



THERMAL COMFORT MODELLING REPORT

**Proposed Care Home,
Cophorne**

1647-REP-001
REVISION P01
25/11/2025

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1.0 Introduction

This report has been prepared to detail the thermal modelling undertaken on the proposed care home development at Copthorne for Care UK.

The report has been prepared with the aim of evaluating the risk of overheating of the proposed design, including services and fabric/window proposals, and demonstrating compliance with TM52, TM59 (bedrooms only) and Part O of the Building Regulations.

Thermal modelling has been undertaken using EDSL Tas software, with the analysis carried out in accordance with CIBSE AM11 Building Performance Modelling 2015 to validate compliance.

The modelling and calculations have been produced based upon the parameters and assumptions detailed within this report.

2.0 Description of the Development

The development consists of a residential care home building totalling 79No. beds, plus communal facilities such as dining, circulation, assisted bathing, etc., as well as support and facilities accommodation such as offices, centralised laundry and kitchen, staff and plant areas.

The assessment has been based on the architectural information current at the time of writing.

3.0 Modelling Methodology

Using the above information, a fully detailed model was produced in EDSL Tas version 9.5.6. The model was created by a fully qualified Low Carbon Consultant (LCC) and Level 5 Low Carbon Energy Assessor (LCEA), accredited via the software provider and CIBSE. The assessor is a Chartered Engineer, with 25 years experience in building services design and is not professionally connected to any low or zero carbon technology or manufacturer.

Assessments were undertaken to assess the building for thermal comfort in line with the guidance and methodology detailed in CIBSE TM52:2013 as required by BREAM guidance relating to credit .

TM52 2013

The main purpose of the CIBSE TM52 overheating assessment methodology is to ensure thermal comfort analysis within residential and non-residential buildings. The analysis is carried out for every occupied zone within the building to test if the room temperature is within a comfortable range or if it is overheating. Analysis looks at the occupancy period (on an hourly basis) during the summer period.

There are three criteria for TM52 overheating analysis. Each occupied zone must pass at least two of the three criteria. The room's operative and maximum temperature plays an important role in overheating analysis.

1. The number of hours where the internal operative temperature is above the maximum acceptable temperature.
2. The daily weighted exceedance
3. The maximum operative temperature.

TM59 2017 (Bedrooms)

The CIBSE TM59 overheating assessment methodology is aimed specifically at residential buildings, and as such has been applied to all bedrooms within the development.

The overheating criteria establishes the amount of time that a room is assessed to exceed an established maximum comfort temperature. The maximum comfort temperature is determined using an equation taking account of the weighted running mean of outside air temperatures.

The TM59 code also requires the internal temperature of bedrooms to not exceed 26°C for more than 1% of the annual hours during the time period 22.00-07.00.

4.0 Building Fabric and Services Input Parameters

4.1 Building Fabric

The following u-values have been assumed as part of this assessment, as advised by the main contractor and design team in line with the Part L assessment for the building:

Element	Proposed Value (W/m².K)
External Walls	0.22
Floors	0.15
Roofs	0.13
Windows	1.4 (0.4 g value)
Doors	1.4 (0.4 g value)

External windows and doors have been modelled to represent the information and opening sections as detailed on the elevations. Windows have been modelled with the assumption that 100mm restrictors will be fitted throughout. External doors to resident bedroom and day space areas have also assumed can be opened and utilised during the daytime for natural ventilation where required.

4.2 Building Services

Internal design temperatures and servicing strategy have been assumed in line with the project specification.

Ventilation shall be provided locally via ceiling mounted/local extract fans to all ensembles, bathrooms, sluices, WCs etc., generally as detailed within the project specification.

Where areas are landlocked, they shall be provided with heat recovery ventilation (i.e. nurse stations).

Cooling has been modelled in line with the project specification and design drawings, including::

- Lounges
- Dining Rooms
- Cinema
- Café
- Hobby Rooms
- Kitchen
- Laundry
- Medical Stores

5.0 Thermal Comfort

5.1 Compliance Requirements

Compliance was assessed in accordance with CIBSE TM52:2013, which requires compliance with two of the three following criteria:

Criteria 1 - Hours of Exceedance (H_e):

The number of hours (H_e) during which ΔT is greater than or equal to one degree (K) during the period May to September inclusive shall not be more than 3 per cent of occupied hours.

