupancy, Tmax 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_LGF_01_2b4p_Bed_1 (2pp)	Fail	Fail	-	-
00_LGF_01_2b4p_Bed_2 (2pp)	Fail	Fail	-	-
00_LGF_01_2b4p_LDK	Fail	N/A	-	-
00_LGF_02_3b5p_Bed_1 (2pp)	Fail	Fail	-	-
00_LGF_02_3b5p_Bed_2 (2pp)	Fail	Fail	-	-
00_LGF_02_3b5p_Bed_3 (1pp)	Fail	Fail	-	-
00_LGF_02_3b5p_LDK	Fail	N/A	-	-
00_LGF_03_2b4p_Bed_1 (2pp)	Fail	Fail	-	-
00_LGF_03_2b4p_Bed_2 (2pp)	Fail	Fail	-	-
00_LGF_03_2b4p_LDK	Fail	N/A	-	-
00_LGF_04_1b2p_Bed_1 (2pp)	Fail	-	-	-
00_LGF_04_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
00_LGF_04_1b2p_LDK	Fail	-	-	-
00_LGF_04_1b2p_LDK	Fail	N/A	-	-
01_GF_01_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
01_GF_01_1b2p_LDK	Fail	N/A	-	-
01_GF_02_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
01_GF_02_1b2p_LDK	Fail	N/A	-	-
01_GF_03_1b2p_Bed_1 (2pp)	Fail	Fail	-	-

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Room name	Naturally ventilated Criterion a check	Naturally ventilated Criterion b check	Mechanically ventilated check	Corridor overheating risk check
01_GF_03_1b2p_LDK	Fail	N/A	-	-
01_GF_04_2b3p_Bed_2 (1pp)	Fail	Fail	-	-
01_GF_04_2b3p_Bed_2 (2pp)	Fail	Fail	-	-
01_GF_04_2b3p_LDK	Fail	N/A	-	-
01_GF_05_1b1p_Bed_1 (1pp)	Fail	Fail	-	-
01_GF_05_1b1p_LDK	Fail	N/A	-	-
01_GF_06_1b1p_Bed_1 (1pp)	Fail	Fail	-	-
01_GF_06_1b1p_LDK	Fail	N/A	-	-
01_GF_07_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
01_GF_07_1b2p_LDK	Fail	N/A	-	-
02_FF_06_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
02_FF_07_2b4p_Circ	Pass	N/A	-	-
02_FF_07_2b4p_Bed_2 (2pp)	Fail	Fail	-	-
02_FF_07_2b4p_St	Pass	N/A	-	-
02_FF_01_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
02_FF_01_1b2p_Circ	Pass	N/A	-	-
02_FF_02_1b2p_Circ	Pass	N/A	-	-
02_FF_02_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
02_FF_02_1b2p_LDK	Fail	N/A	-	-
02_FF_04_2b3p_Bed_2 (1pp)	Fail	Fail	-	-
02_FF_04_2b3p_Bed_1 (2pp)	Fail	Fail	-	-
02_FF_04_2b3p_Circ	Pass	N/A	-	-
02_FF_04_2b3p_LDK	Fail	N/A	-	-
02_FF_06_1b2p_LDK	Fail	N/A	-	-
02_FF_06_1b2p_Circ	Pass	N/A	-	-
02_FF_01_1b2p_LDK	Fail	N/A	-	-
02_FF_03_1b2p_LDK	Fail	N/A	-	-
02_FF_03_1b2p_Circ	Pass	N/A	-	-
02_FF_03_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
02_FF_05_1b1p_Bed_1 (1pp)	Fail	Fail	-	-
02_FF_05_2b3p_Circ	Pass	N/A	-	-

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Room name	Naturally ventilated Criterion a check	Naturally ventilated Criterion b check	Mechanically ventilated check	Corridor overheating risk check
02_FF_05_2b3p_LDK	Fail	N/A	-	-
02_FF_07_2b4p_Bed_1 (2pp)	Fail	Fail	-	-
02_FF_07_2b4p_LDK	Fail	N/A	-	-
03_SF_05_2b3p_Bed_1 (2pp)	Fail	Fail	-	-
03_SF_05_2b3p_Bed_2 (1pp)	Fail	Fail	-	-
03_SF_05_2b3p_Circ	Pass	N/A	-	-
03_SF_03_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
03_SF_03_1b2p_LDK	Fail	N/A	-	-
03_SF_01_1b2p_LDK	Pass	N/A	-	-
03_SF_01_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
03_SF_01_1b2p_Circ	Pass	N/A	-	-
03_SF_05_2b3p_LDK	Fail	N/A	-	-
03_SF_04_1b2p_Bed_1 (2pp)	Fail	Fail	-	-
03_SF_04_1b2p_Circ	Pass	N/A	-	-
03_SF_02_1b2p_LDK	Fail	N/A	-	-
03_SF_02_1b2p_Circ	Pass	N/A	-	-
03_SF_04_1b2p_LDK	Fail	N/A	-	-
03_SF_02_1b2p_Bed_1 (2pp)	Fail	Fail	-	-

