



Moss Lane East

CIBSE TM59 Overheating Assessment



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Contents

1.0	Executive Summary.....	5
2.0	Introduction	6
2.1	Development Proposal.....	7
2.2	Architectural Information Provided	7
2.3	Sample Units Selected	9
2.4	Assessment Limitations.....	9
3.0	Dynamic Simulation Modelling.....	10
4.0	Model Details and Assumptions	11
4.1	Weather Data.....	11
4.2	Constructions	11
4.3	Glazing.....	11
4.4	Natural Ventilation.....	12
4.5	Mechanical Ventilation	12
4.6	Occupancy and Internal Heat Gains.....	12
4.7	Communal Corridor Heat Gain.....	14
5.0	CIBSE TM59 Overheating Methodology	15
6.0	Overheating Assessment Results	16
6.1	CIBSE TM59 Results.....	16

Figures

Figure 1 - Good Homes Alliance Guide - Overheating in New Homes - Tools and Guidance	6
Figure 2 - Elevations of the 4 New Dwellings, Moss Lane East.....	7
Figure 3 - Floor Plans of the 4 New Dwellings, Moss Lane East.....	8
Figure 4 - Views of the EDSL TAS Dynamic Simulation Model	10
Figure 5 - Occupancy and Heat Gain Profiles from CIBSE TM59 Table 2	13
Figure 6 - Graphs of the CIBSE TM59 Heat Gain Profiles for Different Room Types	14
Figure 7 - CIBSE TM 59	15

Tables

Table 1 - Summary of CIBSE TM59 Overheating Assessment Results	5
Table 2 - Construction Details	11
Table 3 - Glazing Details	11
Table 4 - Minimum Free Area of Openings Required	12
Table 5 - Summary of CIBSE TM59 Overheating Assessment Results	16

Appendices

Appendix A - CIBSE TM59 Overheating Results

1.0 Executive Summary

A Dynamic Simulation Thermal Model has been created for the 4No. New Build dwellings located on Moss Lane East, Manchester in order to determine if the living, kitchen, and bedroom areas would suffer from overheating.

The overheating assessment has been carried out under the CIBSE TM59 Methodology and results have been produced for the years 2020, 2050, and 2080, as well as for different Design Weather Years DSY1, DSY2, and DSY3.

Under the TM59 methodology, rooms only need to satisfy the overheating criteria for DSY1 2020 in order to comply and not be deemed as overheating.

Table 1 - Summary of CIBSE TM59 Overheating Assessment Results

Number of Rooms Assessed	Number of Rooms Passing CIBSE TM59				
	DSY1 2020	DSY1 2050	DSY1 2080	DSY2 2020	DSY3 2020
24	24	14	7	24	19

The summary of results shows that under the assumed design, as described throughout this report, all of the habitable rooms would satisfy the overheating criteria under the DSY1 2020 weather data, therefore meeting the requirements of the CIBSE TM59.

2.0 Introduction

EEABS (Elmstead Energy Assessments & Building Services) were instructed to carry out a CIBSE TM59 Overheating Assessment for the proposed 4No. New Build dwellings located on Moss Lane East, Manchester.

The purpose of the overheating assessment is to provide early stage design advice as to the possibility of overheating occurring within the dwellings. A dwelling shown to be satisfying the CIBSE TM59 criteria can be described as providing a comfortable internal environment, within sensible limits, for the occupants.

Any room that maybe initially failing the criteria can have mitigating methods for reducing the amount of overheating investigated, these can then be incorporated early in the design stage of the project to ensure that a pass is achieved.

CIBSE TM59 is recommended by The Good Homes Alliance as one method of providing overheating guidance within new homes.

As CIBSE TM59 requires the use of Dynamic Simulation Modelling (DSM) software capable of simulating the temperature every hour in a year and as it uses location specific CIBSE DSY (Design Summer Year) weather data, it is thought to be far more accurate than other types of overheating assessments such as SAP, PHPP, or the Home Quality Mark.