Criteria 2 – Daily Weighted Exceedance (W_e):

To allow for the severity of overheating the weighted Exceedance (W_e) shall be less than or equal to 6 in any one day.

$$\text{Where } W_e = (\sum h_e) \times WF = (h_{e0} \times 0) + (h_{e1} \times 1) + (h_{e2} \times 2) + (h_{e3} \times 3)$$

Where the weighting factor $WF = 0$ if $LIT \leq 0$, otherwise $WF = LIT$, and h_{ey} = time in hours when $WF=y$

The value of 6 is an initial assessment of what constitutes an acceptable limit of overheating on any single day.

Criteria 3 - Upper Limit Temperature (T_{upp}):

To set an absolute maximum value for the indoor operative temperature the value of LIT shall not exceed 4K.

The results of this assessment are provided and discussed later in this report.

5.2 Weather Data

The NCM London DSY weather file has been utilised for this analysis, as this was deemed the closest and most appropriate file for this location for the purposes of this assessment.

5.3 Internal Conditions

Where appropriate NCM room type/conditions have been utilised to form the basis of the internal conditions modelled, modified as appropriate to represent the building and use and in alignment with the heat gains etc. dictated under TM59.

Lighting installed power densities have been adjusted to represent the proposed design, as have ventilation rates and heating and cooling (where applicable) set points in line with the strategy detailed above.

5.4 Apertures

Openings are a key function in a naturally ventilated building in order to prevent or minimise overheating. The following aperture details have been assumed:

- Opening parameters have been modelled in line with TM59 guidance.
- External windows have been modelled to represent the information and opening sections as detailed on the elevations, with the assumption that 100mm restrictors will be fitted throughout. Given that the building will be 24 hour managed via care staff, it is assumed that Building Control will be satisfied with the restrictors providing adequate means of securing the ground floor rooms to facilitate the use of windows during the nighttime period if required (note, all restrictors will be permanently fixed and anti-tamper).

- External doors to bedrooms and day spaces have been modelled to represent the information and opening sections as detailed on the elevations, with the assumption that these can be used for ventilation during the daytime period as required where spaces are not cooled.
- Internal cross corridor doors, and the doors to areas such as the dining rooms and communal lounge areas have been modelled as open during the peak summer months as part of the thermal comfort analysis. Where there is a secure line to be maintained, i.e. to staff areas, to staircases, either side of the reception area, etc. these corridor doors have been modelled as closed.
- Doors to secure rooms such as the staff room, nurse, managers and admin offices were assumed to be open when occupied as part of the thermal comfort model, this needs to be managed to maintain security when not occupied.

5.5 TM52/TM59 Categorisation

Given the facility provides an element of residential care, the whole of the development has been assessed under a Category I assessment (which is the most onerous).

5.6 Limitations of the assessment

The thermal comfort analysis has been carried out using EDSL Tas version 9.4.6 in accordance with CIBSE AM11. The parameters and assumptions used in this calculation are deemed to be accurately represent the building to the best of our knowledge and our experience of similar care home buildings.

Although every effort has been made to simulate the building on anticipated heat gain values and occupancy profiles, the 'real' building may have differing operations and heat gain patterns with external weather conditions not normal to the historical data provided by the standard CIBSE weather files. It therefore should be noted that there is no guarantee that the thermal comfort assessment will match the occupied building. The building will also need to be managed to ensure that windows are opened to mitigate the impacts of overheating and to avoid overheating complaints when temperatures rise within the parameters that they are permitted to do so in line with the ventilation approach and stated guidance.

5.7 Commentary on analysis and findings

The TM52 and TM59 results are provided in Appendices A and B respectively.