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 ΔT ≥ 1°K	% Occupied hours ΔT ≥ 1°K	Criterion a check
00_LGF_01_2b4p_Bed_1 (2pp)	3672	303	8.3	Fail
00_LGF_01_2b4p_Bed_2 (2pp)	3672	322	8.8	Fail
00_LGF_01_2b4p_LDK	1989	85	4.3	Fail
00_LGF_02_3b5p_Bed_1 (2pp)	3672	372	10.1	Fail
00_LGF_02_3b5p_Bed_2 (2pp)	3672	312	8.5	Fail
00_LGF_02_3b5p_Bed_3 (1pp)	3672	317	8.6	Fail
00_LGF_02_3b5p_LDK	1989	458	23.0	Fail
00_LGF_03_2b4p_Bed_1 (2pp)	3672	347	9.4	Fail
00_LGF_03_2b4p_Bed_2 (2pp)	3672	441	12.0	Fail
00_LGF_03_2b4p_LDK	1989	339	17.0	Fail
00_LGF_04_1b2p_Bed_1 (2pp)	3672	447	12.2	Fail
00_LGF_04_1b2p_Bed_1 (2pp)	3672	380	10.3	Fail
00_LGF_04_1b2p_LDK	1989	623	31.3	Fail
00_LGF_04_1b2p_LDK	1989	364	18.3	Fail
01_GF_01_1b2p_Bed_1 (2pp)	3672	408	11.1	Fail
01_GF_01_1b2p_LDK	1989	463	23.3	Fail
01_GF_02_1b2p_Bed_1 (2pp)	3672	212	5.8	Fail
01_GF_02_1b2p_LDK	1989	131	6.6	Fail
01_GF_03_1b2p_Bed_1 (2pp)	3672	771	21.0	Fail
01_GF_03_1b2p_LDK	1989	492	24.7	Fail
01_GF_04_2b3p_Bed_2 (1pp)	3672	297	8.1	Fail
01_GF_04_2b3p_Bed_2 (2pp)	3672	283	7.7	Fail
01_GF_04_2b3p_LDK	1989	207	10.4	Fail
01_GF_05_1b1p_Bed_1 (1pp)	3672	646	17.6	Fail
01_GF_05_1b1p_LDK	1989	526	26.4	Fail

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Room name	Occupied hours	No. hours ΔT ≥ 1°K	% Occupied hours ΔT ≥ 1°K	Criterion a check
01_GF_06_1b1p_Bed_1 (1pp)	3672	305	8.3	Fail
01_GF_06_1b1p_LDK	1989	315	15.8	Fail
01_GF_07_1b2p_Bed_1 (2pp)	3672	390	10.6	Fail
01_GF_07_1b2p_LDK	1989	396	19.9	Fail
02_FF_06_1b2p_Bed_1 (2pp)	3672	295	8.0	Fail
02_FF_07_2b4p_Circ	0	0	0	Pass
02_FF_07_2b4p_Bed_2 (2pp)	3672	772	21.0	Fail
02_FF_07_2b4p_St	0	0	0	Pass
02_FF_01_1b2p_Bed_1 (2pp)	3672	201	5.5	Fail
02_FF_01_1b2p_Circ	0	0	0	Pass
02_FF_02_1b2p_Circ	0	0	0	Pass
02_FF_02_1b2p_Bed_1 (2pp)	3672	155	4.2	Fail
02_FF_02_1b2p_LDK	1989	99	5.0	Fail
02_FF_04_2b3p_Bed_2 (1pp)	3672	235	6.4	Fail
02_FF_04_2b3p_Bed_1 (2pp)	3672	206	5.6	Fail
02_FF_04_2b3p_Circ	0	0	0	Pass
02_FF_04_2b3p_LDK	1989	151	7.6	Fail
02_FF_06_1b2p_LDK	1989	188	9.5	Fail
02_FF_06_1b2p_Circ	0	0	0	Pass
02_FF_01_1b2p_LDK	1989	235	11.8	Fail
02_FF_03_1b2p_LDK	1989	284	14.3	Fail
02_FF_03_1b2p_Circ	0	0	0	Pass
02_FF_03_1b2p_Bed_1 (2pp)	3672	499	13.6	Fail
02_FF_05_1b1p_Bed_1 (1pp)	3672	305	8.3	Fail
02_FF_05_2b3p_Circ	0	0	0	Pass
02_FF_05_2b3p_LDK	1989	523	26.3	Fail
02_FF_07_2b4p_Bed_1 (2pp)	3672	507	13.8	Fail
02_FF_07_2b4p_LDK	1989	238	12.0	Fail
03_SF_05_2b3p_Bed_1 (2pp)	3672	230	6.3	Fail
03_SF_05_2b3p_Bed_2 (1pp)	3672	388	10.6	Fail
03_SF_05_2b3p_Circ	0	0	0	Pass

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Room name	Occupied hours	No. hours ΔT ≥ 1°K	% Occupied hours ΔT ≥ 1°K	Criterion a check
03_SF_03_1b2p_Bed_1 (2pp)	3672	225	6.1	Fail
03_SF_03_1b2p_LDK	1989	93	4.7	Fail
03_SF_01_1b2p_LDK	1989	57	2.9	Pass
03_SF_01_1b2p_Bed_1 (2pp)	3672	133	3.6	Fail
03_SF_01_1b2p_Circ	0	0	0	Pass
03_SF_05_2b3p_LDK	1989	132	6.6	Fail
03_SF_04_1b2p_Bed_1 (2pp)	3672	202	5.5	Fail
03_SF_04_1b2p_Circ	0	0	0	Pass
03_SF_02_1b2p_LDK	1989	78	3.9	Fail
03_SF_02_1b2p_Circ	0	0	0	Pass
03_SF_04_1b2p_LDK	1989	129	6.5	Fail
03_SF_02_1b2p_Bed_1 (2pp)	3672	179	4.9	Fail