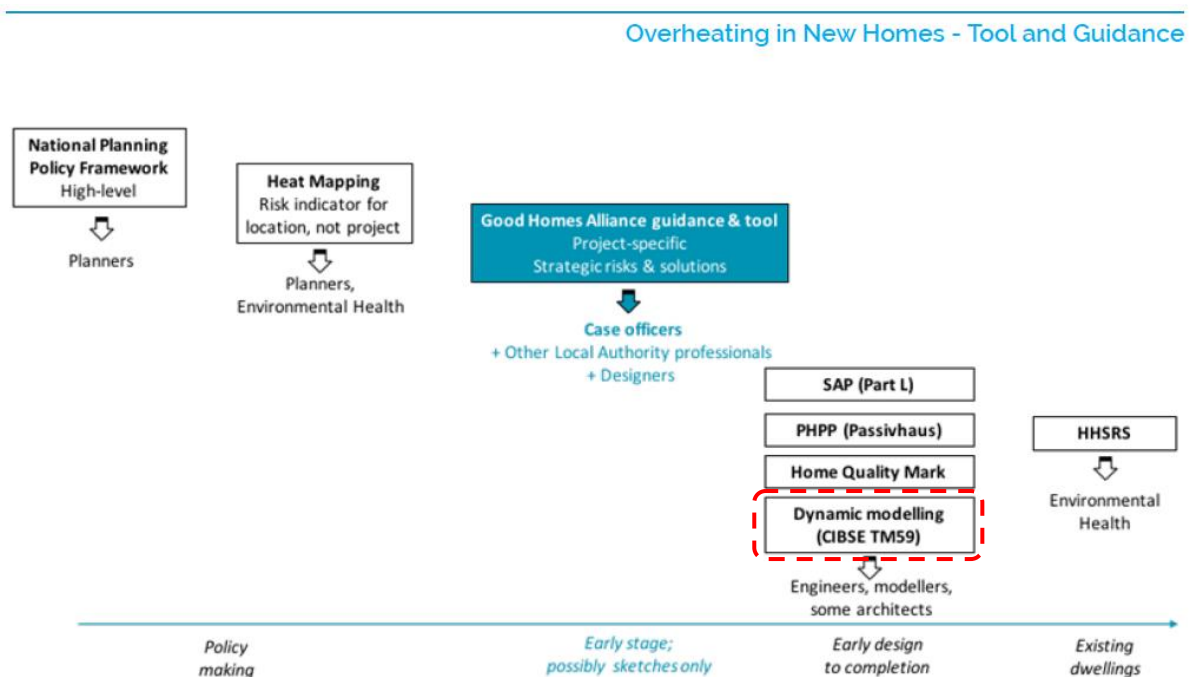


Figure 1 - Good Homes Alliance Guide - Overheating in New Homes - Tools and Guidance

2.1 Development Proposal

The proposed development is to be located on Moss Lane East, Manchester and will feature 4 new build dwellings across ground to second floors.

2.2 Architectural Information Provided

This assessment has been based on drawings and information provided to us by our client on the 8th February 2022. Floor Plans and Elevations of the development can be seen below, please see the architects' submitted drawings for full details of the development.



Figure 2 - Elevations of the 4 New Dwellings, Moss Lane East

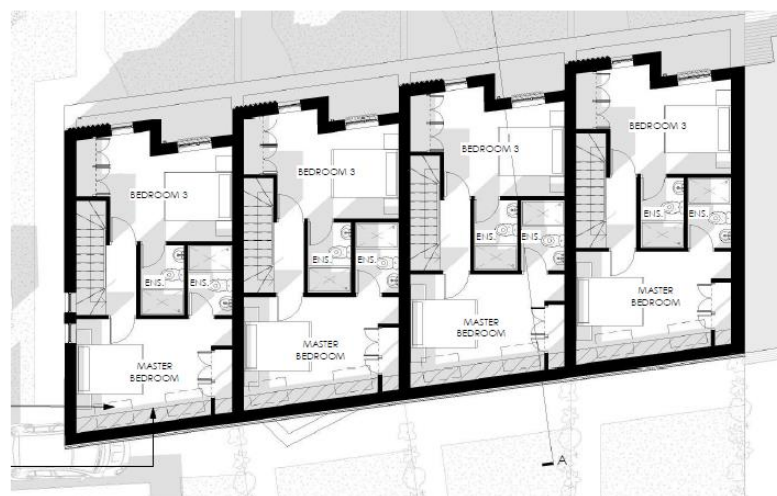
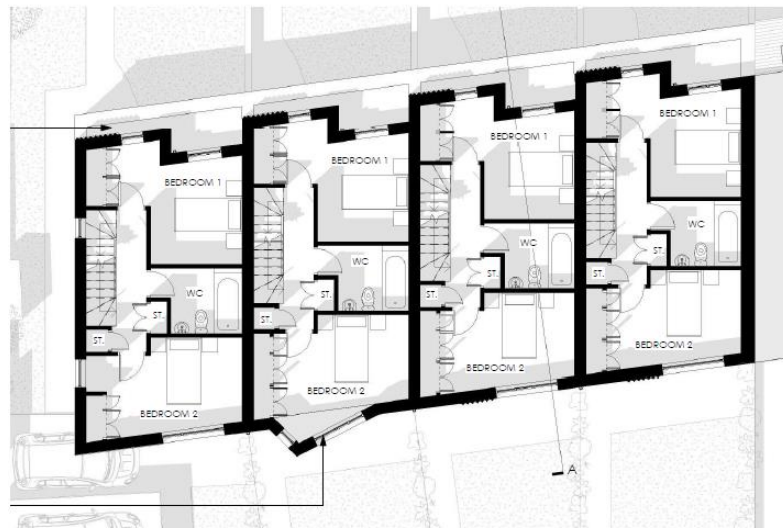
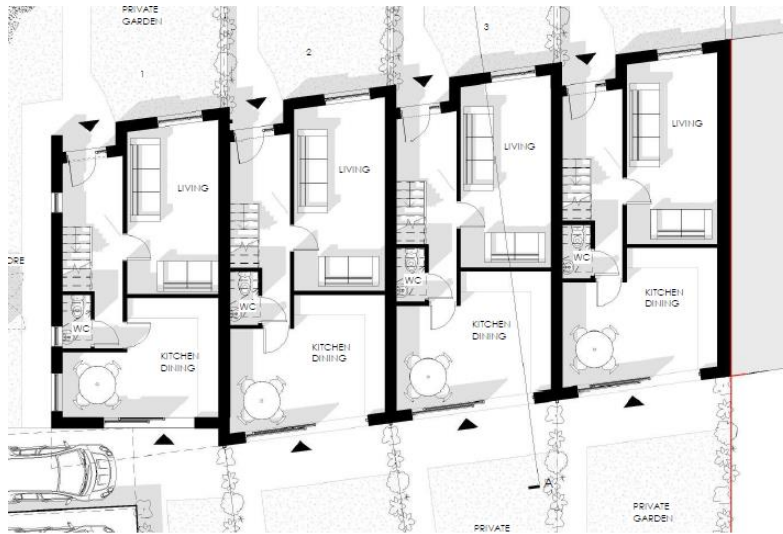