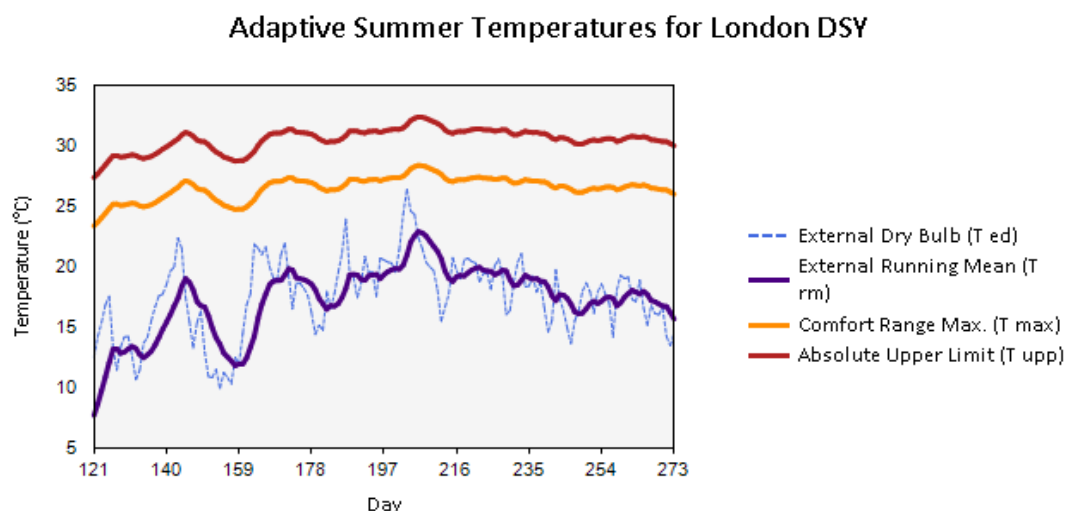
Using the constructions and servicing noted, which represents the building as proposed, all appropriate areas achieve compliance with both CIBSE TM52 and TM59, and therefore Part O requirements on this basis.

It is important to note, the design summer year is a design tool established from a series of peak years, and may not represent average conditions. Using average weather data such as the TRY the results under typical operation and conditions would be significantly better.

It should be highlighted that to promote comfortable conditions in all scenarios the residents and staff of the building will need to actively support the building by ensuring windows, internal doors etc. are opened at a reasonable juncture. As with naturally ventilated buildings, where mechanical ventilation is provided to mitigate overheating it is important for the building users and resident's expectations to be managed, and for them to understand that even though the building complies with recognised comfort criteria, there will be times where temperatures are exceeded as a result of outside weather factors. This assessment has been based on the assumption that windows will be closed and demonstrates compliance using the mechanical ventilation only, however the residents and staff will have flexibility to open windows to further aid comfort and mitigate the space conditions as they so wish.

It is also important to note that there are a significant number of cooled day spaces (lounges, dining rooms etc.) which can be used if the temperatures in uncooled areas are uncomfortable at peak times.

Appendix A - Adaptive Overheating Report Results (TM52)



The adaptive overheating assessment tests rooms against three criteria. If a room fails any two of the three criteria then it is said to overheat.

1. The first criterion sets a limit for the number of hours that the operative temperature exceeds the comfort temperature by 1°C or more during the occupied hours over the summer period (1st May to 30th September).
2. The second criterion deals with the severity of the overheating within any one day. This sets a daily limit for acceptability.
3. The third criterion sets an absolute maximum daily temperature for the room.

Project Details

Building Designer File (.tbd): Copthorne TC.tbd
Simulation Results File (.tsd): Copthorne TC.tsd
Date: 25 November 2025
Building Category: Category I
Report Criteria: TM52

Zone Name	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: #Hours Exceeding Absolute Limit	Result
Comms	1224	36	0	0.0	0	Pass
Ensuite 1	306	9	1	1.0	0	Pass
Ensuite 2	306	9	4	2.0	0	Pass
Ensuite 3	306	9	1	1.0	0	Pass
Ensuite 4	306	9	2	1.0	0	Pass
Ensuite 5	306	9	1	1.0	0	Pass
Ensuite 6	306	9	1	1.0	0	Pass
Ensuite 7	306	9	0	0.0	0	Pass
Ensuite 8	306	9	2	1.0	0	Pass
Ensuite 9	306	9	4	2.0	0	Pass
Ensuite 10	306	9	2	2.0	0	Pass

