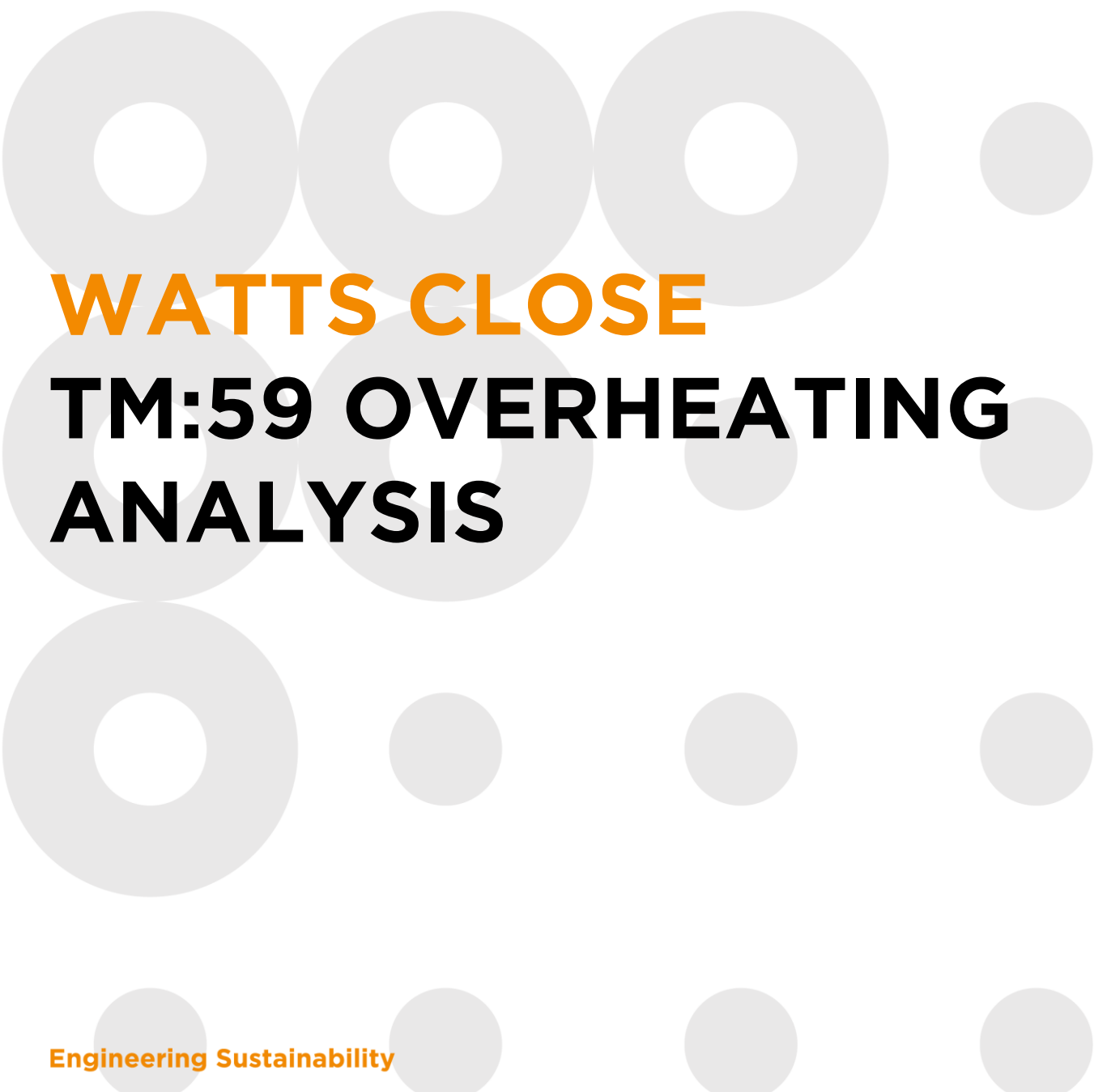


FOR:

Haringey Council
10 Station Road
Wood Green
N22 7TR

A decorative background pattern consisting of several large, light grey circles with white centers, and a grid of smaller, solid grey circles. The pattern is overlaid on the entire page.

WATTS CLOSE

TM:59 OVERHEATING

ANALYSIS

Revision

Version No	Version Date	Status	Summary of Changes
1	26/10/21	Draft	-
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Author

Name	Title
M Glover	Building Physics
M Sales	Director

Distribution

Name	Organisation
J Goulde	Haringey Council
G Kreuziger	Haringey Council
M Cowie	Haringey Council
S Kimman	Haringey Council

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Approved	M Sales	Date	17/12/21

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Engineering Sustainability

Flatt Consulting, Hillside House, 204b Godstone Road, Caterham, Surrey CR3 6RD

t +44 (0)1883 331630 e info@flattconsulting.com w flattconsulting.com

Registered in England No. 4752263



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EXECUTIVE SUMMARY

This report has been prepared by **FLATT** on behalf of Haringey Council to assess the risk of overheating for the new residential development at Watts Close, Haringey.

To overheating risk has been analysed in accordance with “CIBSE Technical Memorandum TM:59 – Design Methodology for the Assessment of Overheating Risk in Homes”. TM:59 is a standardised approach to predicting overheating risk for residential building designs using computer modelling (dynamic simulation modelling).

The computer modelling incorporates the building layout with the proposed windows, window reveals, overhangs, glazing, doors and balconies. It should be noted that the ground floor accommodation had windows with restricted openings for security.

The TM:59 analysis was undertaken for the following scenarios incorporated within the proposed design:

- A) Natural / Passive Ventilation (inc Background Ventilation)
- B) As (A) with Brise Soleil on South Facing Windows
- C) As (A) with internal Blinds

In addition, two retrofit scenarios were modelled with weather data reflecting increasing temperatures from climate change:

- D) As (A) with Mechanical Purge Ventilation
- E) As (A) with Mechanical Purge Ventilation and Cooling

These additional scenarios consist of installing a ventilation unit that uses fans to increase the air flow through the dwelling (Scenario D) and with a cooling module installed on the ventilation unit (Scenario E). The cooling module reduces the temperature of the air supplied to the dwelling by a fixed amount.

The results of the analysis are summarised as follows:

- The development proposals performed well under the analysis, scenarios A-C, and passed TM:59 using natural ventilation in summer provided through openable windows.
- Climate change was considered using data for future 2050 and 2080 weather years, the dwellings generally performed well for scenarios A-C though the bedrooms did not quite meet the criteria.
- Scenario D, with mechanical purge ventilation, reduced the risk of overheating with the future weather years but was insufficient to totally eradicate the risk.
- Scenario E with mechanical purge ventilation and cooling, eliminated the risk of overheating for all weather years and is proposed as a future retro-fit action.

The communal corridors and entrance lobbies in the apartment blocks were also assessed and meet the requirements of TM:59 using natural ventilation.

1.0 INTRODUCTION

This report has been prepared by **FLATT** on behalf of Haringey Council to assess the risk of summertime overheating within the apartments at Watts Close, Haringey, London N15 5DW

Haringey Council recognises that overheating in residential accommodation is of concern in modern highly insulated and airtight buildings and the value of undertaking such studies to address overheating. The Council will own the overheating risk.

To assess the likelihood of overheating risk within the residential development the following assessment is considered :

- CIBSE Technical Memorandum TM:59 – Design Methodology for the Assessment of Overheating Risk in Homes.

TM:59 is essentially an updated version of TM:52 specifically for dwellings and is the stipulated assessment within the London Plan guidance.

These methodologies consider the effect of how occupants perceive indoor temperatures and provides limitations on exposure to higher temperatures under certain conditions.

This report records the outcome of the overheating analysis and summarises the results including confirming the glazing specification in terms of solar control and requirement for cooling.

This report includes the impact of future global climate change by considering the DSY2 & DSY3 weather files in addition to the DSY1. The files used are all 2020, High Emissions 50th Percentile (2020HE50%) as required by London Plan. The files are summarised below.

- DSY1: Moderately warm summer – Standard Test Criteria
- DSY2: Short, intense warm spell.
- DSY3: Long, less intense warm spell

1.1 Site Description

The site is located along the existing Watts Close, which currently houses existing prefabricated bungalow type accommodation. The proposed development consists of the following :-

Demolition of 11 existing bungalows and community building to deliver 18 new homes for council rent. The proposed development will comprise of six, two-storey family houses (three and four bedrooms) and 12 apartments (one and two bedrooms) in two, three-storey blocks including two wheelchair user dwellings. The proposals also make provision on-site for two wheelchair parking spaces, amenity and play space, landscaping and cycle and refuse/recycling storage.

The design of the building(s) respond to site and building orientation, the following points are noted :

- The layout and orientation of the buildings reflects the site plan with a North/South orientation.
- The walls thickness allows windows to have deep reveals, these coupled with the use of brise soleil on the South elevations provides some shading.
- The ground floors have less flexibility regarding natural ventilation as windows at this level will have restricted openings due to security issues.
- The apartment block corridors are to be naturally ventilated with a low level opening and openable rooflight above the stair core to control the overheating risk.