Figure 3 - Floor Plans of the 4 New Dwellings, Moss Lane East

2.3 Sample Units Selected

Although CIBSE TM59 does allow for a sample number of units to be assessed in order to demonstrate compliance, we have assessed every habitable room within each of the proposed dwellings to provide a more comprehensive evaluation.

2.4 Assessment Limitations

The appraisals within this report are based on the CIBSE TM59 methodology and should not be understood as an exact calculation of internal temperatures or overheating experienced.

Weather conditions at the site may be different to those within the weather data used and occupants may behave differently than suggested within this report, for example not opening windows when required. With the impacts of climate change increasing the occurrence of extreme heat wave events are also likely to escalate.

Overheating can be subjective with vulnerable occupants such as infants or the elderly more likely to be affected. If an occupant is suffering from the effects of overheating, please do not hesitate to seek medical help.

3.0 Dynamic Simulation Modelling

EDSL TAS Dynamic Simulation Modelling software has been used for the CIBSE TM59 Overheating Assessment. The EDSL TAS software has been approved by the Department for Communities and Local Government (DCLG) for use as a Dynamic Simulation Model (DSM) software package.

As part of its approval process, the TAS software had to demonstrate that it satisfies all of the tests and other requirements defined within sections 2 and 3 of the document “CIBSE TM33:2006, CIBSE standard tests for the assessment of building services design software”. The thermal modelling has also been carried out in accordance with CIBSE AM11 Building Energy and Environmental Modelling.

The following images are taken from the EDSL TAS software used for the overheating assessment.