Zone Name	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: #Hours Exceeding Absolute Limit	Result
Ensuite 11	306	9	4	2.0	0	Pass
Ensuite 12	306	9	0	0.0	0	Pass
Ensuite 14	306	9	3	2.0	0	Pass
Ensuite 15	306	9	1	1.0	0	Pass
Ensuite 16	306	9	4	2.0	0	Pass
Ensuite 17	306	9	1	1.0	0	Pass
Ensuite 18	306	9	4	2.0	0	Pass
Ensuite 19	306	9	1	1.0	0	Pass
Ensuite 20	306	9	4	2.0	0	Pass
Ensuite 21	306	9	3	2.0	0	Pass
Ensuite 22	306	9	1	1.0	0	Pass
Ensuite 23	306	9	4	2.0	0	Pass
Ensuite 24	306	9	1	1.0	0	Pass
Ensuite 25	306	9	4	2.0	0	Pass
Ensuite 26	306	9	1	1.0	0	Pass
Ensuite 27	306	9	8	2.0	0	Pass
Ensuite 28	306	9	1	1.0	0	Pass
Ensuite 29	306	9	8	2.0	0	Pass
Ensuite 30	306	9	1	1.0	0	Pass
Ensuite 31	306	9	3	2.0	0	Pass
Ensuite 32	306	9	1	1.0	0	Pass
Ensuite 33	306	9	2	1.0	0	Pass
Ensuite 34	306	9	2	2.0	0	Pass
Ensuite 35	306	9	5	2.0	0	Pass
Ensuite 36	306	9	4	2.0	0	Pass
Ensuite 37	306	9	1	1.0	0	Pass
Ensuite 38	306	9	1	1.0	0	Pass
Ensuite 39	306	9	4	2.0	0	Pass
Ensuite 40	306	9	4	2.0	0	Pass
Ensuite 41	306	9	3	2.0	0	Pass
Ensuite 42	306	9	10	3.0	0	Pass
Ensuite 43	306	9	4	2.0	0	Pass
Ensuite 44	306	9	8	3.0	0	Pass
Ensuite 45	306	9	3	2.0	0	Pass
Ensuite 46	306	9	8	2.0	0	Pass
Ensuite 47	306	9	2	1.0	0	Pass
Ensuite 48	306	9	8	2.0	0	Pass
Ensuite 49	306	9	1	1.0	0	Pass
Ensuite 50	306	9	7	2.0	0	Pass
Ensuite 51	306	9	3	2.0	0	Pass
Ensuite 52	306	9	4	2.0	0	Pass
Ensuite 53	306	9	4	2.0	0	Pass
Ensuite 54	306	9	2	1.0	0	Pass

Zone Name	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: #Hours Exceeding Absolute Limit	Result
Ensuite 55	306	9	3	2.0	0	Pass
Ensuite 56	306	9	3	2.0	0	Pass
Ensuite 57	306	9	4	2.0	0	Pass
Ensuite 58	306	9	5	2.0	0	Pass
Ensuite 59	306	9	5	2.0	0	Pass
Ensuite 60	306	9	9	3.0	0	Pass
Ensuite 61	306	9	4	2.0	0	Pass
Ensuite 62	306	9	3	2.0	0	Pass
Ensuite 63	306	9	4	2.0	0	Pass
Ensuite 64	306	9	5	2.0	0	Pass
Ensuite 65	306	9	4	2.0	0	Pass
Ensuite 66	306	9	5	2.0	0	Pass
Ensuite 67	306	9	6	2.0	0	Pass
Ensuite 68	306	9	8	2.0	0	Pass
Ensuite 69	306	9	5	2.0	0	Pass
Ensuite 70	306	9	1	1.0	0	Pass
Ensuite 71	306	9	1	1.0	0	Pass
Ensuite 72	306	9	1	1.0	0	Pass
Ensuite 73	306	9	1	1.0	0	Pass
Ensuite 74	306	9	5	2.0	0	Pass
Ensuite 75	306	9	12	3.0	0	Pass
Ensuite 76	306	9	8	2.0	0	Pass
Ensuite 77	306	9	14	3.0	0	Pass
Ensuite 78	306	9	10	3.0	0	Pass
Ensuite 79	306	9	15	3.0	0	Pass
Assisted Bath 1	306	9	0	0.0	0	Pass
Assisted Bath 2	306	9	0	0.0	0	Pass
Assisted Bath 3	306	9	0	0.0	0	Pass
Assisted Bath 4	306	9	1	1.0	0	Pass
Bedroom 1	3672	110	0	0.0	0	Pass
Bedroom 2	3672	110	16	8.0	0	Pass
Bedroom 3	3672	110	5	2.0	0	Pass
Bedroom 4	3672	110	5	5.0	0	Pass
Bedroom 5	3672	110	5	2.0	0	Pass
Bedroom 6	3672	110	0	0.0	0	Pass
Bedroom 7	3672	110	0	0.0	0	Pass
Bedroom 8	3672	110	9	5.0	0	Pass
Bedroom 9	3672	110	14	6.0	0	Pass
Bedroom 10	3672	110	12	6.0	0	Pass
Bedroom 11	3672	110	16	6.0	0	Pass
Bedroom 12	3672	110	0	0.0	0	Pass
Bedroom 14	3672	110	16	6.0	0	Pass
Bedroom 15	3672	110	0	0.0	0	Pass