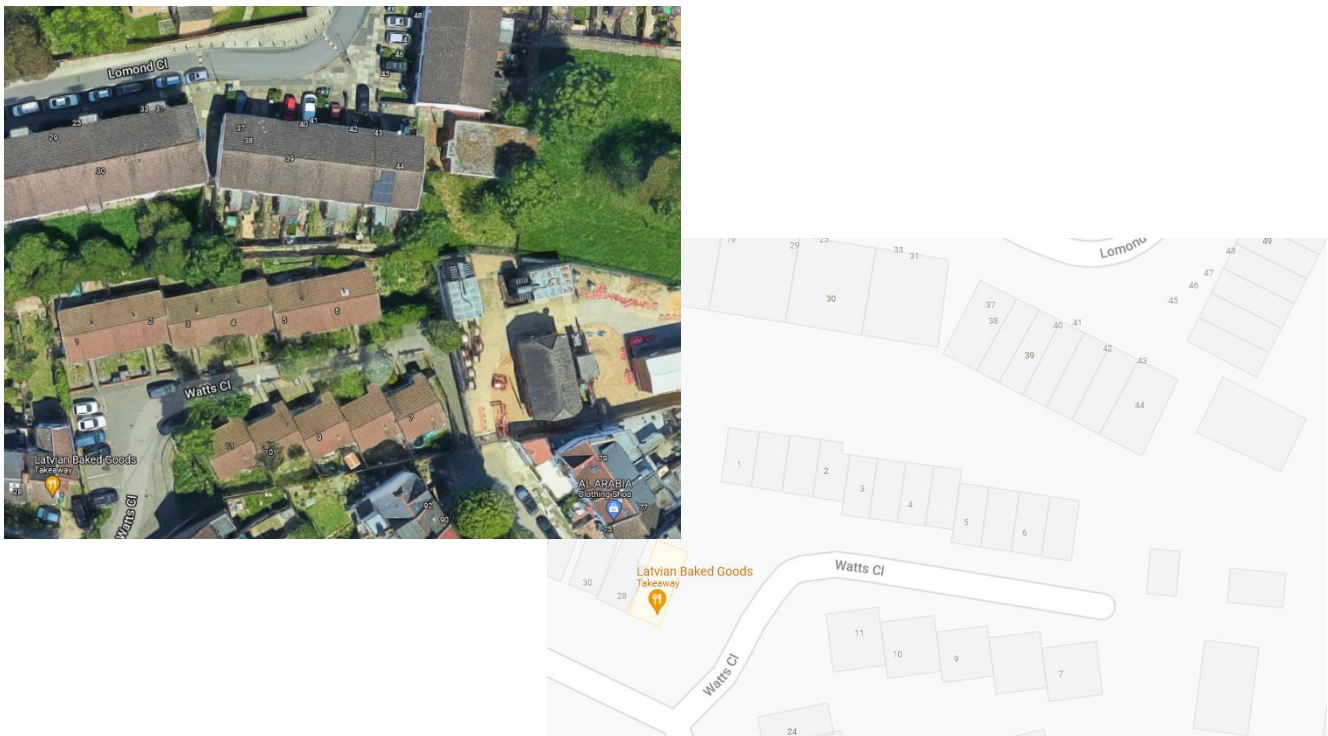


Figure 1. Watts Close - Site Location

1.2 Floor Plans

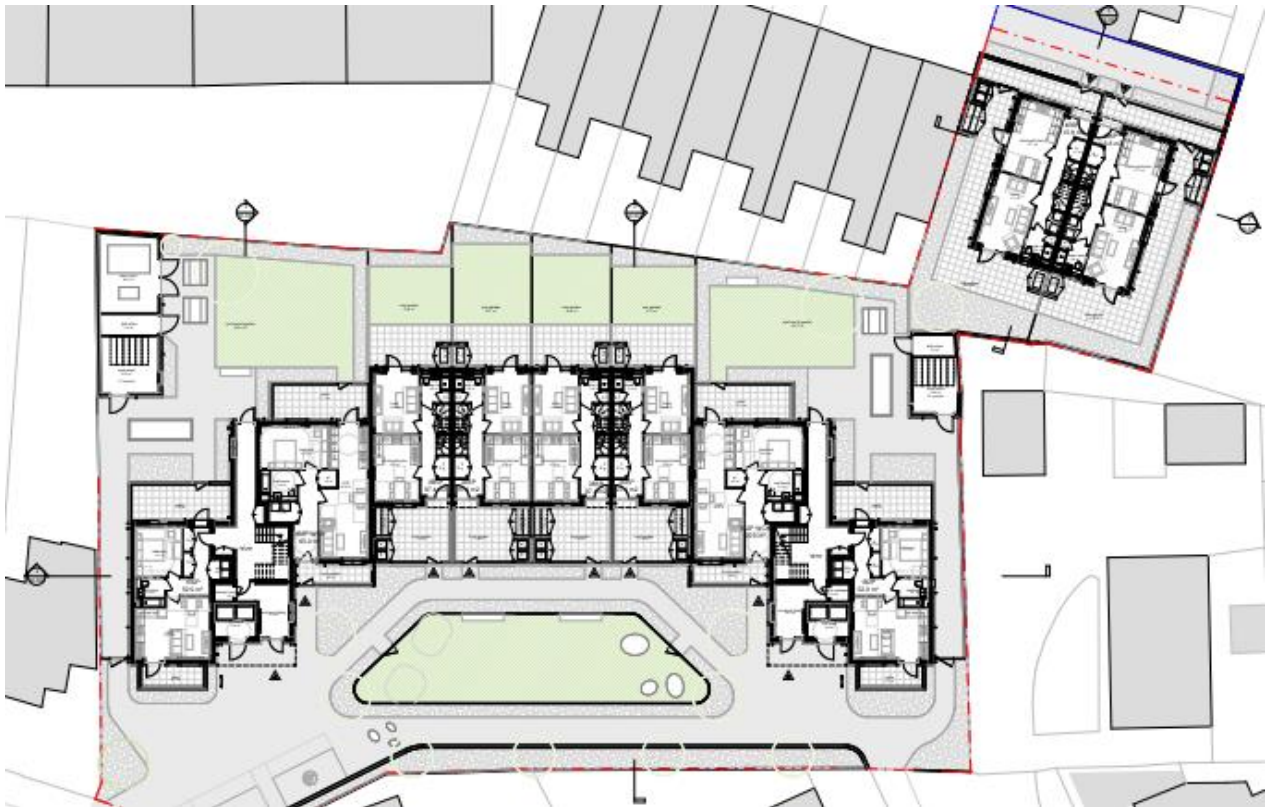


Figure 2. Ground Floor Layout

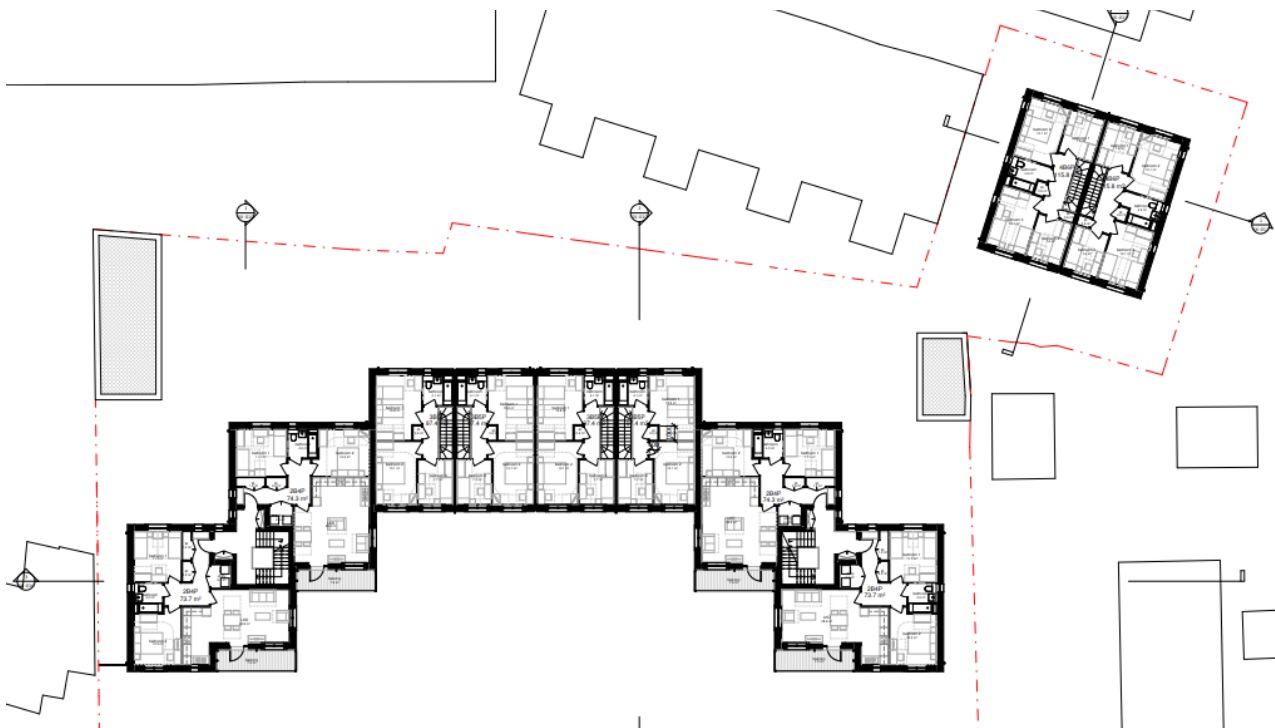


Figure 3. First Floor Layout

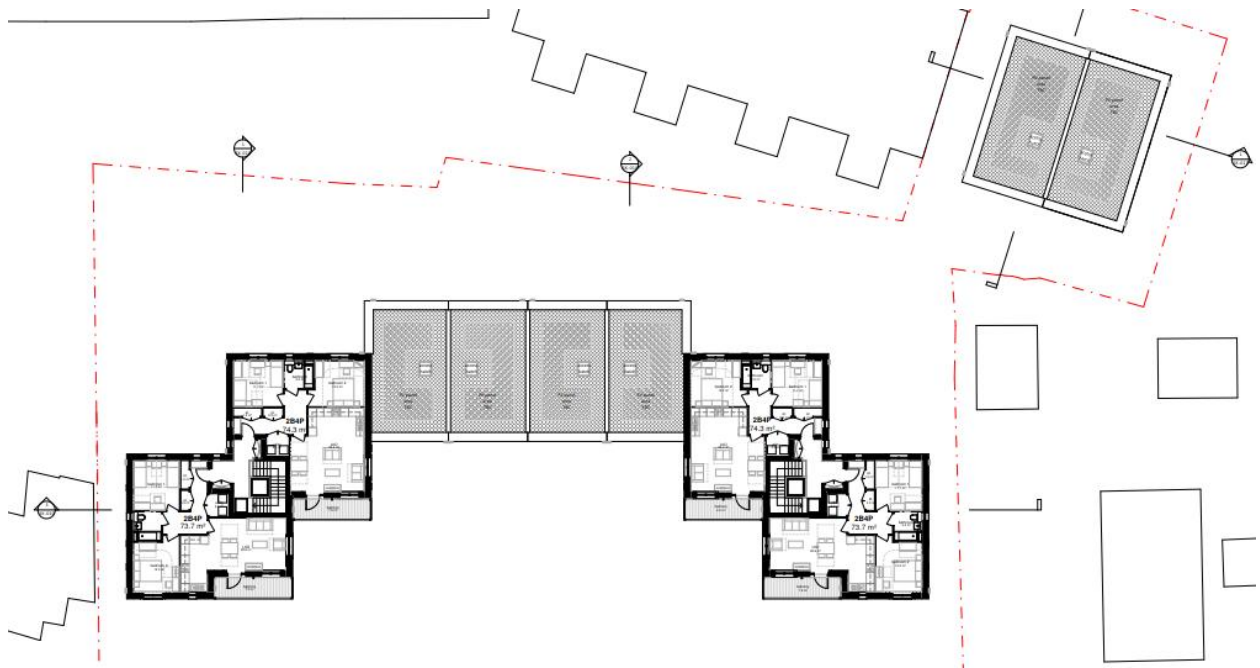


Figure 4. Second Floor Layout

1.2 Haringey Design Considerations

Haringey have advised the following :-

1.2.1 Haringey's Key Overheating Planning Application Requirements

Planning applications for residential development must submit the following information:

1. Submission of a Dynamic Thermal Modelling Assessment, in line with CIBSE TM59 with TM49 weather files.
2. Demonstrate the development has followed the London Plan's Cooling Hierarchy, providing justification where measures have not been found feasible.
3. Demonstrate the appropriate and robust inputs:
 - a. Occupancy and equipment heat loads in line with TM59
 - b. Representative number of dwellings across the development and common areas, modelling at least 50% rooms on the top floor, 75% of rooms with south or south-west aspect, rooms close to noise/air pollution or crime sources, and at least 15% in each building
 - c. Use of an urban dataset (City of London weather centre)
 - d. Construction fabric u-values and g-value(s) of proposed fenestration, air tightness and whether MVHR is proposed
 - e. Pipework heat losses within communal corridors and dwellings (see Appendix 6), outlining the flow temperatures, insulation thickness, efficiencies of pipe network, pipe diameters
 - f. Natural or mechanically ventilated dwellings
 - g. Percentage opening of windows and doors, and confirmation that occupants are not likely to close them for crime, air or noise pollution reasons.
4. Demonstrate which dwellings and rooms have been modelled within the development, providing a clear statement on the numbering system and floorplans and/or 3D visualisations (with north arrow) to show where these are located.
5. Model and report on ALL weather files and patterns to demonstrate a robust understanding on how the building may perform and what the overheating risk will be:
 - a. Mandatory compliance with Design Summer Year (DSY) 1 (2020s weather pattern, high emissions, 50% percentile)
 - b. Compliance with DSY 2 and 3 (2020s weather pattern, high emissions, 50% percentile) within the proposed development
 - c. Future compliance with DSY1 with the 2050s and 2080s future weather patterns (high emissions, 50% percentile) through a retrofit plan with measures that can be implemented
 - d. Good practice future compliance with DSY 2 and 3 with the 2050s and 2080s future weather patterns (high emissions, 50% percentile) that will help inform the retrofit plan.
6. Report results of the dynamic modelling in line with the TM59 compliance criteria, clearly setting out the baseline scenario and additional modelled scenarios to test mitigation measure(s) required to pass the overheating assessment.
 - a. Baseline scenario
 - b. Baseline scenario + mitigation measure 1
 - c. Baseline scenario + mitigation measure 1 + measure 2, etc.
 - d. Full results reported in a table that is colour coded and clearly sets out the maximum hours above Criteria A and B in order to pass the requirement, the result and whether that rooms passes or fails.

2.0 METHODOLOGY

A dynamic simulation thermal model of the entire development, which includes ALL apartments is created of the building using Virtual Environment (IES-VE) software. The version is VE2021.3.0.0, which was current at time of this report.

This approach provides a robust analysis with all floors being modelled as well as the adjacent existing blocks.

The thermal modelling is for the project as proposed and incorporates windows, window reveals, balcony doors and external shading from brise soleil and balcony structures.

Blinds within dwellings were included in the analysis, as per GLA guidance and TM:52/TM:59 methodology, as they are provided as part of the base build.

Natural ventilation paths are modelled by algorithms that control the window and balcony door openings where applicable. Within the dwelling, internal doorways between living spaces and bedrooms are incorporated to allow cross ventilation to occur between rooms. However, bedroom doors are only operable outside the TM59 designated occupied period. i.e., they are scheduled closed during occupancy (at night) as per TM:59 Para 3.3.

The assessment is undertaken in accordance with methodology and criteria contained within CIBSE TM59: Design Methodology for the Assessment of Overheating Risk in Homes (2017) using current Design Summer Year (London_LWC_2020High50.DSY1, 2 & 3) weather data. This provides a robust method of assessment and is in line with London Plan guidance, current 'industry' standards and best practice.

The software incorporates the TM52 Adaptive Comfort analysis tool to assess the overheating of buildings based on the criteria outlined in CIBSE Technical Memorandum TM:52 -2013. This is used to assess Criteria 1: Hours of Exceedance as per Chapter 4.2 Par (a) of TM:59 for Living rooms, kitchens and dining rooms (LKD).

The software also incorporates VistaPro, which permits range testing of variables. Such as Operative Temperatures in excess of 26°C between the hours of 10pm to 7am as per Chapter 4.2 Para (b) of TM:59 for bedrooms.

The following images are taken from the thermal models and demonstrate the buildings 'likeness' to the proposed building for construction and provide a visual indication of how the building is exposed to solar gain. Blue areas are the apartments, Magenta areas are adjacent apartments and green areas are local shading such as balconies.