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_LGF_01_2b4p_Bed_1 (2pp)	100	440	540	Fail
00_LGF_01_2b4p_Bed_2 (2pp)	119	474	593	Fail
00_LGF_01_2b4p_LDK	N/A	N/A	N/A	N/A
00_LGF_02_3b5p_Bed_1 (2pp)	121	492	613	Fail
00_LGF_02_3b5p_Bed_2 (2pp)	134	481	615	Fail
00_LGF_02_3b5p_Bed_3 (1pp)	98	429	527	Fail
00_LGF_02_3b5p_LDK	N/A	N/A	N/A	N/A
00_LGF_03_2b4p_Bed_1 (2pp)	116	493	609	Fail
00_LGF_03_2b4p_Bed_2 (2pp)	121	510	631	Fail
00_LGF_03_2b4p_LDK	N/A	N/A	N/A	N/A
00_LGF_04_1b2p_Bed_1 (2pp)	126	512	638	Fail
00_LGF_04_1b2p_LDK	N/A	N/A	N/A	N/A
01_GF_01_1b2p_Bed_1 (2pp)	109	430	539	Fail
01_GF_01_1b2p_LDK	N/A	N/A	N/A	N/A
01_GF_02_1b2p_Bed_1 (2pp)	89	445	534	Fail
01_GF_02_1b2p_LDK	N/A	N/A	N/A	N/A
01_GF_03_1b2p_Bed_1 (2pp)	149	571	720	Fail
01_GF_03_1b2p_LDK	N/A	N/A	N/A	N/A
01_GF_04_2b3p_Bed_2 (1pp)	76	411	487	Fail
01_GF_04_2b3p_Bed_2 (2pp)	91	475	566	Fail
01_GF_04_2b3p_LDK	N/A	N/A	N/A	N/A
01_GF_05_1b1p_Bed_1 (1pp)	122	471	593	Fail
01_GF_05_1b1p_LDK	N/A	N/A	N/A	N/A
01_GF_06_1b1p_Bed_1 (1pp)	93	460	553	Fail
01_GF_06_1b1p_LDK	N/A	N/A	N/A	N/A

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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
01_GF_07_1b2p_Bed_1 (2pp)	106	487	593	Fail
01_GF_07_1b2p_LDK	N/A	N/A	N/A	N/A
02_FF_06_1b2p_Bed_1 (2pp)	94	466	560	Fail
02_FF_07_2b4p_Circ	N/A	N/A	N/A	N/A
02_FF_07_2b4p_Bed_2 (2pp)	149	564	713	Fail
02_FF_07_2b4p_St	N/A	N/A	N/A	N/A
02_FF_01_1b2p_Bed_1 (2pp)	83	326	409	Fail
02_FF_01_1b2p_Circ	N/A	N/A	N/A	N/A
02_FF_02_1b2p_Circ	N/A	N/A	N/A	N/A
02_FF_02_1b2p_Bed_1 (2pp)	77	395	472	Fail
02_FF_02_1b2p_LDK	N/A	N/A	N/A	N/A
02_FF_04_2b3p_Bed_2 (1pp)	70	346	416	Fail
02_FF_04_2b3p_Bed_1 (2pp)	82	429	511	Fail
02_FF_04_2b3p_Circ	N/A	N/A	N/A	N/A
02_FF_04_2b3p_LDK	N/A	N/A	N/A	N/A
02_FF_06_1b2p_LDK	N/A	N/A	N/A	N/A
02_FF_06_1b2p_Circ	N/A	N/A	N/A	N/A
02_FF_01_1b2p_LDK	N/A	N/A	N/A	N/A
02_FF_03_1b2p_LDK	N/A	N/A	N/A	N/A
02_FF_03_1b2p_Circ	N/A	N/A	N/A	N/A
02_FF_03_1b2p_Bed_1 (2pp)	141	534	675	Fail
02_FF_05_1b1p_Bed_1 (1pp)	96	407	503	Fail
02_FF_05_2b3p_Circ	N/A	N/A	N/A	N/A
02_FF_05_2b3p_LDK	N/A	N/A	N/A	N/A
02_FF_07_2b4p_Bed_1 (2pp)	136	516	652	Fail
02_FF_07_2b4p_LDK	N/A	N/A	N/A	N/A
03_SF_05_2b3p_Bed_1 (2pp)	123	479	602	Fail
03_SF_05_2b3p_Bed_2 (1pp)	122	486	608	Fail
03_SF_05_2b3p_Circ	N/A	N/A	N/A	N/A
03_SF_03_1b2p_Bed_1 (2pp)	132	492	624	Fail
03_SF_03_1b2p_LDK	N/A	N/A	N/A	N/A