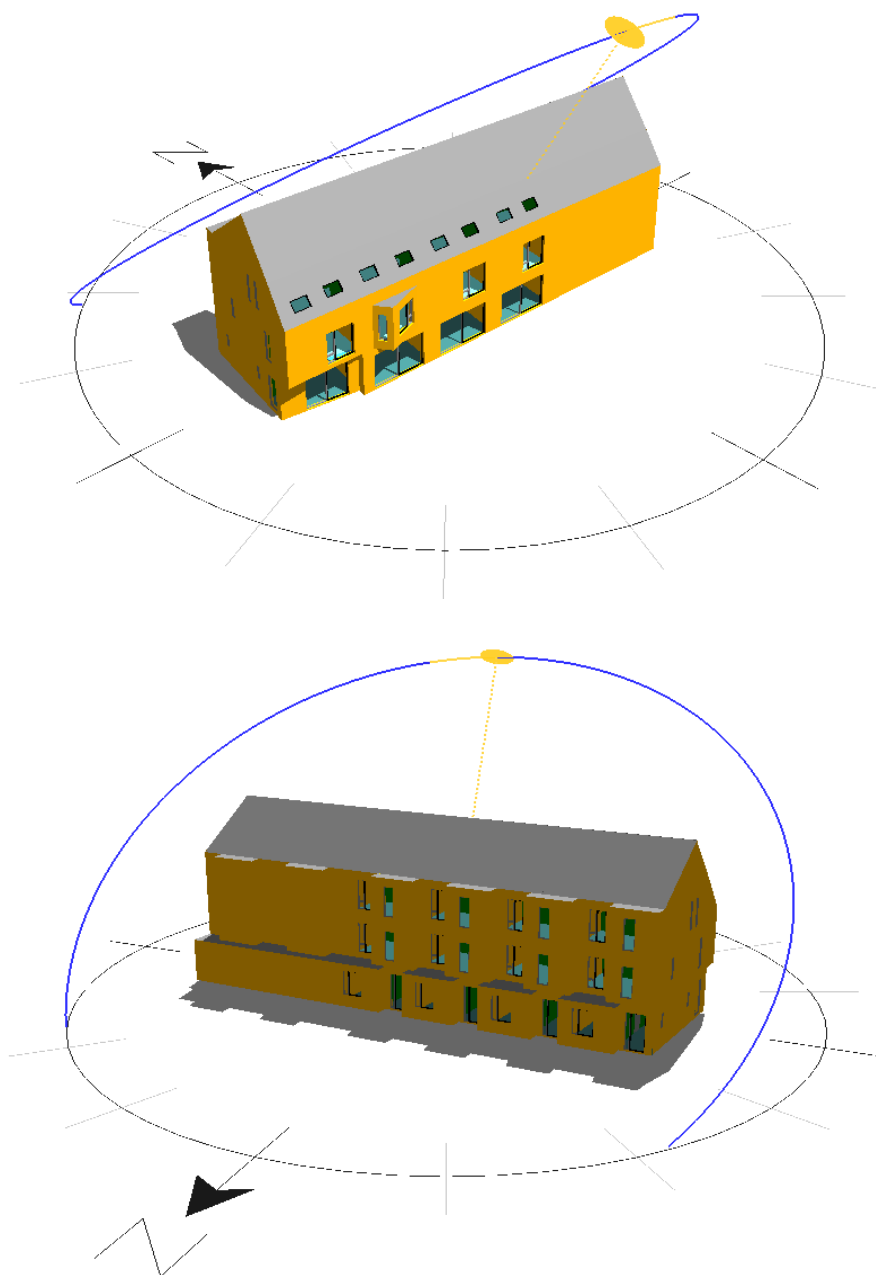


Figure 4 - Views of the EDSL TAS Dynamic Simulation Model

4.0 Model Details and Assumptions

The following construction, glazing, and building details have been used within the EDSL TAS computer model in order to achieve a pass under the CIBSE TM59 Assessment.

4.1 Weather Data

The proposed development is located in Manchester. CIBSE provide weather data for 14 different locations across the UK, with 3 separate weather files for London. We believe the most appropriate weather data to use for the proposed building would be the Manchester weather data.

For the TM59 overheating assessment Design Summer Year (DSY1) High emissions, 50th Percentile weather data for the year 2020 must be used, however we have also simulated the development under both 2050 and 2080 weather data to provide a greater analysis of how the units are likely to perform in the future. As well as using DSY 2 and DSY 3 weather data that simulates different types of summer conditions.

This allows for any mitigating measures that may be required to be incorporated early in the design stages. A description of DSY weather types can be seen below:

- DSY1: Moderately warm summer
- DSY2: Short, intense warm spell
- DSY3: Long, less intense warm spell

4.2 Constructions

Construction details for the building were provided to us and can be seen in the table below.

Table 2 - Construction Details

Construction	Composition	U-Value (W/m ² .K)
External Wall	- Insulated Brick and Block Cavity Wall	0.26
Roof	- Rafters with insulation between and over, Tiles	0.12
Ground Floor	- Insulated Screed Floor	0.13

4.3 Glazing

Glazing U-Values for the development were also provided to us. To ensure a pass we have assumed that the G-Value would be 0.63. We have also assumed that a blind (Venetian type that can be angled to block direct sunlight but not impede airflow) will be installed internally on all glazing and used when in direct sunlight. This brings the G-Value down to 0.18.

Table 3 - Glazing Details

Element	Glazing Type	Overall U-Value (W/m ² .K)	Solar Gain G-Value	Solar Gain G-Value with Blind
Windows and Doors	Double Glazing	1.5	0.63	0.18

4.4 Natural Ventilation

A summary of the natural ventilation openings and their profiles used within the model can be seen below.