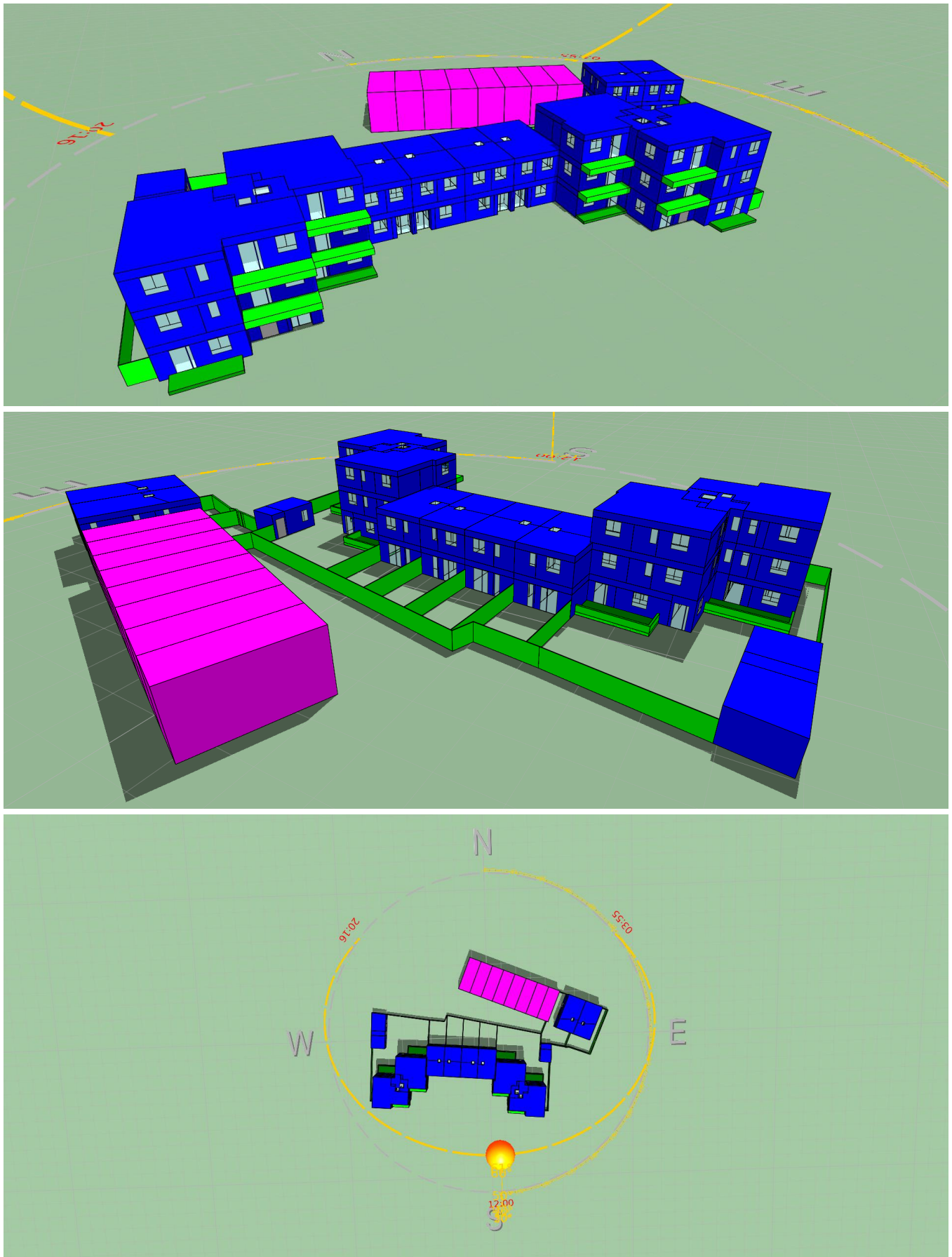


Figure 5. IES-VE Thermal Model

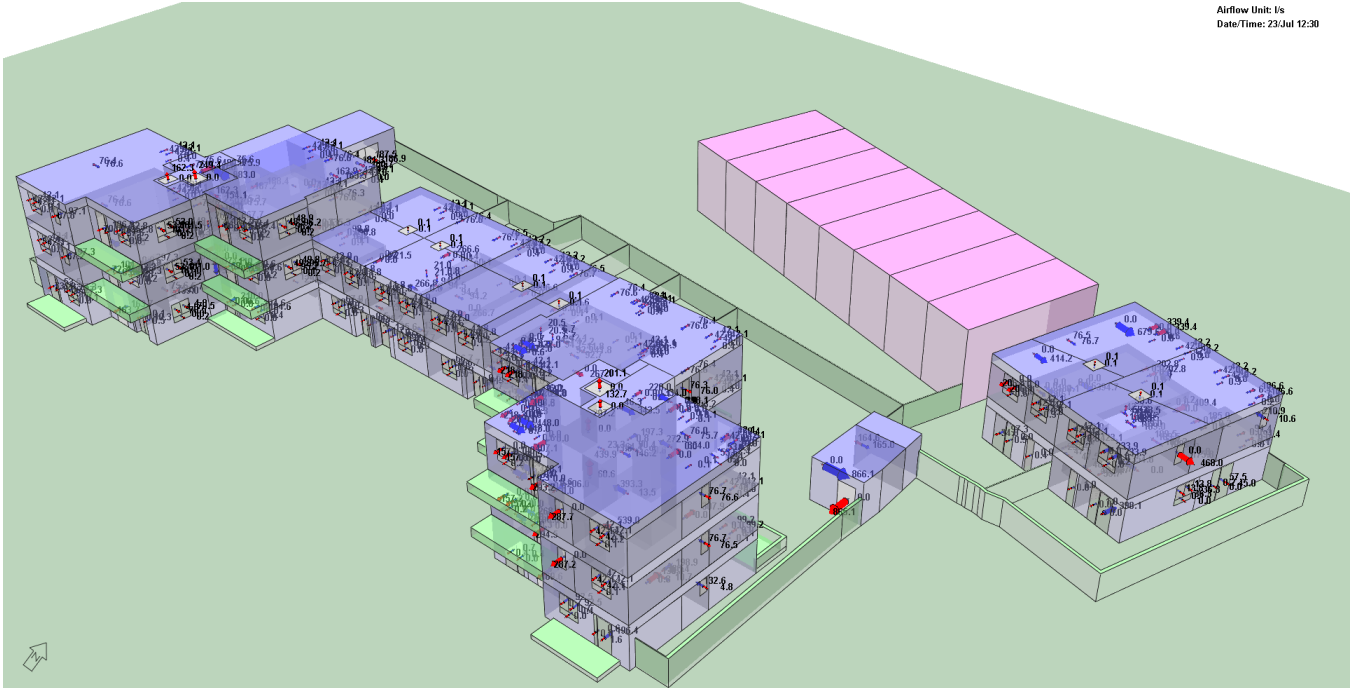


Figure 6. MacroFlo Natural Ventilation illustrating Airflows

2.1 TM:52 Adaptive Comfort Criteria

The following three criteria are used to assess the risk of overheating of buildings in the UK and Europe.

If a room or building fails any two of the three criteria it is classed as overheating and fails TM:52 as a consequence. TM:59 only uses Criterion 1 for the Living Rooms, Kitchens and Dining Rooms but applies a different data set for occupancy profiles and internal gains.

Criterion 1.

This sets a limit for the number of hours that the operative temperature can exceed the threshold comfort temperature (upper limit of the range of comfort temperature) by 1°K or more during the occupied hours of a typical non-heating season (1st May to 30th September).

Criterion 2.

This deals with the severity of overheating within any one day, which can be as important as its frequency, the level of which is a function of both temperature rise and its duration.

This criterion sets a daily limit for acceptability.

Criterion 3.

This sets an absolute maximum daily temperature for a room, beyond which the level of overheating is unacceptable.

Further information on these criteria can be found in TM52 – 2013, section 6.1.2.

2.1.1 Criterion 1 - Hours of Exceedance – For Living/Dining/Kitchen/Bedrooms only.

The number of hours during which the temperature difference (ΔT) is greater than or equal to one degree (°K), during the period May to September inclusive, this period shall not be more than 3% of occupied hours.

The ΔT is defined as operative temperature less the maximum acceptable temperature and is rounded to the nearest whole degree.

2.1.2 Criterion 2 - Daily Weighted Exceedance – Not Required for TM:59

To allow for the severity of overheating, the weighted exceedance shall be less than or equal to 6°K in any one day.

2.1.3 Criterion 3 - Upper Limit Temperature – Not Required for TM:59

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

2.2 TM:59 Criteria for Homes Predominantly Naturally Ventilated

Compliance is based on passing both of the following two criteria:

- a) 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 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 10 pm to 7 am shall not exceed 26 °C for more than 1% of annual hours. (Note: 1% of the annual hours between 22:00 and 07:00 for bedrooms is 32 hours, so 33 or more hours above 26 °C will be recorded as a fail).

Criteria 2 and 3 of CIBSE TM52 may not be met, but both (a) and (b) above must be passed for all relevant rooms.

2.2.1 Communal Corridors

Communal corridors are included in the analysis. If an operative temperature of 28 °C is exceeded for more than 3% of the total annual hours, then this would be identified as a significant risk.

2.3 TM:59 Internal Loads, Occupancy and Equipment Data Sets

TM:59 provides a schedule of room data sets for the residential accommodation. CIBSE technical memorandum recognises that NCM room templates, profiles and schedules may not be appropriate for all residential properties and has thus assigned a set of room data sets which more realistically represents domestic properties. All rooms have been assigned the appropriate room data set in accordance with Table 2 TM:59.

2.4 Design Summer Year (DSY) Weather File

It is a requirement of TM:59 that the most appropriate location file is used for the DSY 2020's High Emissions, 50% percentile scenario. The corresponding weather file applied is the DSY weather file is London_LWC_DSY1_2020High50.

Future climate change scenarios have been modelled using corresponding data for 2050 and 2080 weather years.

2.5 Building Classification

The following building classifications are stipulated with Table 2 CIBSE TM:52. These classifications determine the benchmark values within each criterion that the building must be seen to meet or better. Depending on the classification a greater or lesser benchmark is set with corresponding level of expectation.

Category	Explanation	Suggested Acceptable Range (°K)
Category I	High level of expectation only used for spaces occupied by very sensitive and fragile persons	2
Category II	Normal expectation (for new buildings and renovations)	3
Category III	A moderate expectation (used for existing buildings)	4

Figure 7. TM:52 Building Classification

In line with the recommendations within Table 2 CIBSE TM:52, the classification for this building has been applied as Category II.

2.6 Windows and Doors

Combined living room, dining room and kitchen (LDK's) tend to have a greater glazed area than bedrooms as well as an occupancy and load profile which presents a more onerous overheating risk when compared to bedrooms. LKD's are also principally occupied during the day when solar gain is stronger, therefore, the LDK's are subject to a greater overheating risk than bedrooms.

Bedrooms generally have smaller square meterage and internal doors are required to be closed at night thus overheating can also be problematic with the TM:59 imposed internal gains.

All ground floor apartments were simulated with restricted openings,

2.6.1 Window Openings / Shading dimensions

The opening areas for the windows are as architects drawings (entered via CAD file input).

Ground floor window openings restricted to no more than 10° during the day (min setting in software) and closed at night, controlled on temperature/excessive vent rate to imitate occupant use.

Upper floors windows open to max of 30° (within the software) during the day and night, controlled on temperature/excessive vent rate to imitate occupant use.

External shading is as per Architects drawing 20195-53-101P, see excerpt, with overall shade 565mm (approx. 215mm brick reveal, 350mm brise soleil projection, subject to architects final setting out). These are limited to the South facing elevations.

Internal blinds are proposed to be installed as part of the base build, the shading coefficient and short-wave radiant fraction used for analysis are 0.6 and 0.3 respectively,

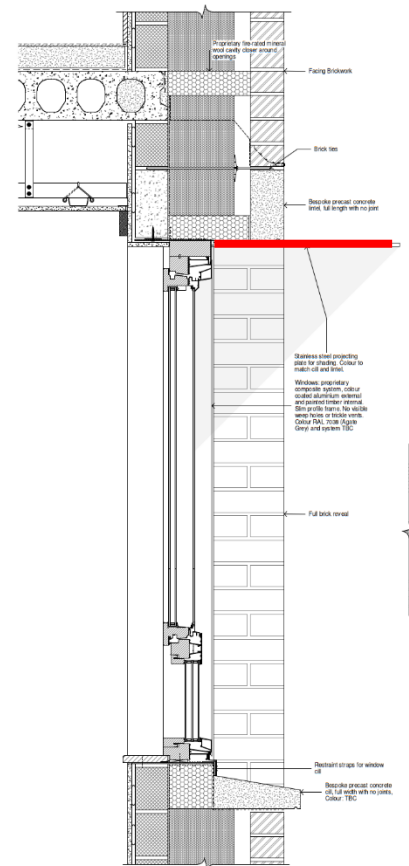


Figure 8. Window detail showing shading

2.7 Design Data

2.7.1 Building Fabric

Building Fabric	2013 Building Regs Maximum U-Values	2013 Building Regs Notional U-Values	Proposed U-Values
Windows	2.20 W/m ² °K	1.80 W/m ² °K	0.8 - 0.9 W/m ² °K
Rooflights	2.20 W/m ² °K	1.80 W/m ² °K	0.9 W/m ² °K
External Walls	0.35 W/m ² °K	0.26 W/m ² °K	0.15 W/m ² °K
Ground/Exposed Floors	0.25 W/m ² °K	0.22 W/m ² °K	0.10 W/m ² °K
Roof	0.25 W/m ² °K	0.18 W/m ² °K	0.12 W/m ² °K
Infiltration	2013 Building Regs Target	2013 Notional Building	Proposed
Air Tightness	10.0 m ³ /h/m ² @ 50Pa	3.0 m ³ /h/m ² @ 50Pa	1.0 m ³ /h/m ² @ 50Pa

2.7.2 Ventilation

Ventilation Options	
Fresh Air	Building Regulations ADF - Type 4 - MVHR
Purge Ventilation	Natural Ventilation via Windows

2.7.3 Glazing Specification

Glazing Type	Triple, Low-E Soft Coat 0.05
g Value	0.5 minimum
Frame Factor	0.85

2.7.4 Proposed Glazing Specification

IES-VE is very particular about glazing specification. A U-Value and g-value alone are insufficient to adequately model the glazing. However, pre-planning consent, the final glazing specification is not fully determined.