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
03_SF_01_1b2p_LDK	N/A	N/A	N/A	N/A
03_SF_01_1b2p_Bed_1 (2pp)	82	379	461	Fail
03_SF_01_1b2p_Circ	N/A	N/A	N/A	N/A
03_SF_05_2b3p_LDK	N/A	N/A	N/A	N/A
03_SF_04_1b2p_Bed_1 (2pp)	108	421	529	Fail
03_SF_04_1b2p_Circ	N/A	N/A	N/A	N/A
03_SF_02_1b2p_LDK	N/A	N/A	N/A	N/A
03_SF_02_1b2p_Circ	N/A	N/A	N/A	N/A
03_SF_04_1b2p_LDK	N/A	N/A	N/A	N/A
03_SF_02_1b2p_Bed_1 (2pp)	110	423	533	Fail

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 m²	Thermal template	Occupancy profile	Equipment profile	Lighting profile
00_LGF_01_2b4p_Bed_1 (2pp)	14.88	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
00_LGF_01_2b4p_Bed_2 (2pp)	18.31	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
00_LGF_01_2b4p_LDK	42.63	TM59 - 2 Bedroom - Living	Living Occupancy	Living Equipment	18-23h
00_LGF_02_3b5p_Bed_1 (2pp)	15.77	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
00_LGF_02_3b5p_Bed_2 (2pp)	15.36	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
00_LGF_02_3b5p_Bed_3 (1pp)	12.5	TM59 - Single Bedroom	Single Bedroom Occupancy	Single Bedroom Equipment	18-23h
00_LGF_02_3b5p_LDK	39.54	TM59 - 3 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
00_LGF_03_2b4p_Bed_1 (2pp)	16.23	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
00_LGF_03_2b4p_Bed_2 (2pp)	13.35	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
00_LGF_03_2b4p_LDK	38.99	TM59 - 2 Bedroom - Living	Living Occupancy	Living Equipment	18-23h
00_LGF_04_1b2p_Bed_1 (2pp)	14.21	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
00_LGF_04_1b2p_Bed_1 (2pp)	14.35	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
00_LGF_04_1b2p_LDK	26.23	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
00_LGF_04_1b2p_LDK	29.76	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
01_GF_01_1b2p_Bed_1 (2pp)	15.74	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
01_GF_01_1b2p_LDK	26.13	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
01_GF_02_1b2p_Bed_1 (2pp)	14.77	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h

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Room name	Floor area m²	Thermal template	Occupancy profile	Equipment profile	Lighting profile
01_GF_02_1b2p_LDK	26.65	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
01_GF_03_1b2p_Bed_1 (2pp)	12.29	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
01_GF_03_1b2p_LDK	23.94	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
01_GF_04_2b3p_Bed_2 (1pp)	9.18	TM59 - Single Bedroom	Single Bedroom Occupancy	Single Bedroom Equipment	18-23h
01_GF_04_2b3p_Bed_2 (2pp)	13.68	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
01_GF_04_2b3p_LDK	28.49	TM59 - 2 Bedroom - Living	Living Occupancy	Living Equipment	18-23h
01_GF_05_1b1p_Bed_1 (1pp)	12.29	TM59 - Single Bedroom	Single Bedroom Occupancy	Single Bedroom Equipment	18-23h
01_GF_05_1b1p_LDK	17.8	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
01_GF_06_1b1p_Bed_1 (1pp)	14.71	TM59 - Single Bedroom	Single Bedroom Occupancy	Single Bedroom Equipment	18-23h
01_GF_06_1b1p_LDK	19.94	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
01_GF_07_1b2p_Bed_1 (2pp)	13.23	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
01_GF_07_1b2p_LDK	25.37	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
02_FF_06_1b2p_Bed_1 (2pp)	13.91	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
02_FF_07_2b4p_Circ	7.57	TM59 - Circulation - in flats			18-23h
02_FF_07_2b4p_Bed_2 (2pp)	12.36	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
02_FF_07_2b4p_St	1.19	TM59 - Cupboards with HIU		on continuously	
02_FF_01_1b2p_Bed_1 (2pp)	16.28	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
02_FF_01_1b2p_Circ	4.95	TM59 - Circulation - in flats			18-23h
02_FF_02_1b2p_Circ	5.29	TM59 - Circulation - in flats			18-23h
02_FF_02_1b2p_Bed_1 (2pp)	14.76	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h

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Room name	Floor area m²	Thermal template	Occupancy profile	Equipment profile	Lighting profile
02_FF_02_1b2p_LDK	26.65	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
02_FF_04_2b3p_Bed_2 (1pp)	9.18	TM59 - Single Bedroom	Single Bedroom Occupancy	Single Bedroom Equipment	18-23h
02_FF_04_2b3p_Bed_1 (2pp)	13.68	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
02_FF_04_2b3p_Circ	5.54	TM59 - Circulation - in flats			18-23h
02_FF_04_2b3p_LDK	28.49	TM59 - 2 Bedroom - Living	Living Occupancy	Living Equipment	18-23h
02_FF_06_1b2p_LDK	30.16	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
02_FF_06_1b2p_Circ	4.99	TM59 - Circulation - in flats			18-23h
02_FF_01_1b2p_LDK	26.13	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
02_FF_03_1b2p_LDK	28.02	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
02_FF_03_1b2p_Circ	7.43	TM59 - Circulation - in flats			18-23h
02_FF_03_1b2p_Bed_1 (2pp)	12.29	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
02_FF_05_1b1p_Bed_1 (1pp)	14.48	TM59 - Single Bedroom	Single Bedroom Occupancy	Single Bedroom Equipment	18-23h
02_FF_05_2b3p_Circ	5.31	TM59 - Circulation - in flats			18-23h
02_FF_05_2b3p_LDK	22.04	TM59 - 2 Bedroom - Living	Living Occupancy	Living Equipment	18-23h
02_FF_07_2b4p_Bed_1 (2pp)	14.96	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
02_FF_07_2b4p_LDK	29.13	TM59 - 2 Bedroom - Living	Living Occupancy	Living Equipment	18-23h
03_SF_05_2b3p_Bed_1 (2pp)	13.34	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
03_SF_05_2b3p_Bed_2 (1pp)	8.46	TM59 - Single Bedroom	Single Bedroom Occupancy	Single Bedroom Equipment	18-23h
03_SF_05_2b3p_Circ	5.84	TM59 - Circulation - in flats			18-23h
03_SF_03_1b2p_Bed_1 (2pp)	13.21	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
03_SF_03_1b2p_LDK	26.86	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h