Zone Name	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: #Hours Exceeding Absolute Limit	Result
Bedroom 16	3672	110	16	6.0	0	Pass
Bedroom 17	3672	110	0	0.0	0	Pass
Bedroom 18	3672	110	20	8.0	0	Pass
Bedroom 19	3672	110	0	0.0	0	Pass
Bedroom 20	3672	110	23	13.0	0	Pass
Bedroom 21	3672	110	14	7.0	0	Pass
Bedroom 22	3672	110	0	0.0	0	Pass
Bedroom 23	3672	110	24	9.0	0	Pass
Bedroom 24	3672	110	0	0.0	0	Pass
Bedroom 25	3672	110	27	10.0	0	Pass
Bedroom 26	3672	110	0	0.0	0	Pass
Bedroom 27	3672	110	41	12.0	0	Pass
Bedroom 28	3672	110	0	0.0	0	Pass
Bedroom 29	3672	110	51	15.0	0	Pass
Bedroom 30	3672	110	0	0.0	0	Pass
Bedroom 31	3672	110	22	9.0	0	Pass
Bedroom 32	3672	110	0	0.0	0	Pass
Bedroom 33	3672	110	4	3.0	0	Pass
Bedroom 34	3672	110	4	3.0	0	Pass
Bedroom 35	3672	110	13	5.0	0	Pass
Bedroom 36	3672	110	25	9.0	0	Pass
Bedroom 37	3672	110	8	2.0	0	Pass
Bedroom 38	3672	110	2	2.0	0	Pass
Bedroom 39	3672	110	35	8.0	0	Pass
Bedroom 40	3672	110	27	10.0	0	Pass
Bedroom 41	3672	110	30	5.0	0	Pass
Bedroom 42	3672	110	85	19.0	0	Pass
Bedroom 43	3672	110	5	3.0	0	Pass
Bedroom 44	3672	110	61	17.0	0	Pass
Bedroom 45	3672	110	3	3.0	0	Pass
Bedroom 46	3672	110	56	17.0	0	Pass
Bedroom 47	3672	110	1	1.0	0	Pass
Bedroom 48	3672	110	58	17.0	0	Pass
Bedroom 49	3672	110	0	0.0	0	Pass
Bedroom 50	3672	110	49	15.0	0	Pass
Bedroom 51	3672	110	16	7.0	0	Pass
Bedroom 52	3672	110	30	9.0	0	Pass
Bedroom 53	3672	110	28	8.0	0	Pass
Bedroom 54	3672	110	6	3.0	0	Pass
Bedroom 55	3672	110	3	3.0	0	Pass
Bedroom 56	3672	110	3	3.0	0	Pass
Bedroom 57	3672	110	3	3.0	0	Pass
Bedroom 58	3672	110	6	6.0	0	Pass

Zone Name	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: #Hours Exceeding Absolute Limit	Result
Bedroom 59	3672	110	17	8.0	0	Pass
Bedroom 60	3672	110	55	16.0	0	Pass
Bedroom 61	3672	110	9	6.0	0	Pass
Bedroom 62	3672	110	24	13.0	0	Pass
Bedroom 63	3672	110	5	5.0	0	Pass
Bedroom 64	3672	110	43	12.0	0	Pass
Bedroom 65	3672	110	17	8.0	0	Pass
Bedroom 66	3672	110	20	13.0	0	Pass
Bedroom 67	3672	110	26	12.0	0	Pass
Bedroom 68	3672	110	52	15.0	0	Pass
Bedroom 69	3672	110	30	8.0	0	Pass
Bedroom 70	3672	110	0	0.0	0	Pass
Bedroom 71	3672	110	4	4.0	0	Pass
Bedroom 72	3672	110	0	0.0	0	Pass
Bedroom 73	3672	110	0	0.0	0	Pass
Bedroom 74	3672	110	11	6.0	0	Pass
Bedroom 75	3672	110	61	16.0	0	Pass
Bedroom 76	3672	110	29	12.0	0	Pass
Bedroom 77	3672	110	90	24.0	0	Pass
Bedroom 78	3672	110	33	13.0	0	Pass
Bedroom 79	3672	110	95	26.0	0	Pass
Stair 1 GF	2448	73	15	5.0	0	Pass
Stair 1 FF	2448	73	37	10.0	0	Pass
Stair 1 SF	2448	73	35	10.0	0	Pass
Stair 2 GF	2448	73	11	6.0	0	Pass
Stair 2 FF	2448	73	17	6.0	0	Pass
Stair 2 SF	2448	73	0	0.0	0	Pass
Stair 3 GF	2448	73	42	16.0	0	Pass
Stair 3 FF	2448	73	32	15.0	0	Pass
Stair 3SF	2448	73	46	16.0	0	Pass
Stair 4 GF	2448	73	56	15.0	0	Pass
Stair 4 FF	2448	73	43	13.0	0	Pass
Stair 4 SF	2448	73	0	0.0	0	Pass
Kitchen Changing	306	9	1	2.0	0	Pass
Female Changing	306	9	1	1.0	0	Pass
Male Changing	306	9	1	1.0	0	Pass
Circulation 1 Foyer	1683	50	0	0.0	0	Pass
Circulation 2	2448	73	0	0.0	0	Pass
Circulation 3	2448	73	0	0.0	0	Pass
Circulation 4	2448	73	0	0.0	0	Pass
Circulation 5	2448	73	0	0.0	0	Pass
Circulation 6	2448	73	0	0.0	0	Pass
Circulation 7	2448	73	0	0.0	0	Pass