To facilitate the analysis glazing data is obtained from Pilkington which provides specific figures and data for the predetermined U-Value and g-value for the proposed glazing. In this manner the absorptances, reflectance's of each individual pane and of design data is obtained to maintain the accuracy of the analysis.

The final glazing specification will be determined at RIBA Stage 4.

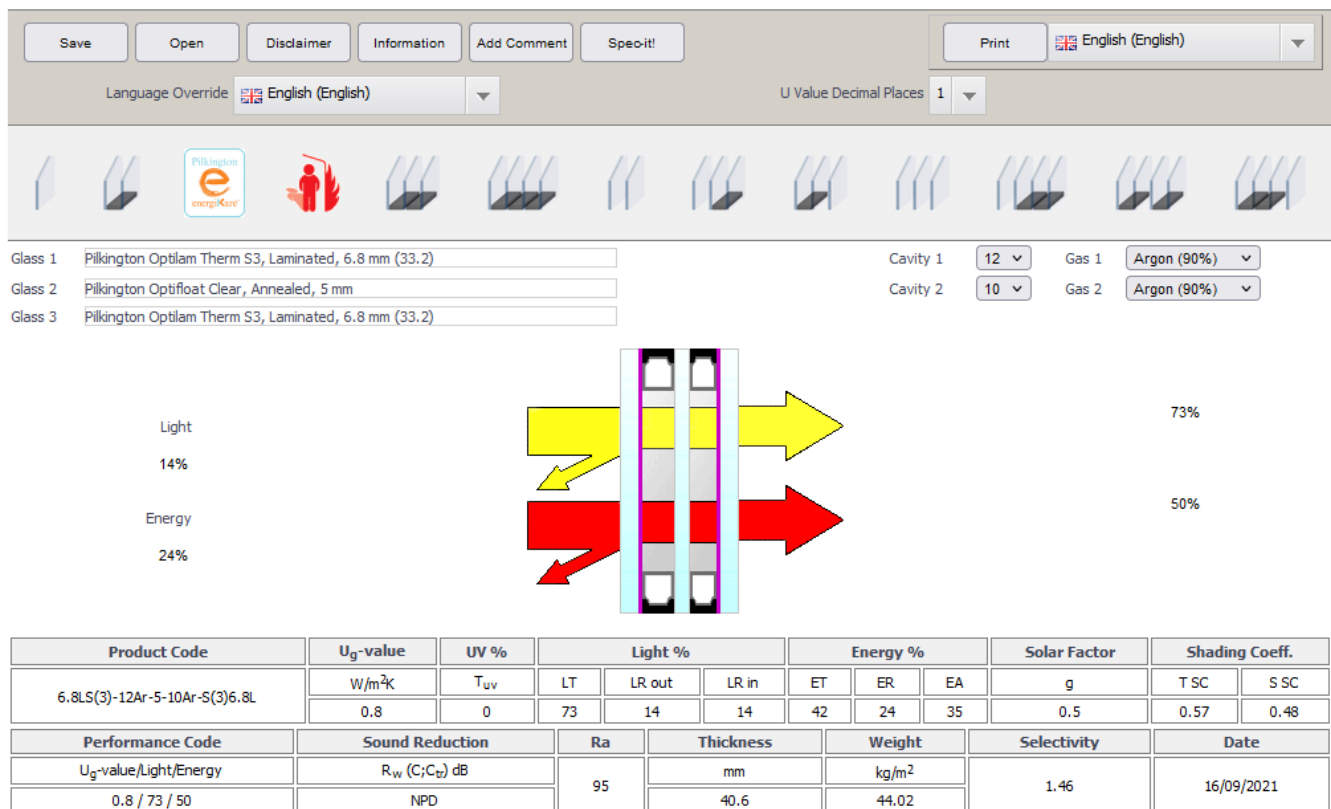


Figure 9. Pilkington Data for Proposed Glazing.

3.0 COOLING AND OVERHEATING

It is important to identify potential overheating risk in residential accommodation early on in the design process and then incorporate suitable passive measures within the building envelope and services design to mitigate overheating and reduce cooling demand in line with London Plan Policy SI 4.

This has been reviewed using the Good Homes Alliance overheating risk assessment tool, following the cooling hierarchy and the TM:59 analysis.

3.1 Good Homes Alliance - Overheating Risk Assessment

KEY FACTORS INCREASING THE LIKELIHOOD OF OVERHEATING				KEY FACTORS REDUCING THE LIKELIHOOD OF OVERHEATING			
Geographical and local context							
#1 Where is the scheme in the UK? See guidance for map	South east Northern England, Scotland & NI Rest of England and Wales	4 0 2	4	#8 Do the site surroundings feature significant blue/green infrastructure? Proximity to green spaces and large water bodies has beneficial effects on local temperatures; as guidance, this would require at least 50% of surroundings within a 100m radius to be blue/green, or a rural context	1	6	
#2 Is the site likely to see an Urban Heat Island effect? See guidance for details	Central London (see guidance) Grtr London, Manchester, B'ham Other cities, towns & dense sub-urban areas	3 2 1	2				
Site characteristics							
#3 Does the site have barriers to windows opening? - Noise/Acoustic risks - Poor air quality/smells e.g. near factory or car park or very busy road - Security risks/crime - Adjacent to heat rejection plant	Day - reasons to keep all windows closed Day - barriers some of the time, or for some windows e.g. on quiet side Night - reasons to keep all windows closed Night - bedroom windows OK to open, but other windows are likely to stay closed	8 4 8 4	4	#9 Are immediate surrounding surfaces in majority pale in colour, or blue/green? Lighter surfaces reflect more heat and absorb less so their temperatures remain lower; consider horizontal and vertical surfaces within 10m of the scheme	1	1	
				#10 Does the site have existing tall trees or buildings that will shade solar-exposed glazed areas? Shading onto east, south and west facing areas can reduce solar gains, but may also reduce daylight levels	1	1	
Scheme characteristics and dwelling design							
#4 Are the dwellings flats? Flats often combine a number of factors contributing to overheating risk e.g. dwelling size, heat gains from surrounding areas; other dense and enclosed dwellings may be similarly affected - see guidance for examples		3	3	#11 Do dwellings have high exposed thermal mass AND a means for secure and quiet night ventilation? Thermal mass can help slow down temperature rises, but it can also cause properties to be slower to cool, so needs to be used with care - see guidance	1	0	
#5 Does the scheme have community heating? i.e. with hot pipework operating during summer, especially in internal areas, leading to heat gains and higher temperatures		3	0	#12 Do floor-to-ceiling heights allow ceiling fans, now or in the future? Higher ceilings increase stratification and air movement, and offer the potential for ceiling fans	>2.8m and fan installed > 2.8m	2 1	1
Solar heat gains and ventilation							
#6 What is the estimated average glazing ratio for the dwellings? (as a proportion of the facade on solar-exposed areas i.e. orientations facing east, south, west, and anything in between). Higher proportions of glazing allow higher heat gains into the space	>65% >50% >35%	12 7 4	4	#13 Is there useful external shading? Shading should apply to solar exposed (E/S/W) glazing. It may include shading devices, balconies above, facade articulation etc. See guidance on "full" and "part". Scoring depends on glazing proportions as per #6	Full Part >65% >50% >35%	6 4 2	3 2 1
#7 Are the dwellings single aspect? Single aspect dwellings have all openings on the same facade. This reduces the potential for ventilation	Single aspect Dual aspect	3 0	0	#14 Do windows & openings support effective ventilation? Larger, effective and secure openings will help dissipate heat - see guidance	Openings compared to Part F purge rates = Part F +50% +100% Single aspect minimum required Dual aspect	3 2	4 3
TOTAL SCORE 13 = Sum of contributing factors: 21 minus Sum of mitigating factors: 8							
High 12 Medium 8 Low							
score >12: Incorporate design changes to reduce risk factors and increase mitigation factors AND Carry out a detailed assessment (e.g. dynamic modelling against CIBSE TM59) score between 8 and 12: Seek design changes to reduce risk factors and/or increase mitigation factors AND Carry out a detailed assessment (e.g. dynamic modelling against CIBSE TM59) score <8: Ensure the mitigating measures are retained, and that risk factors do not increase (e.g. in planning conditions)							

The assessment indicates that additional measures should be considered during the design process and the TM:59 analysis should be undertaken.

3.2 Cooling Hierarchy

The cooling hierarchy is set out within the GLA Energy Statement Guidance (Apr 2020) document, as follows:

1. **Reduce the amount of heat entering the building** through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure. It is also expected that external shading will form part of major proposals.
2. **Minimise internal heat generation** through energy efficient design: For example, heat distribution infrastructure within buildings should be designed to minimise pipe lengths, particularly lateral pipework in corridors of apartment blocks, and adopting pipe configurations which minimise heat loss e.g. twin pipes.
3. **Manage the heat within the building** through exposed internal thermal mass and high ceilings: Increasing the amount of exposed thermal mass can help to absorb excess heat within the building. Efficient thermal mass should be coupled with night time purge ventilation.
4. **Provide passive ventilation:** For example, through the use of openable windows, shallow floorplates, dual aspect units or designing in the 'stack effect' where possible.
5. **Provide mechanical ventilation:** Mechanical ventilation can be used to make use of 'free cooling' where the outside air temperature is below that in the building during summer months. This will require a by-pass on the heat recovery system for summer mode operation.
6. **Provide active cooling systems:** The increased use of air conditioning systems is generally not supported, as these have significant energy requirements and, under conventional operation, expel hot air, thereby adding to the urban heat island effect. However, once passive measures have been prioritised if there is still a need for active cooling systems, such as air conditioning systems, these should be designed in a very efficient way and should aim to reuse the waste heat they produce.

The following summarises how this development responds to the cooling hierarchy.

1. Reduce the amount of heat entering the building

The site will have a green planted area, with trees planted, directly outside the development on the South facing front elevation. To the rear the properties also have gardens.

The block massing of the main building(s) reflects the site plan such that a degree of self-shading is provided by the main block of buildings when the sun is in the East and West. This is achieved through the block articulation with the houses set back in relation to the apartments.

The semi-detached houses are shaded from the West by the adjacent existing buildings.

Glazing areas are modest with 'punch' windows providing some shading from the recess.

The front of the site is South facing, a degree of solar protection is provided to Ground and First Floor apartments from the balconies. The rear of the site, onto the gardens, is North facing where solar gains are small and glazing areas contribute a low risk of overheating.

The building fabric shall provide high thermal performance façades with U values and window solar control set at Passivhaus standards (refer to Energy Statement).

2. Minimise internal heat generation

The apartments shall have unitary exhaust air heat pumps located within each demise, thereby omitting the requirement for distribution pipework through common areas. The houses have an air source heat pump located in the gardens.

The use of MVHR ventilation systems means that there is a constant purging of heat, 24/7, from the space which will help alleviate heat build-up within the dwellings.

3. Manage the heat within the building

As a domestic premises plasterboard ceilings are proposed which creates a disconnect between the space and the structure to utilise the building thermal mass. However, this does allow the space to act as thermally lightweight allowing heat to be purged out of the space rapidly by the ventilation system and / or openable windows.

The MVHR ventilation system provides a means of background night-time purge ventilation to remove heat and prevent its build-up within the dwellings.

4. Provide passive ventilation:

Openable windows are provided for purge ventilation. Generally, cross-ventilation can be achieved during the day when internal doors can remain open under the conventions.

The apartment common area / staircase shall be naturally ventilated with purge ventilation achieved through a natural ventilation inlet at ground level and the use of the AOV over the staircase.

5. Provide mechanical ventilation:

The use of the MVHR ventilation system provides background mechanical ventilation. The type of equipment specified allows this to operate in summer without transfer of heat to the supply air to the space.

Where passive ventilation is insufficient coupled with background mechanical ventilation a 'mechanical purge ventilation system' shall be considered ventilating the dwelling at a rate of between 2-4 air changes per hour. Ventilation rates beyond this tend to have issues due to the physical dimensions of the system and controlling noise.

6. Provide active cooling systems:

If the passive and active measures outlined above fail to prevent overheating due to the constraints imposed on the development consideration shall be given to providing comfort cooling.

The preferred method of providing cooling would be to install a summer ventilation unit with integrated cooling. This unit will initially provide an enhanced ventilation rate before utilizing cooling to provide 'peak temperature lopping' of the supply air. In this way mechanical ventilation is maximised and cooling is provided in an efficient manner with minimal energy use rather by the installation of a full air conditioning system.