- An infiltration rate of 0.30 ACH has been assumed in every habitable room.
- Windows/Glazed doors serving Living/Kitchen/Dining areas were assumed to be openable when required during the hours of 8am - 11pm. Outside of these hours they would be closed for security purposes.
- Bedroom windows and roof lights were assumed to be able to openable when required during the hours of 11pm - 8am. Outside of these hours they would be closed.
- Internal Doors were assumed to be openable when required 24 hours a day.
- The table below shows the minimum free area of opening each room will require.

Table 4 - Minimum Free Area of Openings Required

	Kitchen/Dining	Living	Bed 1	Bed 2	Bed 3	Master Bed
House 1	0.91m ²	0.45m ²	0.33m ²	0.76m ²	0.33m ²	0.46m ²
House 2	1.24m ²	0.45m ²	0.33m ²	0.56m ²	0.33m ²	0.46m ²
House 3	1.24m ²	0.45m ²	0.33m ²	0.76m ²	0.33m ²	0.46m ²
House 4	1.24m ²	0.45m ²	0.33m ²	0.76m ²	0.33m ²	0.46m ²

4.5 Mechanical Ventilation

We have assumed that there will be a mechanical ventilation system installed within each dwelling.

We have assumed that each bedroom will be provided 5 l/s of fresh air 24 hours a day and that each living room and kitchen will be provided with 10 l/s of fresh air 24 hours a day.

4.6 Occupancy and Internal Heat Gains

As each room within a dwelling will be used differently dependent on the occupant's requirements, CIBSE TM59 provides a mandatory set of occupancy profiles and internal heat gains to be used across all assessments. This ensures that each dwelling is assessed on a level basis and allows the merits of any overheating reduction techniques to be evaluated effectively.

Dependent on the type of unit (Studio, 1 Bedroom, 2 Bedroom or 3 Bedroom) and the type of room being assessed (Living Room, kitchen, Double or Single Bedroom), TM59 provides a full list of occupancy and heat gain profiles to use within the computer model.

Internal lighting gain is assumed to be 2 W/m² in all occupied rooms.

Unit/ room type	Occupancy	Equipment load
Studio	2 people at all times	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 5% 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 gain 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