Zone Name	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: #Hours Exceeding Absolute Limit	Result
Circulation 8	2448	73	0	0.0	0	Pass
Circulation 9	2448	73	0	0.0	0	Pass
Circulation 10	2448	73	0	0.0	0	Pass
Circulation 11	2448	73	0	0.0	0	Pass
Circulation 12	2448	73	0	0.0	0	Pass
Circulation 13	2448	73	0	0.0	0	Pass
Circulation 14	2448	73	0	0.0	0	Pass
Circulation 15	2448	73	0	0.0	0	Pass
Circulation 16	2448	73	0	0.0	0	Pass
Circulation 17	2448	73	0	0.0	0	Pass
Circulation 18	2448	73	1	1.0	0	Pass
Circulation 19	2448	73	0	0.0	0	Pass
Circulation 20	2448	73	0	0.0	0	Pass
Circulation 21	2448	73	0	0.0	0	Pass
Circulation 22	2448	73	0	0.0	0	Pass
Circulation 23	2448	73	0	0.0	0	Pass
Circulation 24	2448	73	0	0.0	0	Pass
Circulation 25	2448	73	0	0.0	0	Pass
Circulation 26	2448	73	67	14.0	0	Pass
Hoist/Wheelchair 1	1989	59	0	0.0	0	Pass
Hoist/Wheelchair 2	1989	59	0	0.0	0	Pass
Hoist/Wheelchair 3	1989	59	0	0.0	0	Pass
Cafe	2295	68	0	0.0	0	Pass
Cinema/Bar	2295	68	0	0.0	0	Pass
Lounge 1	2295	68	0	0.0	0	Pass
Quiet Lounge 1	2295	68	0	0.0	0	Pass
Dining Room 1	2295	68	0	0.0	0	Pass
Namaste Lounge	2295	68	0	0.0	0	Pass
Dining Room 2	2295	68	0	0.0	0	Pass
Lounge/Dining 1	2295	68	0	0.0	0	Pass
Lounge/Dining 2	2295	68	0	0.0	0	Pass
Activity Room	2295	68	0	0.0	0	Pass
Quiet Lounge 2	2295	68	0	0.0	0	Pass
Lounge 2	2295	68	0	0.0	0	Pass
Lounge 3	2295	68	0	0.0	0	Pass
Hobby Room	2295	68	0	0.0	0	Pass
Kitchen	2601	78	0	0.0	0	Pass
Drugs 1	1989	59	0	0.0	0	Pass
Drugs 2	1989	59	0	0.0	0	Pass
Drugs 3	1989	59	0	0.0	0	Pass
Drugs 4	1989	59	0	0.0	0	Pass
Staff Room	2295	68	35	15.0	0	Pass
Laundry	1836	55	3	3.0	0	Pass