4.0 TM:59 OVERHEATING ANALYSIS RESULTS

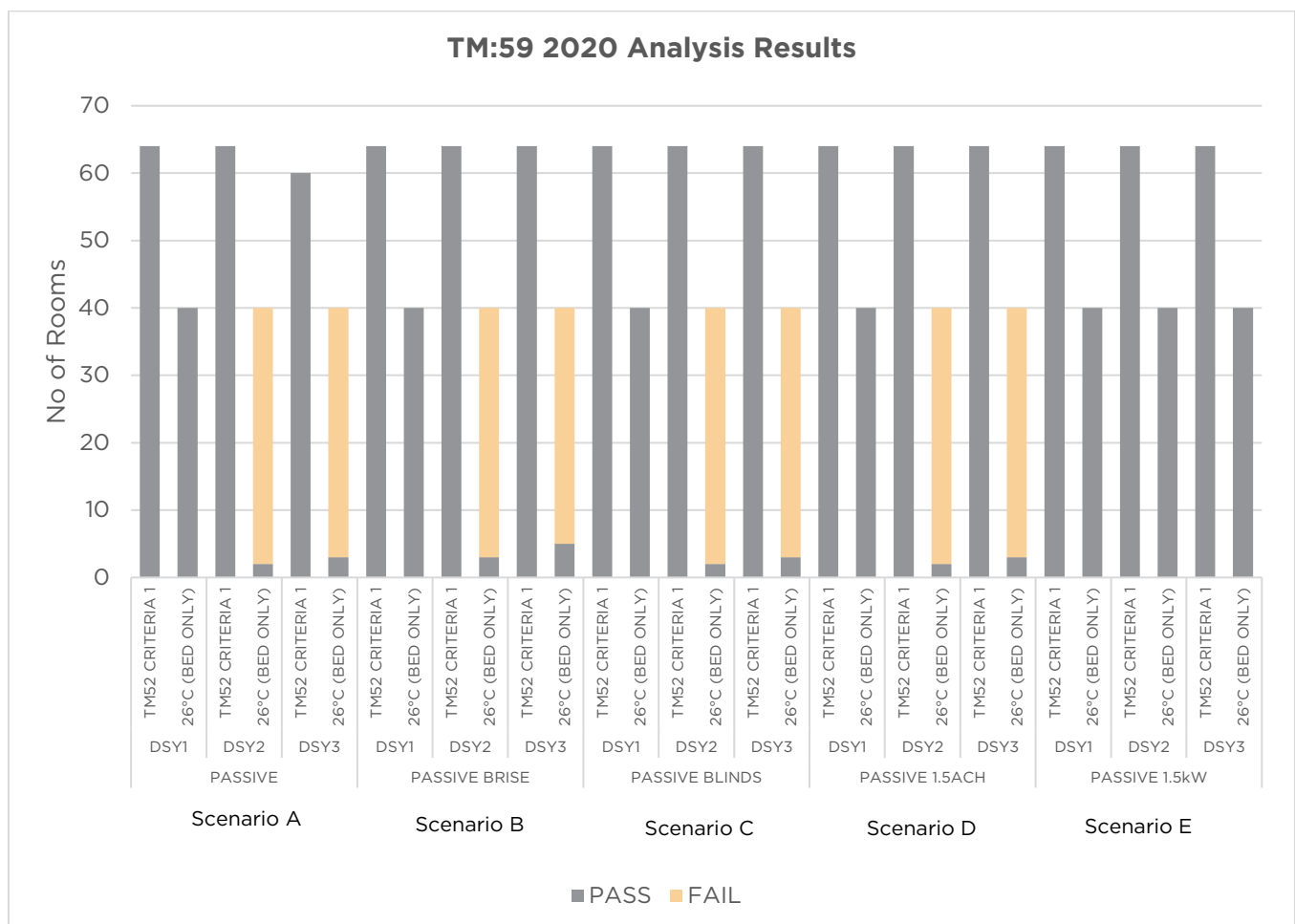
The TM:59 analysis has been carried out for the development, in accordance with the cooling hierarchy, for the following scenarios which are included within the proposed design:

- A) Natural / Passive Ventilation (inc Part F Min Vent Rate)
- B) As (A) with Brise Soleil on South Facing Windows
- C) As (A) with internal Blinds

In addition, two retrofit scenarios were modelled with weather data reflecting increasing temperatures from climate change:

- D) As (A) with Mechanical Purge Ventilation
- E) As (A) with Mechanical Purge Ventilation and Cooling

The following graph represents the Pass/Fail for each of the above scenarios using the DSY1, 2 and 3 weather files for LWC_2020_HE_50%.



The above graph indicates the following:

- The DSY1 analysis is passed for all scenarios, therefore the requirements of TM:59 are met.
- The DSY2 analysis passes the TM:52 criterion 1 test for all scenarios.
- The DSY2 analysis for the TM:59 test (bedrooms) generally fails the analysis for all but a few bedrooms unless the cooling is applied.
- The DSY3 analysis passes the TM:52 criterion 1 test for all scenarios.
- The DSY3 analysis for the bedrooms generally fails the analysis for all but a few rooms unless the cooling is applied.

Below is a summary of the average fail rate (% or annual hours) of all the rooms tested. There are small differences in the results unless the purge ventilation and cooling are applied.

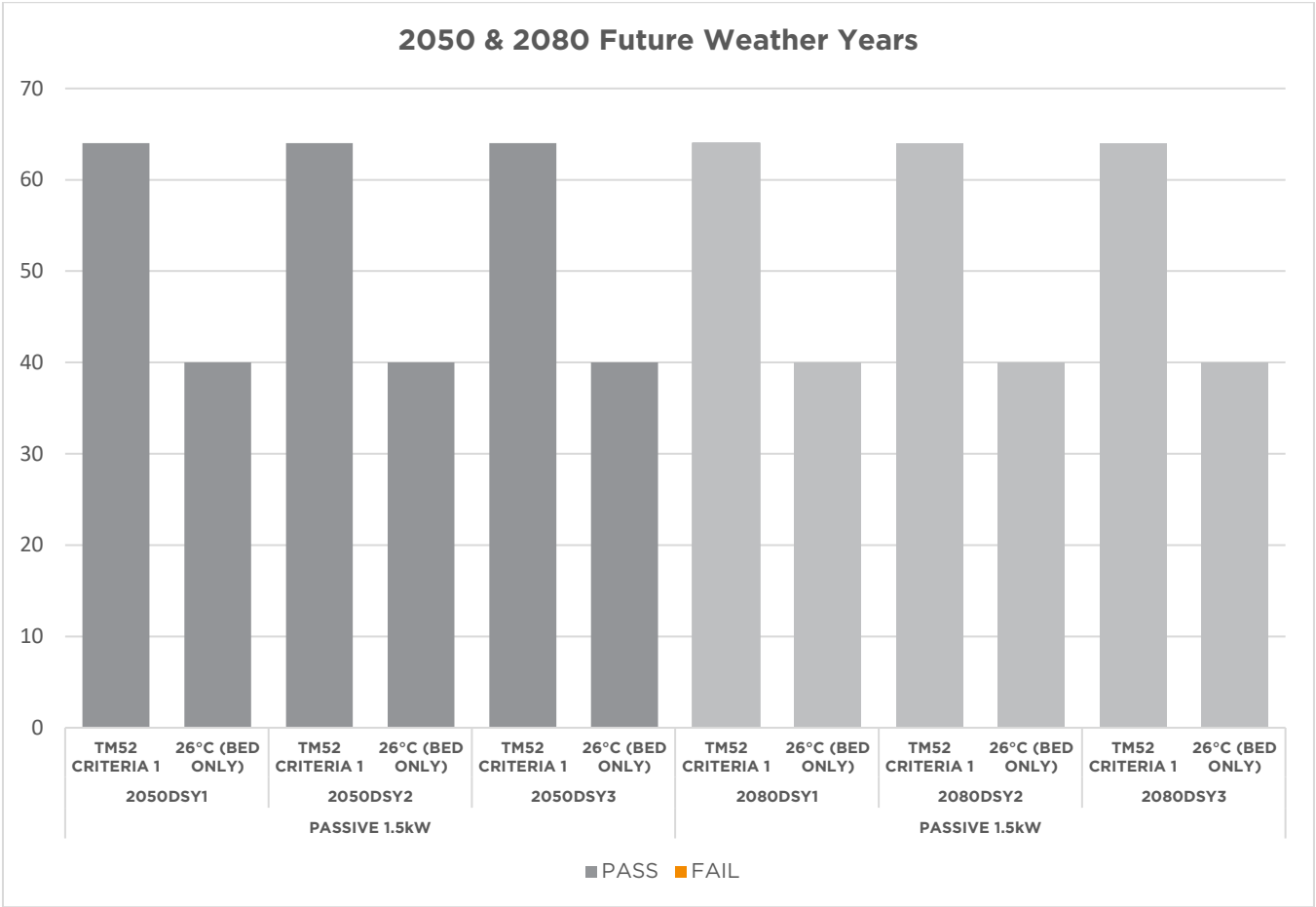
ANALYSIS	WEATHER FILE	TM:59 TEST CRITERIA	AVERAGE	
PASSIVE	DSY1	TM52 CRITERIA 1	0.02	%
		TM59 26°C (BED ONLY)	14	annual hrs
	DSY2	TM52 CRITERIA 1	0.52	%
		TM59 26°C (BED ONLY)	48	annual hrs
	DSY3	TM52 CRITERIA 1	0.44	%
		TM59 26°C (BED ONLY)	41	annual hrs
PASSIVE BRISE	DSY1	TM52 CRITERIA 1	0	%
		TM59 26°C (BED ONLY)	13	annual hrs
	DSY2	TM52 CRITERIA 1	0.29	%
		TM59 26°C (BED ONLY)	45	annual hrs
	DSY3	TM52 CRITERIA 1	0.23	%
		TM59 26°C (BED ONLY)	38	annual hrs
PASSIVE BLINDS	DSY1	TM52 CRITERIA 1	0.02	%
		TM59 26°C (BED ONLY)	14	annual hrs
	DSY2	TM52 CRITERIA 1	0.52	%
		TM59 26°C (BED ONLY)	48	annual hrs
	DSY3	TM52 CRITERIA 1	0.44	%
		TM59 26°C (BED ONLY)	41	annual hrs
PASSIVE 1.5ACH	DSY1	TM52 CRITERIA 1	0.05	%
		TM59 26°C (BED ONLY)	14	annual hrs
	DSY2	TM52 CRITERIA 1	0.80	%
		TM59 26°C (BED ONLY)	45	annual hrs
	DSY3	TM52 CRITERIA 1	0.68	%
		TM59 26°C (BED ONLY)	40	annual hrs
PASSIVE 1.5kW	DSY1	TM52 CRITERIA 1	0	%
		TM59 26°C (BED ONLY)	0	annual hrs
	DSY2	TM52 CRITERIA 1	0	%
		TM59 26°C (BED ONLY)	0	annual hrs
	DSY3	TM52 CRITERIA 1	0	%
		TM59 26°C (BED ONLY)	0	annual hrs

The above results indicate that for DSY1 all rooms comfortably 'Pass' the TM:52 Criterion 1 test, as well below 3%, and also the TM:59 test for the bedrooms, as well below 32 hour target. Therefore the overall requirements of TM:59 are met.

With regard to DSY2 and 3, all rooms comfortably 'Pass' the TM:52 Criterion 1 test, as well below 3%. However, most bedrooms fail the TM:59 aspect of the analysis but only by a very small amount where they exceed the 32 hour target.

All rooms pass all aspects of the analysis once the cooling is applied.

The inclusion of internal blinds showed little benefit in terms of overheating as the solar gain energy has already entered the space, warm the blind up which re-radiates that energy into the space. The provision of cooling is proposed as a retrofit option. Under normal conditions, the unit can provide increased natural ventilation during mid-season at circa 1.5 air changes hour. During peak summer condition, the unit can automatically switch to provide cooled fresh air to reduce the room temperatures.



The above graph indicates that all rooms pass the analysis for the future 2050 and 2080 weather years with the cooling applied.

5.0 ANALYSIS RESULTS - COMMUNAL CORRIDORS

5.1 Communal Corridors

The communal corridors are naturally ventilated and are required to maintain an operative temperature <28°C for 3% of the annual hours. This equates to <263hrs/year.

5.1.1 DSY1 Weather File - Corridors

Location	Operative temperature (°C) - Hrs > 28.00
000/COMM HALL	0
000/COMM HALL	0
000/COMM HALL	0
000/COMM HALL	0
000/COMM HALL	0
000/COMM HALL	0
000/COMM HALL	0
000/ENT LOBBY	0
000/ENT LOBBY	0

5.1.2 DSY2 Weather File - Corridors

Location	Operative temperature (°C) - Hrs > 28.00
000/COMM HALL	24
000/COMM HALL	21
000/COMM HALL	29
000/COMM HALL	24
000/COMM HALL	23
000/COMM HALL	22
000/COMM HALL	22
000/ENT LOBBY	39
000/ENT LOBBY	22

5.1.3 DSY3 Weather File - Corridors

Location	Operative temperature (°C) - Hrs > 28.00
000/COMM HALL	25
000/COMM HALL	19
000/COMM HALL	27
000/COMM HALL	15
000/COMM HALL	21
000/COMM HALL	21
000/ENT LOBBY	34
000/ENT LOBBY	15

The above table indicates that all communal corridors PASS the DSY1, DSY2 and DSY3 TM:59 analysis.