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Room name	Floor area m²	Thermal template	Occupancy profile	Equipment profile	Lighting profile
03_SF_01_1b2p_LDK	26.64	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
03_SF_01_1b2p_Bed_1 (2pp)	15.5	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
03_SF_01_1b2p_Circ	4.31	TM59 - Circulation - in flats			18-23h
03_SF_05_2b3p_LDK	27.23	TM59 - 2 Bedroom - Living	Living Occupancy	Living Equipment	18-23h
03_SF_04_1b2p_Bed_1 (2pp)	13.57	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h
03_SF_04_1b2p_Circ	3.23	TM59 - Circulation - in flats			18-23h
03_SF_02_1b2p_LDK	25.11	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
03_SF_02_1b2p_Circ	5.38	TM59 - Circulation - in flats			18-23h
03_SF_04_1b2p_LDK	29.68	TM59 - 1 Bedroom - Living / Kitchen	Living / Kitchen Occupancy	Living / Kitchen Equipment	18-23h
03_SF_02_1b2p_Bed_1 (2pp)	13.45	TM59 - Double Bedroom	Double Bedroom Occupancy	Double Bedroom Equipment	18-23h

Modelled openings

Room name	Window to wall ratio %	Window g-value (EN 410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
00_LGF_01_2b4p_Bed_1 (2pp)	10.01	0.4202	2.41	9.899999618530273	1.6	ADO.Section_26a
00_LGF_01_2b4p_Bed_2 (2pp)	26.41	0.4202	2.41	9.899999618530273	1.3	ADO.Section_26a
00_LGF_01_2b4p_LDK	9.46	0.4202	2.3, 1.4, 2.25, 1.85	20.0, 14.800000190734863, 7.300000190734863, 20.0	2.82	ADO.AlwaysOff, ADO.Section_26c, ADO.Section_26a
00_LGF_02_3b5p_Bed_1 (2pp)	26.39	0.4202	2.42	9.899999618530273	1.52	ADO.Section_26a
00_LGF_02_3b5p_Bed_2 (2pp)	20.37	0.4202	1.39	14.800000190734863	1.34	ADO.Section_26a
00_LGF_02_3b5p_Bed_3 (1pp)	20.11	0.4202	2.41	9.899999618530273	1.91	ADO.Section_26a
00_LGF_02_3b5p_LDK	25.54	0.4202	2.3, 2.26, 2.51	20.0, 20.0, 7.300000190734863	2.77	ADO.AlwaysOff, ADO.Section_26c
00_LGF_03_2b4p_Bed_1 (2pp)	25.36	0.4202	2.42	9.899999618530273	1.48	ADO.Section_26a
00_LGF_03_2b4p_Bed_2 (2pp)	25.58	0.4202	2.42	9.899999618530273	1.79	ADO.Section_26a
00_LGF_03_2b4p_LDK	23.13	0.4202	2.3, 2.26, 1.83	20.0, 7.300000190734863, 20.0	2.54	ADO.AlwaysOff, ADO.Section_26c
00_LGF_04_1b2p_Bed_1 (2pp)	15.39	0.4202	1.39	14.800000190734863	1.45	ADO.Section_26a
00_LGF_04_1b2p_Bed_1 (2pp)	26.25	0.4202	2.41	9.899999618530273	1.66	ADO.Section_26a
00_LGF_04_1b2p_LDK	14.58	0.4202, 0.4202	0.9, 0.9, 2.26, 2.51	20.0, 20.0, 20.0, 7.300000190734863	3.79	ADO.AlwaysOff, ADO.Section_26c
00_LGF_04_1b2p_LDK	40.14	0.4202	2.26, 2.51	20.0, 7.300000190734863	2.13	ADO.AlwaysOff, ADO.Section_26c
01_GF_01_1b2p_Bed_1 (2pp)	13.01	0.4202	1.5, 1.84	20.0, 11.600000381469727	3.26	ADO.AlwaysOff, ADO.Section_26a
01_GF_01_1b2p_LDK	43.92	0.4202	1.5, 1.84, 1.5, 1.84	20.0, 11.600000381469727, 20.0, 11.600000381469727	3.93	ADO.AlwaysOff, ADO.Section_26c