Figure 5 - Occupancy and Heat Gain Profiles from CIBSE TM59 Table 2

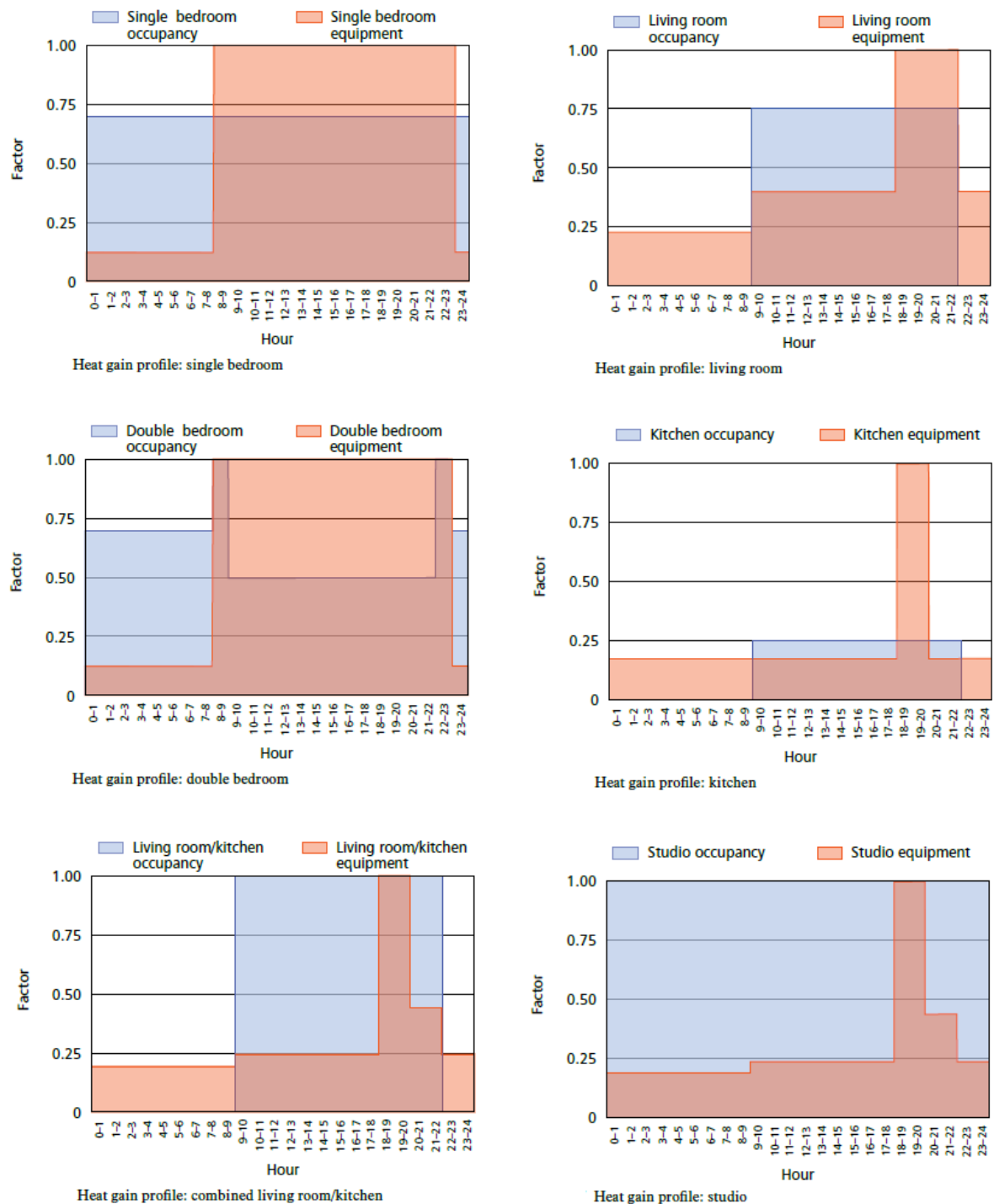


Figure 6 - Graphs of the CIBSE TM59 Heat Gain Profiles for Different Room Types

4.7 Communal Corridor Heat Gain

It is believed that there will be no heating or hot water pipework running through communal corridors, therefore they do not need to be included within this overheating assessment.

5.0 CIBSE TM59 Overheating Methodology

CIBSE TM59 is the very latest design methodology provided by CIBSE (Chartered Institute of Building Services Engineers) for the assessment of overheating risk in homes.

Design methodology for the
assessment of overheating
risk in homes



Figure 7 - CIBSE TM 59

In order to comply with the CIBSE TM59 Overheating Methodology the following two criteria need to be passed.

- For Living Rooms, Kitchens and Bedrooms – The number of hours 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% of occupied hours.
- 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.

The above criteria must be passed using DSY1 2020 weather data to be considered as not overheating. Although the assessment can also be run using future weather data or different summer scenarios, a pass under these weather files is not required for CIBSE TM59 compliance.

6.0 Overheating Assessment Results

The results of the CIBSE TM59 overheating assessments carried out, for the development as described throughout this report, can be seen below with more detailed results found within Appendix A.

6.1 CIBSE TM59 Results

Table 5 - Summary of CIBSE TM59 Overheating Assessment Results

Number of Rooms Assessed	Number of Rooms Passing CIBSE TM59				
	DSY1 2020	DSY1 2050	DSY1 2080	DSY2 2020	DSY3 2020
24	24	14	7	24	19

The summary of results shows that under the assumed design, as described throughout this report, all of the habitable rooms would satisfy the overheating criteria under the DSY1 2020 weather data, therefore meeting the requirements of CIBSE TM59.

Appendix A - CIBSE TM59 Overheating Results

DSY 1 - 2020

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
1 - BED 1	Bedroom	3672	110	0	3285	32	14	Pass
1 - BED 2	Bedroom	3672	110	31	3285	32	15	Pass
1 - BED 3	Bedroom	3672	110	6	3285	32	29	Pass
1 - K/D	Living Room / Kitchen	1989	59	6	N/A	N/A	N/A	Pass
1 - LIVING	Living Room / Kitchen	1989	59	0	N/A	N/A	N/A	Pass
1 - MASTER BED	Bedroom	3672	110	33	3285	32	25	Pass
2 - BED 1	Bedroom	3672	110	0	3285	32	10	Pass
2 - BED 2	Bedroom	3672	110	0	3285	32	12	Pass
2 - BED 3	Bedroom	3672	110	0	3285	32	21	Pass
2 - K/D	Living Room / Kitchen	1989	59	3	N/A	N/A	N/A	Pass
2 - LIVING	Living Room / Kitchen	1989	59	0	N/A	N/A	N/A	Pass
2 - MASTER BED	Bedroom	3672	110	0	3285	32	17	Pass
3 - BED 1	Bedroom	3672	110	0	3285	32	9	Pass
3 - BED 2	Bedroom	3672	110	0	3285	32	10	Pass
3 - BED 3	Bedroom	3672	110	0	3285	32	19	Pass
3 - K/D	Living Room / Kitchen	1989	59	2	N/A	N/A	N/A	Pass
3 - LIVING	Living Room / Kitchen	1989	59	0	N/A	N/A	N/A	Pass
3 - MASTER BED	Bedroom	3672	110	0	3285	32	17	Pass
4 - BED 1	Bedroom	3672	110	0	3285	32	7	Pass
4 - BED 2	Bedroom	3672	110	0	3285	32	9	Pass
4 - BED 3	Bedroom	3672	110	0	3285	32	19	Pass
4 - K/D	Living Room / Kitchen	1989	59	2	N/A	N/A	N/A	Pass
4 - LIVING	Living Room / Kitchen	1989	59	0	N/A	N/A	N/A	Pass
4 - MASTER BED	Bedroom	3672	110	0	3285	32	16	Pass