Zone Name	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: #Hours Exceeding Absolute Limit	Result
Nurse 1	1836	55	0	0.0	0	Pass
Nurse 2	1836	55	0	0.0	0	Pass
Nurse 3	1836	55	0	0.0	0	Pass
Nurse 4	1836	55	2	2.0	0	Pass
CRM Office	1836	55	0	0.0	0	Pass
Hairdresser	1836	55	0	0.0	0	Pass
Admin Office	1836	55	2	2.0	0	Pass
Manager Office	1836	55	0	0.0	0	Pass
Plantroom	0	0	0	0.0	0	Pass
Sluice 1	2448	73	3	3.0	0	Pass
Sluice 2	2448	73	5	5.0	0	Pass
Sluice 3	2448	73	4	4.0	0	Pass
Sluice 4	2448	73	0	0.0	0	Pass
Reception	1683	50	0	0.0	0	Pass
Store 1 Admin	0	0	0	0.0	0	Pass
Store 2 Maintenance	0	0	0	0.0	0	Pass
Store 3	0	0	0	0.0	0	Pass
Store 4	0	0	0	0.0	0	Pass
Store 5	0	0	0	0.0	0	Pass
Store 6	0	0	0	0.0	0	Pass
Store 7	0	0	0	0.0	0	Pass
Store 8	0	0	0	0.0	0	Pass
Store 9	0	0	0	0.0	0	Pass
Store 10	0	0	0	0.0	0	Pass
Store 11	0	0	0	0.0	0	Pass
Store 12	0	0	0	0.0	0	Pass
Store 13	0	0	0	0.0	0	Pass
Store 14	0	0	0	0.0	0	Pass
Store 15	0	0	0	0.0	0	Pass
Store 16	0	0	0	0.0	0	Pass
Store 17	0	0	0	0.0	0	Pass
Store 18	0	0	0	0.0	0	Pass
Store 19	0	0	0	0.0	0	Pass
Store 20	0	0	0	0.0	0	Pass
Store 21	0	0	0	0.0	0	Pass
Store 22	0	0	0	0.0	0	Pass
WC 02	2448	73	1	1.0	0	Pass
WC 03	2448	73	4	4.0	0	Pass
WC 04	2448	73	2	2.0	0	Pass
WC 05	2448	73	13	11.0	0	Pass
WC 06	2448	73	12	10.0	0	Pass
WC Visitors	2448	73	4	4.0	0	Pass
WC 01	2448	73	2	2.0	0	Pass

Zone Name	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: #Hours Exceeding Absolute Limit	Result
Cleaners 01	0	0	0	0.0	0	Pass
Cleaners 02	0	0	0	0.0	0	Pass
Cleaners 03	0	0	0	0.0	0	Pass
Cleaners 04	0	0	0	0.0	0	Pass

Appendix B - CIBSE TM59 Results

Zone Name	Room Use	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Annual Night Occupied Hours for Bedroom	Max Exceedable Night Hours	Criterion 2: Number of Night Hours Exceeding 26 °C for Bedrooms	Result
Bedroom 1	Bedroom	3672	110	0	3285	32	0	Pass
Bedroom 2	Bedroom	3672	110	16	3285	32	6	Pass
Bedroom 3	Bedroom	3672	110	5	3285	32	0	Pass
Bedroom 4	Bedroom	3672	110	5	3285	32	4	Pass
Bedroom 5	Bedroom	3672	110	5	3285	32	0	Pass
Bedroom 6	Bedroom	3672	110	0	3285	32	0	Pass
Bedroom 7	Bedroom	3672	110	0	3285	32	0	Pass
Bedroom 8	Bedroom	3672	110	9	3285	32	2	Pass
Bedroom 9	Bedroom	3672	110	14	3285	32	5	Pass
Bedroom 10	Bedroom	3672	110	12	3285	32	4	Pass
Bedroom 11	Bedroom	3672	110	16	3285	32	5	Pass
Bedroom 12	Bedroom	3672	110	0	3285	32	0	Pass
Bedroom 14	Bedroom	3672	110	16	3285	32	5	Pass
Bedroom 15	Bedroom	3672	110	0	3285	32	0	Pass
Bedroom 16	Bedroom	3672	110	16	3285	32	5	Pass
Bedroom 17	Bedroom	3672	110	0	3285	32	0	Pass
Bedroom 18	Bedroom	3672	110	20	3285	32	5	Pass
Bedroom 19	Bedroom	3672	110	0	3285	32	1	Pass
Bedroom 20	Bedroom	3672	110	23	3285	32	5	Pass
Bedroom 21	Bedroom	3672	110	14	3285	32	5	Pass
Bedroom 22	Bedroom	3672	110	0	3285	32	3	Pass
Bedroom 23	Bedroom	3672	110	24	3285	32	6	Pass
Bedroom 24	Bedroom	3672	110	0	3285	32	4	Pass
Bedroom 25	Bedroom	3672	110	27	3285	32	9	Pass
Bedroom 26	Bedroom	3672	110	0	3285	32	4	Pass
Bedroom 27	Bedroom	3672	110	41	3285	32	9	Pass
Bedroom 28	Bedroom	3672	110	0	3285	32	4	Pass
Bedroom 29	Bedroom	3672	110	51	3285	32	9	Pass
Bedroom 30	Bedroom	3672	110	0	3285	32	2	Pass
Bedroom 31	Bedroom	3672	110	22	3285	32	7	Pass
Bedroom 32	Bedroom	3672	110	0	3285	32	3	Pass
Bedroom 33	Bedroom	3672	110	4	3285	32	6	Pass
Bedroom 34	Bedroom	3672	110	4	3285	32	6	Pass
Bedroom 35	Bedroom	3672	110	13	3285	32	7	Pass
Bedroom 36	Bedroom	3672	110	25	3285	32	8	Pass
Bedroom 37	Bedroom	3672	110	8	3285	32	1	Pass
Bedroom 38	Bedroom	3672	110	2	3285	32	5	Pass
Bedroom 39	Bedroom	3672	110	35	3285	32	5	Pass
Bedroom 40	Bedroom	3672	110	27	3285	32	9	Pass
Bedroom 41	Bedroom	3672	110	30	3285	32	5	Pass