Room name	Window to wall ratio %	Window g-value (EN 410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
01_GF_02_1b2p_Bed_1 (2pp)	21.42	0.4202	1.23, 1.23	17.29999923706054 7, 17.2999992370605 47	2.88	ADO.Section_26a
01_GF_02_1b2p_LDK	24.71	0.4202	1.23, 1.23, 1.25, 0.58, 1.25, 0.58	17.29999923706054 7, 17.2999992370605 47, 17.29999923706054 7, 20.0, 17.29999923706054 7, 20.0	4.09	ADO.AlwaysOff, ADO.Section_26c
01_GF_03_1b2p_Bed_1 (2pp)	33.66	0.4202	1.5, 1.84	20.0, 11.600000381469727	4.18	ADO.AlwaysOff, ADO.Section_26a
01_GF_03_1b2p_LDK	20.66	0.4202	1.5, 1.84	20.0, 11.600000381469727	2.14	ADO.AlwaysOff, ADO.Section_26c
01_GF_04_2b3p_Bed_2 (1pp)	33.84	0.4202	1.23, 1.23	17.29999923706054 7, 17.2999992370605 47	4.64	ADO.Section_26a
01_GF_04_2b3p_Bed_2 (2pp)	22.66	0.4202	1.23, 1.23	17.29999923706054 7, 17.2999992370605 47	3.11	ADO.Section_26a
01_GF_04_2b3p_LDK	42.38	0.4202	1.23, 1.23, 1.25, 0.58, 1.25, 0.58	17.29999923706054 7, 17.2999992370605 47, 17.29999923706054 7, 20.0, 17.29999923706054 7, 20.0	3.83	ADO.AlwaysOff, ADO.Section_26c
01_GF_05_1b1p_Bed_1 (1pp)	31.51	0.4202	1.5, 1.84	20.0, 11.600000381469727	4.18	ADO.AlwaysOff, ADO.Section_26a
01_GF_05_1b1p_LDK	41.86	0.4202	1.5, 1.84, 1.5, 1.84	20.0, 11.600000381469727, 20.0, 11.600000381469727	5.77	ADO.AlwaysOff, ADO.Section_26c
01_GF_06_1b1p_Bed_1 (1pp)	32.8	0.4202	1.23, 1.23	17.29999923706054 7, 17.2999992370605 47	2.89	ADO.Section_26a
01_GF_06_1b1p_LDK	42.1	0.4202	1.25, 0.58, 1.25, 0.58	17.29999923706054 7, 20.0, 17.29999923706054 7, 20.0	3.33	ADO.AlwaysOff, ADO.Section_26c

Room name	Window to wall ratio %	Window g-value (EN 410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
01_GF_07_1b2p_Bed_1 (2pp)	27.15	0.4202	1.23, 1.23	17.299999237060547, 17.2999992370605 47	3.22	ADO.Section_26a
01_GF_07_1b2p_LDK	15.04	0.4202, 0.4202	0.9, 0.9, 1.25, 0.58, 1.25, 0.58	20.0, 20.0, 17.29999923706 0547, 20.0, 17.29999923706 0547, 20.0	4.04	ADO.AlwaysOff, ADO.Section_26c
02_FF_06_1b2p_Bed_1 (2pp)	31.18	0.4202	1.23, 1.23	17.299999237060547, 17.2999992370605 47	3.06	ADO.Section_26a
02_FF_07_2b4p_Circ	N/A				0.0	
02_FF_07_2b4p_Bed_2 (2pp)	25.61	0.4202	0.87, 0.58, 0.87, 0.58	11.600000381469727, 20.0, 11.600000381469727, 20.0	3.51	ADO.AlwaysOff, ADO.Section_26a
02_FF_07_2b4p_St	N/A				0.0	
02_FF_01_1b2p_Bed_1 (2pp)	22.45	0.4202	0.87, 0.58, 0.87, 0.58, 0.87, 0.58, 0.87, 0.58	11.600000381469727, 20.0, 11.600000381469727, 20.0, 11.600000381469727, 20.0, 11.600000381469727, 20.0	5.33	ADO.AlwaysOff, ADO.Section_26a
02_FF_01_1b2p_Circ	N/A				0.0	
02_FF_02_1b2p_Circ	N/A				0.0	
02_FF_02_1b2p_Bed_1 (2pp)	21.42	0.4202	1.23, 1.23	17.299999237060547, 17.2999992370605 47	2.88	ADO.Section_26a
02_FF_02_1b2p_LDK	24.71	0.4202, 0.4202	1.25, 0.58, 1.25, 0.58, 1.23, 1.23	17.299999237060547, 20.0, 17.299999237060547, 20.0, 17.299999237060547, 17.2999992370605 47	4.09	ADO.AlwaysOff, ADO.Section_26c
02_FF_04_2b3p_Bed_2 (1pp)	33.84	0.4202	1.23, 1.23	17.299999237060547, 17.2999992370605 47	4.64	ADO.Section_26a