6.0 CONCLUSION

The design proposals address the issues raised in the cooling hierarchy relating to controlling heat gain by incorporating external shading, modest glazing areas, high performance building envelope, soft landscaping and trees all being provided.

Passive purge ventilation in summer is provided through openable windows. This is enhanced by the use of the mechanical ventilation systems (MVHR) providing the Building Regulation compliant background ventilation.

The TM:59 analysis was undertaken for the following scenarios incorporated within the proposed design:

- A) Natural / Passive Ventilation (inc Background Ventilation)
- B) As (A) with Brise Soleil on South Facing Windows
- C) As (A) with internal Blinds

In addition, two retrofit scenarios were modelled with weather data reflecting increasing temperatures from climate change:

- D) As (A) with Mechanical Purge Ventilation
- E) As (A) with Mechanical Purge Ventilation and Cooling

The results of the analysis indicate the following:

Scenario's A - D, all rooms met the requirements of TM:59 under the 2020 DSY1 weather file, therefore the analysis requirements are met. Under the DSY 2 & 3 the bedrooms show a marginal failure.

These scenarios show similar results as the building design moderates the solar gains and the internal gains become dominant.

Scenario E, with the cooling applied, passes the TM:59 analysis for DSY1, 2 and 3. Additionally, using 2050 & 2080 weather files all rooms Pass all 3 DSY tests.

Based on the overheating period from the analysis, indicating when the cooling unit would be running, it is anticipated that the additional running costs associated with Scenario E would be between £20-55p.a. depending on occupant use and flat size/orientation etc.

The communal corridors and entrance lobbies all met the requirements of TM:59 under all 3 2020 weather files.

APPENDIX A

Design Criteria

IES-VE Design Criteria and Input Data

Data:			
Building category:	Category II (new builds.)		
Weather file:	London_LWC_DSY1_2020High50.epw		
Days data=	364	01-Jan	30-Dec
Days (summer)=	153	01-May	30-Sep
Data OK?	OK		Full summer

- Occupancy -
 - As per TM:59 Table 2 (Inc corrigenda)
- Lighting -
 - As per TM:59 Table 2 (Inc corrigenda)
- Small Power -
 - As per TM:59 Table 2 (Inc corrigenda)
- Infiltration - 0.25ACH constant infiltration rate
- Ventilation -
 - Bedrooms
 - 8l/s Mechanical and natural ventilation via openable windows
 - Living/Dining/Kitchen Areas
 - 13l/s Mechanical and natural ventilation via openable windows
- Weather File -
 - London_LWC_DSY1_2020High50.epw
 - London_LWC_DSY2_2020High50.epw
 - London_LWC_DSY3_2020High50.epw
 - London_LWC_DSY1_2050High50.epw
 - London_LWC_DSY2_2050High50.epw
 - London_LWC_DSY3_2050High50.epw
 - London_LWC_DSY1_2080High50.epw
 - London_LWC_DSY2_2080High50.epw
 - London_LWC_DSY3_2080High50.epw

APPENDIX B

Summer Ventilation & Cooling Unit Specification

always the
best climate

Zehnder ComfoCool Q600 with ComfoAir Q600

The Zehnder ComfoCool Q600 is an air temperation device designed to help reduce the risk of overheating in homes. It combines with the ComfoAir Q600 and compliments its features to ensure it automatically activates and deactivates to provide a comfortable, healthy and energy-efficient indoor climate.



GCH / Radio Frequency



ComfoSense C67



ComfoSwitch C67

Zehnder ComfoControl
App

Key Features

ComfoCool Q

- 1.5kW cooling capacity.
- Fully automatic activation of ComfoCool and increased ventilation rate in summer, with automatic disabling of the unit during winter months without the need for user intervention.
- Easy and space-saving installation of left or right handed units directly on top of the Zehnder ComfoAir Q600.
- No external device required, just utilise the ventilation units ductwork.
- Filtered fresh supply air, not recycled stale air, using ISO Coarse >65% (G4) as standard with the option to upgrade to ISO ePM1 >55% (F7).
- Over 4000 units sold and successfully installed world wide.
- Integral sensor for activation based on whole house internal temperature, no risk of false readings due to external sensors cited near appliances, radiators or in direct sunlight.
- Simple maintenance only once every 4 years.
- Front access for ease of service/maintenance or in situ end of life replacement.
- Controlled via the CAQ600's variety of controller options including ComfoSense C, KNX or ComfoControl app for IOS or Android.

ComfoAir Q

- World class 96% efficiency.
- 100% full and filtered modulating summer bypass.
- Left or right hand configuration through software alone, no mechanical alteration required.
- Commissioning wizard for a quick and simple set-up process.
- Flow control to maintain commissioned flow rates.
- Adaptive comfort technology.
- Automatic passive temperature boost in summer.
- Humidity boost continuously monitors the humidity level within the home and looks for a man-made spike before boosting the unit, irrespective of distance or dilution.
- Tool free filter access.
- ISO ePM1 >55% (F7) filter option.
- App for installer and end user option.
- Wireless commissioning option.
- Remote access option.
- KNX compatibility option.
- 0-10V input option.
- Internal pre-heater option.
- Post heater control option.
- Enthalpy cube option.
- Passive House certified.

APPENDIX C

TM:59 Raw Data

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY1_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be conducted for occupied and/or "available hours".
 Use of educational NCM profiles may be seen as inappropriate due to prolonged unoccupied periods during summer months.
 See Section 6.1.2 (a) of TM52 for further information.

Passed:

Room Name	64 rooms: Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing	PASS MARK
001/1B2P/BED	100	0	0	0	-	3
001/1B2P/LDK	100	0	0	0	-	3
002/1B2P/BED	100	0	0	0	-	3
002/1B2P/LDK	100	0	0	0	-	3
003/3B5P/BED1	100	0	0	0	-	3
003/3B5P/BED2	100	0	0	0	-	3
003/3B5P/BED3	100	0.1	2	1	-	3
003/3B5P/DINKIT	100	0	0	0	-	3
003/3B5P/LIV	100	0	0	0	-	3
004/3B5P/BED1	100	0	0	0	-	3
004/3B5P/BED2	100	0	0	0	-	3
004/3B5P/BED3	100	0.2	6	1	-	3
004/3B5P/DINKIT	100	0	0	0	-	3
004/3B5P/LIV	100	0	0	0	-	3
005/3B5P/BED1	100	0	0	0	-	3
005/3B5P/BED2	100	0	0	0	-	3
005/3B5P/BED3	100	0.2	6	1	-	3
005/3B5P/DINKIT	100	0	0	0	-	3
005/3B5P/LIV	100	0	0	0	-	3
006/3B5P/BED1	100	0	0	0	-	3
006/3B5P/BED2	100	0	0	0	-	3
006/3B5P/BED3	100	0.1	2	1	-	3
006/3B5P/DINKIT	100	0	0	0	-	3
006/3B5P/LIV	100	0	0	0	-	3
007/1B2P/BED	100	0	0	0	-	3
007/1B2P/LDK	100	0	0	0	-	3
008/1B2P/BED	100	0	0	0	-	3
008/1B2P/LDK	100	0	0	0	-	3
009/4B6P/BED1	100	0.1	3	1	-	3
009/4B6P/BED2	100	0	0	0	-	3
009/4B6P/BED3	100	0	0	0	-	3
009/4B6P/BED4	100	0.1	5	1	-	3
009/4B6P/DINKIT	100	0	0	0	-	3
009/4B6P/LIV	100	0	0	0	-	3
010/4B6P/BED1	100	0.1	3	1	-	3
010/4B6P/BED2	100	0	0	0	-	3
010/4B6P/BED3	100	0	0	0	-	3
010/4B6P/BED4	100	0.2	6	1	-	3
010/4B6P/DINKIT	100	0	0	0	-	3
010/4B6P/LIV	100	0	0	0	-	3
011/2B4P/BED1	100	0	0	0	-	3
011/2B4P/BED2	100	0	0	0	-	3
011/2B4P/LDK	100	0	0	0	-	3
012/2B4P/BED1	100	0	0	0	-	3
012/2B4P/BED2	100	0	0	0	-	3
012/2B4P/LDK	100	0	0	0	-	3
013/2B4P/BED1	100	0	0	0	-	3
013/2B4P/BED2	100	0	0	0	-	3
013/2B4P/LDK	100	0	0	0	-	3
014/2B4P/BED1	100	0	0	0	-	3
014/2B4P/BED2	100	0	0	0	-	3
014/2B4P/LDK	100	0	0	0	-	3
015/2B4P/BED1	100	0	0	0	-	3
015/2B4P/BED2	100	0	0	0	-	3
015/2B4P/LDK	100	0	0	0	-	3
016/2B4P/BED1	100	0	0	0	-	3
016/2B4P/BED2	100	0	0	0	-	3
016/2B4P/LDK	100	0	0	0	-	3
017/2B4P/BED1	100	0	0	0	-	3
017/2B4P/BED2	100	0	0	0	-	3
017/2B4P/LDK	100	0	0	0	-	3
018/2B4P/BED1	100	0	0	0	-	3
018/2B4P/BED2	100	0	0	0	-	3
018/2B4P/LDK	100	0	0	0	-	3

Failed: 0 rooms:

Note: A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling

i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does
 not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY2_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should
 Use of educational NCM profiles may be seen as inappropriate due to
 See Section 6.1.2 (a) of TM52 for further information.

Passed: 64 rooms:

Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0.4	7	1	2
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0.1	1	1	-
003/3B5P/BED1	0000005A	100	0.2	7	1	2
003/3B5P/BED2	0000005B	100	0.7	16	2	2
003/3B5P/BED3	0000005C	100	1.1	24	3	2
003/3B5P/DINKIT	0000000D	100	0.7	10	2	2
003/3B5P/LIV	0000000C	100	0.8	12	2	2
004/3B5P/BED1	62	100	0.6	14	2	2
004/3B5P/BED2	63	100	1	21	3	2
004/3B5P/BED3	64	100	1.1	26	4	2
004/3B5P/DINKIT	19	100	1.2	14	2	2
004/3B5P/LIV	18	100	1.6	18	3	2
005/3B5P/BED1	69	100	0.6	14	2	2
005/3B5P/BED2	0000006A	100	1	21	3	2
005/3B5P/BED3	0000006B	100	1.1	26	4	2
005/3B5P/DINKIT	0000001A	100	1.2	14	2	2
005/3B5P/LIV	0000001B	100	1.6	18	3	2
006/3B5P/BED1	71	100	0.2	6	1	-
006/3B5P/BED2	70	100	0.6	14	2	2
006/3B5P/BED3	0000006F	100	1	22	3	2
006/3B5P/DINKIT	27	100	0.6	10	2	2
006/3B5P/LIV	26	100	0.8	12	2	2
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0.1	1	1	-
008/1B2P/BED	31	100	0.1	2	1	-
008/1B2P/LDK	30	100	0.6	11	2	2
009/4B6P/BED1	76	100	0.9	20	3	2
009/4B6P/BED2	77	100	0.3	10	2	2
009/4B6P/BED3	78	100	0.6	14	2	2
009/4B6P/BED4	79	100	1	23	4	2
009/4B6P/DINKIT	0000003D	100	0.4	6	1	-
009/4B6P/LIV	0000003C	100	1.4	17	3	2
010/4B6P/BED1	1000026	100	0.9	20	3	2
010/4B6P/BED2	1000027	100	0.3	13	2	2
010/4B6P/BED3	1000028	100	0.6	15	2	2
010/4B6P/BED4	1000029	100	1	25	4	2
010/4B6P/DINKIT	1000006	100	0.7	15	2	2
010/4B6P/LIV	1000005	100	1.6	21	3	2
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0.2	4	1	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0.1	2	1	-
012/2B4P/LDK	1000010	100	0.1	2	1	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0.1	2	1	-
013/2B4P/LDK	1000016	100	0.1	2	1	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0.1	2	1	-
014/2B4P/LDK	0100001F	100	0.1	2	1	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0.2	8	1	2
015/2B4P/LDK	1000031	100	0.7	14	2	2
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0.1	5	1	-
016/2B4P/LDK	1000038	100	0.6	12	2	2
017/2B4P/BED1	0100003B	100	0	1	1	-
017/2B4P/BED2	0100003C	100	0.2	6	1	-
017/2B4P/LDK	0100003A	100	0.7	12	2	2
018/2B4P/BED1	1000044	100	0.1	4	1	-
018/2B4P/BED2	1000045	100	0.2	9	2	2
018/2B4P/LDK	1000043	100	0.9	14	2	2