DSY 2 - 2020

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
1 - BED 1	Bedroom	3672	110	19	3285	32	8	Pass
1 - BED 2	Bedroom	3672	110	36	3285	32	9	Pass
1 - BED 3	Bedroom	3672	110	19	3285	32	12	Pass
1 - K/D	Living Room / Kitchen	1989	59	19	N/A	N/A	N/A	Pass
1 - LIVING	Living Room / Kitchen	1989	59	17	N/A	N/A	N/A	Pass
1 - MASTER BED	Bedroom	3672	110	35	3285	32	13	Pass
2 - BED 1	Bedroom	3672	110	11	3285	32	3	Pass
2 - BED 2	Bedroom	3672	110	16	3285	32	5	Pass
2 - BED 3	Bedroom	3672	110	7	3285	32	8	Pass
2 - K/D	Living Room / Kitchen	1989	59	20	N/A	N/A	N/A	Pass
2 - LIVING	Living Room / Kitchen	1989	59	17	N/A	N/A	N/A	Pass
2 - MASTER BED	Bedroom	3672	110	9	3285	32	8	Pass
3 - BED 1	Bedroom	3672	110	5	3285	32	3	Pass
3 - BED 2	Bedroom	3672	110	10	3285	32	3	Pass
3 - BED 3	Bedroom	3672	110	7	3285	32	8	Pass
3 - K/D	Living Room / Kitchen	1989	59	20	N/A	N/A	N/A	Pass
3 - LIVING	Living Room / Kitchen	1989	59	17	N/A	N/A	N/A	Pass
3 - MASTER BED	Bedroom	3672	110	9	3285	32	8	Pass
4 - BED 1	Bedroom	3672	110	5	3285	32	3	Pass
4 - BED 2	Bedroom	3672	110	9	3285	32	3	Pass
4 - BED 3	Bedroom	3672	110	5	3285	32	8	Pass
4 - K/D	Living Room / Kitchen	1989	59	20	N/A	N/A	N/A	Pass
4 - LIVING	Living Room / Kitchen	1989	59	17	N/A	N/A	N/A	Pass
4 - MASTER BED	Bedroom	3672	110	8	3285	32	8	Pass

DSY 3 - 2020

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
1 - BED 1	Bedroom	3672	110	32	3285	32	27	Pass
1 - BED 2	Bedroom	3672	110	108	3285	32	30	Pass
1 - BED 3	Bedroom	3672	110	43	3285	32	39	Fail
1 - K/D	Living Room / Kitchen	1989	59	48	N/A	N/A	N/A	Pass
1 - LIVING	Living Room / Kitchen	1989	59	9	N/A	N/A	N/A	Pass
1 - MASTER BED	Bedroom	3672	110	98	3285	32	47	Fail
2 - BED 1	Bedroom	3672	110	6	3285	32	20	Pass
2 - BED 2	Bedroom	3672	110	30	3285	32	20	Pass
2 - BED 3	Bedroom	3672	110	2	3285	32	27	Pass
2 - K/D	Living Room / Kitchen	1989	59	35	N/A	N/A	N/A	Pass
2 - LIVING	Living Room / Kitchen	1989	59	5	N/A	N/A	N/A	Pass
2 - MASTER BED	Bedroom	3672	110	13	3285	32	35	Fail
3 - BED 1	Bedroom	3672	110	0	3285	32	13	Pass
3 - BED 2	Bedroom	3672	110	14	3285	32	18	Pass
3 - BED 3	Bedroom	3672	110	1	3285	32	27	Pass
3 - K/D	Living Room / Kitchen	1989	59	34	N/A	N/A	N/A	Pass
3 - LIVING	Living Room / Kitchen	1989	59	5	N/A	N/A	N/A	Pass
3 - MASTER BED	Bedroom	3672	110	11	3285	32	34	Fail
4 - BED 1	Bedroom	3672	110	0	3285	32	14	Pass
4 - BED 2	Bedroom	3672	110	9	3285	32	18	Pass
4 - BED 3	Bedroom	3672	110	0	3285	32	27	Pass
4 - K/D	Living Room / Kitchen	1989	59	34	N/A	N/A	N/A	Pass
4 - LIVING	Living Room / Kitchen	1989	59	5	N/A	N/A	N/A	Pass
4 - MASTER BED	Bedroom	3672	110	10	3285	32	33	Fail