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Room name	Window to wall ratio %	Window g-value (EN 410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
02_FF_04_2b3p_Bed_1 (2pp)	22.66	0.4202	1.23, 1.23	17.29999923706054 7, 17.2999992370605 47	3.11	ADO.Section_26a
02_FF_04_2b3p_Circ	N/A				0.0	
02_FF_04_2b3p_LDK	42.38	0.4202	1.25, 0.58, 1.25, 0.58, 1.23, 1.23	17.29999923706054 7, 20.0, 17.2999992370605 47, 20.0, 17.2999992370605 47, 17.2999992370605 47	3.83	ADO.AlwaysOff, ADO.Section_26c
02_FF_06_1b2p_LDK	42.69	0.4202	1.25, 0.58, 1.25, 0.58, 1.23, 1.23	17.29999923706054 7, 20.0, 17.2999992370605 47, 20.0, 17.2999992370605 47, 17.2999992370605 47	3.61	ADO.AlwaysOff, ADO.Section_26c
02_FF_06_1b2p_Circ	N/A				0.0	
02_FF_01_1b2p_LDK	38.05	0.4202	0.87, 0.58, 0.87, 0.58, 0.87, 0.58, 0.87, 0.58	11.60000038146972 7, 20.0, 11.6000000381469727, 20.0, 11.6000000381469727, 20.0, 11.6000000381469727, 20.0	3.32	ADO.AlwaysOff, ADO.Section_26a
02_FF_03_1b2p_LDK	25.31	0.4202	0.87, 0.58, 0.87, 0.58, 0.87, 0.58, 0.87, 0.58	11.60000038146972 7, 20.0, 11.6000000381469727, 20.0, 11.6000000381469727, 20.0, 11.6000000381469727, 20.0	3.1	ADO.AlwaysOff, ADO.Section_26a
02_FF_03_1b2p_Circ	N/A				0.0	
02_FF_03_1b2p_Bed_1 (2pp)	32.05	0.4202	0.87, 0.58, 0.87, 0.58	11.60000038146972 7, 20.0, 11.6000000381469727, 20.0	3.53	ADO.AlwaysOff, ADO.Section_26a

Queensmere House

Room name	Window to wall ratio %	Window g-value (EN 410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
02_FF_05_1b1p_Bed_1 (1pp)	41.55	0.4202	0.87, 0.58, 0.87, 0.58, 0.87, 0.58, 0.87, 0.58	11.600000381469727, 20.0, 11.600000381469727, 20.0, 11.600000381469727, 20.0, 11.600000381469727, 20.0	5.99	ADO.AlwaysOff, ADO.Section_26a
02_FF_05_2b3p_Circ	N/A				0.0	
02_FF_05_2b3p_LDK	18.55	0.4202	0.87, 0.58, 0.87, 0.58	11.600000381469727, 20.0, 11.600000381469727, 20.0	1.97	ADO.AlwaysOff, ADO.Section_26a
02_FF_07_2b4p_Bed_1 (2pp)	11.4	0.4202	0.87, 0.58, 0.87, 0.58	11.600000381469727, 20.0, 11.600000381469727, 20.0	2.9	ADO.AlwaysOff, ADO.Section_26a
02_FF_07_2b4p_LDK	9.98	0.4202	1.25, 0.58, 1.25, 0.58	17.299999237060547, 20.0, 17.299999237060547, 20.0	2.28	ADO.AlwaysOff, ADO.Section_26c
03_SF_05_2b3p_Bed_1 (2pp)	12.38	0.4202	0.9, 0.9	11.600000381469727, 11.600000038146972 7	1.57	ADO.Section_26a
03_SF_05_2b3p_Bed_2 (1pp)	46.89	0.4202	0.9, 0.9	11.600000381469727, 11.600000038146972 7	2.47	ADO.Section_26a
03_SF_05_2b3p_Circ	N/A				0.0	
03_SF_03_1b2p_Bed_1 (2pp)	26.56	0.4202	0.9, 0.9	11.600000381469727, 11.600000038146972 7	1.58	ADO.Section_26a
03_SF_03_1b2p_LDK	39.62	0.4202	0.9, 0.9, 0.9, 0.9, 0.9, 0.9	11.600000381469727, 11.600000038146972 7, 11.600000038146972 7, 11.600000038146972 7, 11.600000038146972 7, 11.600000038146972 7	2.33	ADO.Section_26c

Queensmere House

Room name	Window to wall ratio %	Window g-value (EN 410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
03_SF_01_1b2p_LDK	23.31	0.4202	0.9, 0.9, 0.9, 0.9, 0.9, 0.9	11.600000381469727, 11.6000003814697, 11.6000003814697, 11.6000003814697, 11.6000003814697, 11.6000003814697	2.35	ADO.Section_26c
03_SF_01_1b2p_Bed_1 (2pp)	40.07	0.4202	0.9, 0.9, 0.9, 0.9	11.600000381469727, 11.6000003814697, 11.6000003814697, 11.6000003814697	2.69	ADO.Section_26a
03_SF_01_1b2p_Circ	N/A				0.0	
03_SF_05_2b3p_LDK	21.59	0.4202	0.9, 0.9, 0.9, 0.9	11.600000381469727, 11.6000003814697, 11.6000003814697, 11.6000003814697	1.53	ADO.Section_26c
03_SF_04_1b2p_Bed_1 (2pp)	33.24	0.4202	0.9, 0.9	11.600000381469727, 11.6000003814697	1.54	ADO.Section_26a
03_SF_04_1b2p_Circ	N/A				0.0	
03_SF_02_1b2p_LDK	33.6	0.4202	0.9, 0.9, 0.9, 0.9	11.600000381469727, 11.6000003814697, 11.6000003814697, 11.6000003814697	1.66	ADO.Section_26c
03_SF_02_1b2p_Circ	N/A				0.0	