Failed: 0 rooms:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling

Note:

i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does
 not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY3_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:						
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top- Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing	
001/1B2P/BED	2	100	0	0	0	-	
001/1B2P/LDK	0	100	0	0	0	-	
002/1B2P/BED	7	100	0	0	0	-	
002/1B2P/LDK	5	100	0	0	0	-	
003/3B5P/BED1	0000005A	100	0.1	5	1	-	
003/3B5P/BED2	0000005B	100	0.7	9	1		2
003/3B5P/BED3	0000005C	100	1	18	2		2
003/3B5P/DINKIT	0000000D	100	0.3	2	1	-	
003/3B5P/LIV	0000000C	100	0.6	6	1	-	
004/3B5P/BED1	62	100	0.7	9	1		2
004/3B5P/BED2	63	100	1	14	2		2
004/3B5P/BED3	64	100	1.2	20	2		2
004/3B5P/DINKIT	19	100	0.7	6	1	-	
004/3B5P/LIV	18	100	1.3	10	2		2
005/3B5P/BED1	69	100	0.7	9	1		2
005/3B5P/BED2	0000006A	100	1	14	2		2
005/3B5P/BED3	0000006B	100	1.2	20	2		2
005/3B5P/DINKIT	0000001A	100	0.7	6	1	-	
005/3B5P/LIV	0000001B	100	1.3	10	2		2
006/3B5P/BED1	71	100	0.1	5	1	-	
006/3B5P/BED2	70	100	0.6	8	1		2
006/3B5P/BED3	0000006F	100	1	18	2		2
006/3B5P/DINKIT	27	100	0.2	2	1	-	
006/3B5P/LIV	26	100	0.6	6	1	-	
007/1B2P/BED	29	100	0	0	0	-	
007/1B2P/LDK	28	100	0	0	0	-	
008/1B2P/BED	31	100	0	0	0	-	
008/1B2P/LDK	30	100	0.2	2	1	-	
009/4B6P/BED1	76	100	1	18	2		2
009/4B6P/BED2	77	100	0.4	6	1	-	
009/4B6P/BED3	78	100	0.7	9	1		2
009/4B6P/BED4	79	100	1.1	19	2		2
009/4B6P/DINKIT	0000003D	100	0.3	2	1	-	
009/4B6P/LIV	0000003C	100	1.2	8	1		2
010/4B6P/BED1	1000026	100	1	18	2		2
010/4B6P/BED2	1000027	100	0.5	8	1		2
010/4B6P/BED3	1000028	100	0.8	9	1		2
010/4B6P/BED4	1000029	100	1.2	19	2		2
010/4B6P/DINKIT	1000006	100	1	7	1		2
010/4B6P/LIV	1000005	100	1.6	14	2		2
011/2B4P/BED1	1000009	100	0	0	0	-	
011/2B4P/BED2	0100000A	100	0	0	0	-	
011/2B4P/LDK	1000008	100	0	0	0	-	
012/2B4P/BED1	1000011	100	0	0	0	-	
012/2B4P/BED2	1000012	100	0	0	0	-	
012/2B4P/LDK	1000010	100	0	0	0	-	
013/2B4P/BED1	1000017	100	0	0	0	-	
013/2B4P/BED2	1000018	100	0	0	0	-	
013/2B4P/LDK	1000016	100	0	0	0	-	
014/2B4P/BED1	1000020	100	0	0	0	-	
014/2B4P/BED2	1000021	100	0	0	0	-	
014/2B4P/LDK	0100001F	100	0	0	0	-	
015/2B4P/BED1	0100002D	100	0	0	0	-	
015/2B4P/BED2	0100002E	100	0	0	0	-	
015/2B4P/LDK	1000031	100	0.3	2	1	-	
016/2B4P/BED1	1000034	100	0	0	0	-	
016/2B4P/BED2	1000035	100	0	0	0	-	
016/2B4P/LDK	1000038	100	0.3	2	1	-	
017/2B4P/BED1	0100003B	100	0	0	0	-	
017/2B4P/BED2	0100003C	100	0	0	0	-	
017/2B4P/LDK	0100003A	100	0.6	4	1	-	
018/2B4P/BED1	1000044	100	0	0	0	-	
018/2B4P/BED2	1000045	100	0	0	0	-	
018/2B4P/LDK	1000043	100	0.7	5	1	-	

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY1_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should
 Use of educational NCM profiles may be seen as inappropriate due to
 See Section 6.1.2 (a) of TM52 for further information.

Passed: 64 rooms:

Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note: A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling

i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does

not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.

The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY2_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top- Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0.1	2	1	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0.2	6	1	-
003/3B5P/BED2	0000005B	100	0.2	11	2	2
003/3B5P/BED3	0000005C	100	0.8	16	2	2
003/3B5P/DINKIT	0000000D	100	0.3	4	1	-
003/3B5P/LIV	0000000C	100	0.4	7	1	2
004/3B5P/BED1	62	100	0.4	12	2	2
004/3B5P/BED2	63	100	0.6	14	2	2
004/3B5P/BED3	64	100	0.9	20	3	2
004/3B5P/DINKIT	19	100	0.7	9	2	2
004/3B5P/LIV	18	100	0.9	13	2	2
005/3B5P/BED1	69	100	0.4	12	2	2
005/3B5P/BED2	0000006A	100	0.6	14	2	2
005/3B5P/BED3	0000006B	100	0.9	20	3	2
005/3B5P/DINKIT	0000001A	100	0.7	9	2	2
005/3B5P/LIV	0000001B	100	0.9	13	2	2
006/3B5P/BED1	71	100	0.1	5	1	-
006/3B5P/BED2	70	100	0.2	9	2	2
006/3B5P/BED3	0000006F	100	0.8	16	2	2
006/3B5P/DINKIT	27	100	0.3	4	1	-
006/3B5P/LIV	26	100	0.4	7	1	2
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0.3	5	1	-
009/4B6P/BED1	76	100	0.7	15	2	2
009/4B6P/BED2	77	100	0.2	6	1	-
009/4B6P/BED3	78	100	0.2	12	2	2
009/4B6P/BED4	79	100	0.8	19	3	2
009/4B6P/DINKIT	0000003D	100	0.1	2	1	-
009/4B6P/LIV	0000003C	100	0.4	7	1	2
010/4B6P/BED1	1000026	100	0.8	15	2	2
010/4B6P/BED2	1000027	100	0.2	6	1	-
010/4B6P/BED3	1000028	100	0.2	12	2	2
010/4B6P/BED4	1000029	100	0.9	20	3	2
010/4B6P/DINKIT	1000006	100	0.4	6	1	-
010/4B6P/LIV	1000005	100	0.7	13	2	2
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0.1	2	1	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0.1	2	1	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0.1	2	1	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0.1	2	1	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0.1	4	1	-
015/2B4P/LDK	1000031	100	0.2	4	1	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0.1	2	1	-
016/2B4P/LDK	1000038	100	0.1	2	1	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0.1	4	1	-
017/2B4P/LDK	0100003A	100	0.3	4	1	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0.1	5	1	-
018/2B4P/LDK	1000043	100	0.3	5	1	-

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY3_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top- Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0.3	6	1	-
003/3B5P/BED3	0000005C	100	0.8	10	1	2
003/3B5P/DINKIT	0000000D	100	0.1	1	1	-
003/3B5P/LIV	0000000C	100	0.1	1	1	-
004/3B5P/BED1	62	100	0.5	7	1	2
004/3B5P/BED2	63	100	0.6	8	1	2
004/3B5P/BED3	64	100	0.9	13	2	2
004/3B5P/DINKIT	19	100	0.3	2	1	-
004/3B5P/LIV	18	100	0.8	6	1	-
005/3B5P/BED1	69	100	0.5	7	1	2
005/3B5P/BED2	0000006A	100	0.6	8	1	2
005/3B5P/BED3	0000006B	100	0.9	13	2	2
005/3B5P/DINKIT	0000001A	100	0.3	2	1	-
005/3B5P/LIV	0000001B	100	0.7	6	1	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0.1	4	1	-
006/3B5P/BED3	0000006F	100	0.8	10	1	2
006/3B5P/DINKIT	27	100	0.1	1	1	-
006/3B5P/LIV	26	100	0.1	1	1	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0.9	12	2	2
009/4B6P/BED2	77	100	0.1	3	1	-
009/4B6P/BED3	78	100	0.2	4	1	-
009/4B6P/BED4	79	100	0.9	12	2	2
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0.1	1	1	-
010/4B6P/BED1	1000026	100	0.9	12	2	2
010/4B6P/BED2	1000027	100	0.2	5	1	-
010/4B6P/BED3	1000028	100	0.2	4	1	-
010/4B6P/BED4	1000029	100	0.9	12	2	2
010/4B6P/DINKIT	1000006	100	0.3	2	1	-
010/4B6P/LIV	1000005	100	0.7	6	1	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0.1	1	1	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0.2	1	1	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0.2	1	1	-

Failed: 0 rooms:

Note: A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY1_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top- Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0.1	2	1	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0.2	6	1	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0.2	6	1	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0.1	2	1	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0.1	3	1	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0.1	5	1	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0.1	3	1	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0.2	6	1	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does
 not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY2_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0.4	7	1	2
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0.1	1	1	-
003/3B5P/BED1	0000005A	100	0.2	7	1	2
003/3B5P/BED2	0000005B	100	0.7	16	2	2
003/3B5P/BED3	0000005C	100	1.1	24	3	2
003/3B5P/DINKIT	0000000D	100	0.7	10	2	2
003/3B5P/LIV	0000000C	100	0.8	12	2	2
004/3B5P/BED1	62	100	0.6	14	2	2
004/3B5P/BED2	63	100	1	21	3	2
004/3B5P/BED3	64	100	1.1	26	4	2
004/3B5P/DINKIT	19	100	1.2	14	2	2
004/3B5P/LIV	18	100	1.6	18	3	2
005/3B5P/BED1	69	100	0.6	14	2	2
005/3B5P/BED2	0000006A	100	1	21	3	2
005/3B5P/BED3	0000006B	100	1.1	26	4	2
005/3B5P/DINKIT	0000001A	100	1.2	14	2	2
005/3B5P/LIV	0000001B	100	1.6	18	3	2
006/3B5P/BED1	71	100	0.2	6	1	-
006/3B5P/BED2	70	100	0.6	14	2	2
006/3B5P/BED3	0000006F	100	1	22	3	2
006/3B5P/DINKIT	27	100	0.6	10	2	2
006/3B5P/LIV	26	100	0.8	12	2	2
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0.1	1	1	-
008/1B2P/BED	31	100	0.1	2	1	-
008/1B2P/LDK	30	100	0.6	11	2	2
009/4B6P/BED1	76	100	0.9	20	3	2
009/4B6P/BED2	77	100	0.3	10	2	2
009/4B6P/BED3	78	100	0.6	14	2	2
009/4B6P/BED4	79	100	1	23	4	2
009/4B6P/DINKIT	0000003D	100	0.4	6	1	-
009/4B6P/LIV	0000003C	100	1.4	17	3	2
010/4B6P/BED1	1000026	100	0.9	20	3	2
010/4B6P/BED2	1000027	100	0.3	13	2	2
010/4B6P/BED3	1000028	100	0.6	15	2	2
010/4B6P/BED4	1000029	100	1	25	4	2
010/4B6P/DINKIT	1000006	100	0.7	15	2	2
010/4B6P/LIV	1000005	100	1.6	21	3	2
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0.2	4	1	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0.1	2	1	-
012/2B4P/LDK	1000010	100	0.1	2	1	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0.1	2	1	-
013/2B4P/LDK	1000016	100	0.1	2	1	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0.1	2	1	-
014/2B4P/LDK	0100001F	100	0.1	2	1	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0.2	8	1	2
015/2B4P/LDK	1000031	100	0.7	14	2	2
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0.1	5	1	-
016/2B4P/LDK	1000038	100	0.6	12	2	2
017/2B4P/BED1	0100003B	100	0	1	1	-
017/2B4P/BED2	0100003C	100	0.2	6	1	-
017/2B4P/LDK	0100003A	100	0.7	12	2	2
018/2B4P/BED1	1000044	100	0.1	4	1	-
018/2B4P/BED2	1000045	100	0.2	9	2	2
018/2B4P/LDK	1000043	100	0.9	14	2	2