DSY 1 - 2050

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
1 - BED 1	Bedroom	3672	110	22	3285	32	40	Fail
1 - BED 2	Bedroom	3672	110	96	3285	32	31	Pass
1 - BED 3	Bedroom	3672	110	41	3285	32	57	Fail
1 - K/D	Living Room / Kitchen	1989	59	22	N/A	N/A	N/A	Pass
1 - LIVING	Living Room / Kitchen	1989	59	2	N/A	N/A	N/A	Pass
1 - MASTER BED	Bedroom	3672	110	108	3285	32	58	Fail
2 - BED 1	Bedroom	3672	110	4	3285	32	33	Fail
2 - BED 2	Bedroom	3672	110	21	3285	32	27	Pass
2 - BED 3	Bedroom	3672	110	8	3285	32	54	Fail
2 - K/D	Living Room / Kitchen	1989	59	18	N/A	N/A	N/A	Pass
2 - LIVING	Living Room / Kitchen	1989	59	1	N/A	N/A	N/A	Pass
2 - MASTER BED	Bedroom	3672	110	9	3285	32	47	Fail
3 - BED 1	Bedroom	3672	110	0	3285	32	30	Pass
3 - BED 2	Bedroom	3672	110	7	3285	32	25	Pass
3 - BED 3	Bedroom	3672	110	5	3285	32	52	Fail
3 - K/D	Living Room / Kitchen	1989	59	18	N/A	N/A	N/A	Pass
3 - LIVING	Living Room / Kitchen	1989	59	1	N/A	N/A	N/A	Pass
3 - MASTER BED	Bedroom	3672	110	9	3285	32	47	Fail
4 - BED 1	Bedroom	3672	110	0	3285	32	30	Pass
4 - BED 2	Bedroom	3672	110	6	3285	32	24	Pass
4 - BED 3	Bedroom	3672	110	4	3285	32	52	Fail
4 - K/D	Living Room / Kitchen	1989	59	16	N/A	N/A	N/A	Pass
4 - LIVING	Living Room / Kitchen	1989	59	1	N/A	N/A	N/A	Pass
4 - MASTER BED	Bedroom	3672	110	9	3285	32	46	Fail

DSY 1 - 2080

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
1 - BED 1	Bedroom	3672	110	117	3285	32	102	Fail
1 - BED 2	Bedroom	3672	110	224	3285	32	78	Fail
1 - BED 3	Bedroom	3672	110	169	3285	32	155	Fail
1 - K/D	Living Room / Kitchen	1989	59	69	N/A	N/A	N/A	Fail
1 - LIVING	Living Room / Kitchen	1989	59	33	N/A	N/A	N/A	Pass
1 - MASTER BED	Bedroom	3672	110	248	3285	32	129	Fail
2 - BED 1	Bedroom	3672	110	70	3285	32	90	Fail
2 - BED 2	Bedroom	3672	110	111	3285	32	73	Fail
2 - BED 3	Bedroom	3672	110	75	3285	32	146	Fail
2 - K/D	Living Room / Kitchen	1989	59	56	N/A	N/A	N/A	Pass
2 - LIVING	Living Room / Kitchen	1989	59	31	N/A	N/A	N/A	Pass
2 - MASTER BED	Bedroom	3672	110	99	3285	32	122	Fail
3 - BED 1	Bedroom	3672	110	35	3285	32	90	Fail
3 - BED 2	Bedroom	3672	110	89	3285	32	67	Fail
3 - BED 3	Bedroom	3672	110	66	3285	32	141	Fail
3 - K/D	Living Room / Kitchen	1989	59	55	N/A	N/A	N/A	Pass
3 - LIVING	Living Room / Kitchen	1989	59	28	N/A	N/A	N/A	Pass
3 - MASTER BED	Bedroom	3672	110	93	3285	32	117	Fail
4 - BED 1	Bedroom	3672	110	30	3285	32	95	Fail
4 - BED 2	Bedroom	3672	110	79	3285	32	67	Fail
4 - BED 3	Bedroom	3672	110	65	3285	32	141	Fail
4 - K/D	Living Room / Kitchen	1989	59	55	N/A	N/A	N/A	Pass
4 - LIVING	Living Room / Kitchen	1989	59	29	N/A	N/A	N/A	Pass
4 - MASTER BED	Bedroom	3672	110	88	3285	32	117	Fail