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Room name	Window to wall ratio %	Window g-value (EN 410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
03_SF_04_1b2p_LDK	42.15	0.4202	0.9, 0.9, 0.9, 0.9, 0.9, 0.9, 0.9, 0.9	11.600000381469727, 11.6000003814697 27, 11.600000381469727, 11.6000003814697 27, 11.600000381469727, 11.6000003814697 27, 11.600000381469727, 11.6000003814697 27, 11.600000381469727, 11.6000003814697 27, 11.600000381469727, 11.6000003814697 27, 11.600000381469727, 11.6000003814697 27	2.81	ADO.Section_26c
03_SF_02_1b2p_Bed_1 (2pp)	31.72	0.4202	0.9, 0.9	11.600000381469727, 11.6000003814697 27	1.55	ADO.Section_26a

Modelled ventilation

Room name	Infiltration rate ACH	Mech vent flow rate ACH
00_LGF_01_2b4p_Bed_1 (2pp)	0.25	0
00_LGF_01_2b4p_Bed_2 (2pp)	0.25	0
00_LGF_01_2b4p_LDK	0.25	0
00_LGF_02_3b5p_Bed_1 (2pp)	0.25	0
00_LGF_02_3b5p_Bed_2 (2pp)	0.25	0
00_LGF_02_3b5p_Bed_3 (1pp)	0.25	0
00_LGF_02_3b5p_LDK	0.25	0
00_LGF_03_2b4p_Bed_1 (2pp)	0.25	0
00_LGF_03_2b4p_Bed_2 (2pp)	0.25	0
00_LGF_03_2b4p_LDK	0.25	0
00_LGF_04_1b2p_Bed_1 (2pp)	0.25	0
00_LGF_04_1b2p_Bed_1 (2pp)	0.25	0
00_LGF_04_1b2p_LDK	0.25	0
00_LGF_04_1b2p_LDK	0.25	0
01_GF_01_1b2p_Bed_1 (2pp)	0.25	0
01_GF_01_1b2p_LDK	0.25	0
01_GF_02_1b2p_Bed_1 (2pp)	0.25	0
01_GF_02_1b2p_LDK	0.25	0
01_GF_03_1b2p_Bed_1 (2pp)	0.25	0
01_GF_03_1b2p_LDK	0.25	0
01_GF_04_2b3p_Bed_2 (1pp)	0.25	0
01_GF_04_2b3p_Bed_2 (2pp)	0.25	0
01_GF_04_2b3p_LDK	0.25	0
01_GF_05_1b1p_Bed_1 (1pp)	0.25	0
01_GF_05_1b1p_LDK	0.25	0
01_GF_06_1b1p_Bed_1 (1pp)	0.25	0
01_GF_06_1b1p_LDK	0.25	0
01_GF_07_1b2p_Bed_1 (2pp)	0.25	0
01_GF_07_1b2p_LDK	0.25	0
02_FF_06_1b2p_Bed_1 (2pp)	0.25	0
02_FF_07_2b4p_Circ	0.25	0
02_FF_07_2b4p_Bed_2 (2pp)	0.25	0
02_FF_07_2b4p_St	0.25	0
02_FF_01_1b2p_Bed_1 (2pp)	0.25	0
02_FF_01_1b2p_Circ	0.25	0
02_FF_02_1b2p_Circ	0.25	0
02_FF_02_1b2p_Bed_1 (2pp)	0.25	0
02_FF_02_1b2p_LDK	0.25	0
02_FF_04_2b3p_Bed_2 (1pp)	0.25	0
02_FF_04_2b3p_Bed_1 (2pp)	0.25	0

Queensmere House

Room name	Infiltration rate ACH	Mech vent flow rate ACH
02_FF_04_2b3p_Circ	0.25	0
02_FF_04_2b3p_LDK	0.25	0
02_FF_06_1b2p_LDK	0.25	0
02_FF_06_1b2p_Circ	0.25	0
02_FF_01_1b2p_LDK	0.25	0
02_FF_03_1b2p_LDK	0.25	0
02_FF_03_1b2p_Circ	0.25	0
02_FF_03_1b2p_Bed_1 (2pp)	0.25	0
02_FF_05_1b1p_Bed_1 (1pp)	0.25	0
02_FF_05_2b3p_Circ	0.25	0
02_FF_05_2b3p_LDK	0.25	0
02_FF_07_2b4p_Bed_1 (2pp)	0.25	0
02_FF_07_2b4p_LDK	0.25	0
03_SF_05_2b3p_Bed_1 (2pp)	0.25	0
03_SF_05_2b3p_Bed_2 (1pp)	0.25	0
03_SF_05_2b3p_Circ	0.25	0
03_SF_03_1b2p_Bed_1 (2pp)	0.25	0
03_SF_03_1b2p_LDK	0.25	0
03_SF_01_1b2p_LDK	0.25	0
03_SF_01_1b2p_Bed_1 (2pp)	0.25	0
03_SF_01_1b2p_Circ	0.25	0
03_SF_05_2b3p_LDK	0.25	0
03_SF_04_1b2p_Bed_1 (2pp)	0.25	0
03_SF_04_1b2p_Circ	0.25	0
03_SF_02_1b2p_LDK	0.25	0
03_SF_02_1b2p_Circ	0.25	0
03_SF_04_1b2p_LDK	0.25	0
03_SF_02_1b2p_Bed_1 (2pp)	0.25	0

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