Zone Name	Room Use	Occupied Summer Hours	Max. Exceedable Hours	Criterion 1: #Hours Exceeding Comfort Range	Annual Night Occupied Hours for Bedroom	Max Exceedable Night Hours	Criterion 2: Number of Night Hours Exceeding 26 °C for Bedrooms	Result
Bedroom 42	Bedroom	3672	110	85	3285	32	17	Pass
Bedroom 43	Bedroom	3672	110	5	3285	32	7	Pass
Bedroom 44	Bedroom	3672	110	61	3285	32	18	Pass
Bedroom 45	Bedroom	3672	110	3	3285	32	7	Pass
Bedroom 46	Bedroom	3672	110	56	3285	32	17	Pass
Bedroom 47	Bedroom	3672	110	1	3285	32	7	Pass
Bedroom 48	Bedroom	3672	110	58	3285	32	14	Pass
Bedroom 49	Bedroom	3672	110	0	3285	32	1	Pass
Bedroom 50	Bedroom	3672	110	49	3285	32	12	Pass
Bedroom 51	Bedroom	3672	110	16	3285	32	7	Pass
Bedroom 52	Bedroom	3672	110	30	3285	32	10	Pass
Bedroom 53	Bedroom	3672	110	28	3285	32	9	Pass
Bedroom 54	Bedroom	3672	110	6	3285	32	3	Pass
Bedroom 55	Bedroom	3672	110	3	3285	32	4	Pass
Bedroom 56	Bedroom	3672	110	3	3285	32	2	Pass
Bedroom 57	Bedroom	3672	110	3	3285	32	4	Pass
Bedroom 58	Bedroom	3672	110	6	3285	32	3	Pass
Bedroom 59	Bedroom	3672	110	17	3285	32	13	Pass
Bedroom 60	Bedroom	3672	110	55	3285	32	18	Pass
Bedroom 61	Bedroom	3672	110	9	3285	32	9	Pass
Bedroom 62	Bedroom	3672	110	24	3285	32	10	Pass
Bedroom 63	Bedroom	3672	110	5	3285	32	6	Pass
Bedroom 64	Bedroom	3672	110	43	3285	32	10	Pass
Bedroom 65	Bedroom	3672	110	17	3285	32	12	Pass
Bedroom 66	Bedroom	3672	110	20	3285	32	10	Pass
Bedroom 67	Bedroom	3672	110	26	3285	32	13	Pass
Bedroom 68	Bedroom	3672	110	52	3285	32	10	Pass
Bedroom 69	Bedroom	3672	110	30	3285	32	9	Pass
Bedroom 70	Bedroom	3672	110	0	3285	32	1	Pass
Bedroom 71	Bedroom	3672	110	4	3285	32	0	Pass
Bedroom 72	Bedroom	3672	110	0	3285	32	0	Pass
Bedroom 73	Bedroom	3672	110	0	3285	32	0	Pass
Bedroom 74	Bedroom	3672	110	11	3285	32	9	Pass
Bedroom 75	Bedroom	3672	110	61	3285	32	19	Pass
Bedroom 76	Bedroom	3672	110	29	3285	32	18	Pass
Bedroom 77	Bedroom	3672	110	90	3285	32	28	Pass
Bedroom 78	Bedroom	3672	110	33	3285	32	18	Pass
Bedroom 79	Bedroom	3672	110	95	3285	32	25	Pass