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY3_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:						
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing	
001/1B2P/BED	2	100	0	0	0	-	
001/1B2P/LDK	0	100	0	0	0	-	
002/1B2P/BED	7	100	0	0	0	-	
002/1B2P/LDK	5	100	0	0	0	-	
003/3B5P/BED1	0000005A	100	0.1	5	1	-	
003/3B5P/BED2	0000005B	100	0.7	9	1		2
003/3B5P/BED3	0000005C	100	1	18	2		2
003/3B5P/DINKIT	0000000D	100	0.3	2	1	-	
003/3B5P/LIV	0000000C	100	0.6	6	1	-	
004/3B5P/BED1	62	100	0.7	9	1		2
004/3B5P/BED2	63	100	1	14	2		2
004/3B5P/BED3	64	100	1.2	20	2		2
004/3B5P/DINKIT	19	100	0.7	6	1	-	
004/3B5P/LIV	18	100	1.3	10	2		2
005/3B5P/BED1	69	100	0.7	9	1		2
005/3B5P/BED2	0000006A	100	1	14	2		2
005/3B5P/BED3	0000006B	100	1.2	20	2		2
005/3B5P/DINKIT	0000001A	100	0.7	6	1	-	
005/3B5P/LIV	0000001B	100	1.3	10	2		2
006/3B5P/BED1	71	100	0.1	5	1	-	
006/3B5P/BED2	70	100	0.6	8	1		2
006/3B5P/BED3	0000006F	100	1	18	2		2
006/3B5P/DINKIT	27	100	0.2	2	1	-	
006/3B5P/LIV	26	100	0.6	6	1	-	
007/1B2P/BED	29	100	0	0	0	-	
007/1B2P/LDK	28	100	0	0	0	-	
008/1B2P/BED	31	100	0	0	0	-	
008/1B2P/LDK	30	100	0.2	2	1	-	
009/4B6P/BED1	76	100	1	18	2		2
009/4B6P/BED2	77	100	0.4	6	1	-	
009/4B6P/BED3	78	100	0.7	9	1		2
009/4B6P/BED4	79	100	1.1	19	2		2
009/4B6P/DINKIT	0000003D	100	0.3	2	1	-	
009/4B6P/LIV	0000003C	100	1.2	8	1		2
010/4B6P/BED1	1000026	100	1	18	2		2
010/4B6P/BED2	1000027	100	0.5	8	1		2
010/4B6P/BED3	1000028	100	0.8	9	1		2
010/4B6P/BED4	1000029	100	1.2	19	2		2
010/4B6P/DINKIT	1000006	100	1	7	1		2
010/4B6P/LIV	1000005	100	1.6	14	2		2
011/2B4P/BED1	1000009	100	0	0	0	-	
011/2B4P/BED2	0100000A	100	0	0	0	-	
011/2B4P/LDK	1000008	100	0	0	0	-	
012/2B4P/BED1	1000011	100	0	0	0	-	
012/2B4P/BED2	1000012	100	0	0	0	-	
012/2B4P/LDK	1000010	100	0	0	0	-	
013/2B4P/BED1	1000017	100	0	0	0	-	
013/2B4P/BED2	1000018	100	0	0	0	-	
013/2B4P/LDK	1000016	100	0	0	0	-	
014/2B4P/BED1	1000020	100	0	0	0	-	
014/2B4P/BED2	1000021	100	0	0	0	-	
014/2B4P/LDK	0100001F	100	0	0	0	-	
015/2B4P/BED1	0100002D	100	0	0	0	-	
015/2B4P/BED2	0100002E	100	0	0	0	-	
015/2B4P/LDK	1000031	100	0.3	2	1	-	
016/2B4P/BED1	1000034	100	0	0	0	-	
016/2B4P/BED2	1000035	100	0	0	0	-	
016/2B4P/LDK	1000038	100	0.3	2	1	-	
017/2B4P/BED1	0100003B	100	0	0	0	-	
017/2B4P/BED2	0100003C	100	0	0	0	-	
017/2B4P/LDK	0100003A	100	0.6	4	1	-	
018/2B4P/BED1	1000044	100	0	0	0	-	
018/2B4P/BED2	1000045	100	0	0	0	-	
018/2B4P/LDK	1000043	100	0.7	5	1	-	

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does
 not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY1_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:						
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing	
001/1B2P/BED	2	100	0	0	0	-	
001/1B2P/LDK	0	100	0	0	0	-	
002/1B2P/BED	7	100	0	0	0	-	
002/1B2P/LDK	5	100	0	0	0	-	
003/3B5P/BED1	0000005A	100	0	0	0	-	
003/3B5P/BED2	0000005B	100	0	0	0	-	
003/3B5P/BED3	0000005C	100	0.2	6	1	-	
003/3B5P/DINKIT	0000000D	100	0	0	0	-	
003/3B5P/LIV	0000000C	100	0	0	0	-	
004/3B5P/BED1	62	100	0	0	0	-	
004/3B5P/BED2	63	100	0.1	4	1	-	
004/3B5P/BED3	64	100	0.3	7	1	-	2
004/3B5P/DINKIT	19	100	0.1	1	1	-	
004/3B5P/LIV	18	100	0.2	3	1	-	
005/3B5P/BED1	69	100	0	0	0	-	
005/3B5P/BED2	0000006A	100	0.1	3	1	-	
005/3B5P/BED3	0000006B	100	0.3	7	1	-	2
005/3B5P/DINKIT	0000001A	100	0.1	1	1	-	
005/3B5P/LIV	0000001B	100	0.2	3	1	-	
006/3B5P/BED1	71	100	0	0	0	-	
006/3B5P/BED2	70	100	0	0	0	-	
006/3B5P/BED3	0000006F	100	0.2	5	1	-	
006/3B5P/DINKIT	27	100	0	0	0	-	
006/3B5P/LIV	26	100	0	0	0	-	
007/1B2P/BED	29	100	0	0	0	-	
007/1B2P/LDK	28	100	0	0	0	-	
008/1B2P/BED	31	100	0	0	0	-	
008/1B2P/LDK	30	100	0	0	0	-	
009/4B6P/BED1	76	100	0.2	5	1	-	
009/4B6P/BED2	77	100	0	0	0	-	
009/4B6P/BED3	78	100	0	0	0	-	
009/4B6P/BED4	79	100	0.3	7	1	-	2
009/4B6P/DINKIT	0000003D	100	0	0	0	-	
009/4B6P/LIV	0000003C	100	0.1	1	1	-	
010/4B6P/BED1	1000026	100	0.3	6	1	-	
010/4B6P/BED2	1000027	100	0	0	0	-	
010/4B6P/BED3	1000028	100	0	0	0	-	
010/4B6P/BED4	1000029	100	0.3	7	1	-	2
010/4B6P/DINKIT	1000006	100	0	0	0	-	
010/4B6P/LIV	1000005	100	0.2	4	1	-	
011/2B4P/BED1	1000009	100	0	0	0	-	
011/2B4P/BED2	0100000A	100	0	0	0	-	
011/2B4P/LDK	1000008	100	0	0	0	-	
012/2B4P/BED1	1000011	100	0	0	0	-	
012/2B4P/BED2	1000012	100	0	0	0	-	
012/2B4P/LDK	1000010	100	0	0	0	-	
013/2B4P/BED1	1000017	100	0	0	0	-	
013/2B4P/BED2	1000018	100	0	0	0	-	
013/2B4P/LDK	1000016	100	0	0	0	-	
014/2B4P/BED1	1000020	100	0	0	0	-	
014/2B4P/BED2	1000021	100	0	0	0	-	
014/2B4P/LDK	0100001F	100	0	0	0	-	
015/2B4P/BED1	0100002D	100	0	0	0	-	
015/2B4P/BED2	0100002E	100	0	0	0	-	
015/2B4P/LDK	1000031	100	0	0	0	-	
016/2B4P/BED1	1000034	100	0	0	0	-	
016/2B4P/BED2	1000035	100	0	0	0	-	
016/2B4P/LDK	1000038	100	0	0	0	-	
017/2B4P/BED1	0100003B	100	0	0	0	-	
017/2B4P/BED2	0100003C	100	0	0	0	-	
017/2B4P/LDK	0100003A	100	0.1	1	1	-	
018/2B4P/BED1	1000044	100	0	0	0	-	
018/2B4P/BED2	1000045	100	0	0	0	-	
018/2B4P/LDK	1000043	100	0.1	1	1	-	

Failed: 0 rooms:

Note: A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY2_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0.1	5	1	-
001/1B2P/LDK	0	100	0.7	14	2	2
002/1B2P/BED	7	100	0.1	5	1	-
002/1B2P/LDK	5	100	0.4	6	2	-
003/3B5P/BED1	0000005A	100	0.6	14	2	2
003/3B5P/BED2	0000005B	100	0.9	21	3	2
003/3B5P/BED3	0000005C	100	1.1	29	4	2
003/3B5P/DINKIT	0000000D	100	1.1	16	3	2
003/3B5P/LIV	0000000C	100	1.4	15	3	2
004/3B5P/BED1	62	100	0.9	20	3	2
004/3B5P/BED2	63	100	1.1	24	4	2
004/3B5P/BED3	64	100	1.1	30	4	2
004/3B5P/DINKIT	19	100	1.5	21	3	2
004/3B5P/LIV	18	100	1.6	22	3	2
005/3B5P/BED1	69	100	0.9	20	3	2
005/3B5P/BED2	0000006A	100	1.1	24	4	2
005/3B5P/BED3	0000006B	100	1.1	30	4	2
005/3B5P/DINKIT	0000001A	100	1.5	21	3	2
005/3B5P/LIV	0000001B	100	1.6	22	3	2
006/3B5P/BED1	71	100	0.6	14	2	2
006/3B5P/BED2	70	100	0.9	21	3	2
006/3B5P/BED3	0000006F	100	1.1	29	4	2
006/3B5P/DINKIT	27	100	1.2	15	3	2
006/3B5P/LIV	26	100	1.4	15	3	2
007/1B2P/BED	29	100	0.1	5	1	-
007/1B2P/LDK	28	100	0.4	6	2	-
008/1B2P/BED	31	100	0.2	6	1	-
008/1B2P/LDK	30	100	1.1	15	2	2
009/4B6P/BED1	76	100	1	22	3	2
009/4B6P/BED2	77	100	0.7	14	2	2
009/4B6P/BED3	78	100	0.9	21	3	2
009/4B6P/BED4	79	100	1.1	28	4	2
009/4B6P/DINKIT	0000003D	100	0.9	13	2	2
009/4B6P/LIV	0000003C	100	1.6	21	3	2
010/4B6P/BED1	1000026	100	1	23	4	2
010/4B6P/BED2	1000027	100	0.7	15	2	2
010/4B6P/BED3	1000028	100	0.8	21	3	2
010/4B6P/BED4	1000029	100	1.2	30	4	2
010/4B6P/DINKIT	1000006	100	1.3	18	3	2
010/4B6P/LIV	1000005	100	1.8	25	4	2
011/2B4P/BED1	1000009	100	0.1	5	1	-
011/2B4P/BED2	0100000A	100	0.2	6	1	-
011/2B4P/LDK	1000008	100	0.7	13	2	2
012/2B4P/BED1	1000011	100	0.1	5	1	-
012/2B4P/BED2	1000012	100	0.2	7	2	2
012/2B4P/LDK	1000010	100	0.6	8	2	2
013/2B4P/BED1	1000017	100	0.1	5	1	-
013/2B4P/BED2	1000018	100	0.2	8	2	2
013/2B4P/LDK	1000016	100	0.7	10	2	2
014/2B4P/BED1	1000020	100	0.2	6	1	-
014/2B4P/BED2	1000021	100	0.2	8	1	2
014/2B4P/LDK	0100001F	100	0.6	8	2	2
015/2B4P/BED1	0100002D	100	0.2	6	1	-
015/2B4P/BED2	0100002E	100	0.6	15	2	2
015/2B4P/LDK	1000031	100	1.3	19	3	2
016/2B4P/BED1	1000034	100	0.2	6	1	-
016/2B4P/BED2	1000035	100	0.4	13	2	2
016/2B4P/LDK	1000038	100	1.3	17	3	2
017/2B4P/BED1	0100003B	100	0.2	7	1	2
017/2B4P/BED2	0100003C	100	0.4	13	2	2
017/2B4P/LDK	0100003A	100	1.4	19	3	2
018/2B4P/BED1	1000044	100	0.2	9	2	2
018/2B4P/BED2	1000045	100	0.7	16	2	2
018/2B4P/LDK	1000043	100	1.5	21	3	2

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY3_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top- Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0.3	2	1	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0.1	1	1	-
003/3B5P/BED1	0000005A	100	0.6	8	1	2
003/3B5P/BED2	0000005B	100	0.9	14	2	2
003/3B5P/BED3	0000005C	100	1.1	20	2	2
003/3B5P/DINKIT	0000000D	100	0.7	6	1	-
003/3B5P/LIV	0000000C	100	1.2	8	1	2
004/3B5P/BED1	62	100	0.9	14	2	2
004/3B5P/BED2	63	100	1	18	2	2
004/3B5P/BED3	64	100	1.2	26	3	2
004/3B5P/DINKIT	19	100	1.2	10	2	2
004/3B5P/LIV	18	100	1.6	14	2	2
005/3B5P/BED1	69	100	0.9	14	2	2
005/3B5P/BED2	0000006A	100	1	18	2	2
005/3B5P/BED3	0000006B	100	1.2	26	3	2
005/3B5P/DINKIT	0000001A	100	1.2	10	2	2
005/3B5P/LIV	0000001B	100	1.6	13	2	2
006/3B5P/BED1	71	100	0.6	8	1	2
006/3B5P/BED2	70	100	0.9	13	2	2
006/3B5P/BED3	0000006F	100	1.1	20	2	2
006/3B5P/DINKIT	27	100	0.7	5	1	-
006/3B5P/LIV	26	100	1.1	7	1	2
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0.1	1	1	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0.5	5	1	-
009/4B6P/BED1	76	100	1	20	2	2
009/4B6P/BED2	77	100	0.7	11	2	2
009/4B6P/BED3	78	100	0.9	15	2	2
009/4B6P/BED4	79	100	1.2	24	3	2
009/4B6P/DINKIT	0000003D	100	0.8	6	1	-
009/4B6P/LIV	0000003C	100	1.5	13	2	2
010/4B6P/BED1	1000026	100	1.1	20	2	2
010/4B6P/BED2	1000027	100	0.8	10	2	2
010/4B6P/BED3	1000028	100	1	16	2	2
010/4B6P/BED4	1000029	100	1.3	26	3	2
010/4B6P/DINKIT	1000006	100	1.3	10	2	2
010/4B6P/LIV	1000005	100	1.7	16	2	2
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0.4	3	1	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0.1	2	1	-
012/2B4P/LDK	1000010	100	0.3	2	1	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0.1	2	1	-
013/2B4P/LDK	1000016	100	0.5	3	1	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0.3	2	1	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0.4	6	1	-
015/2B4P/LDK	1000031	100	1.3	10	2	2
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0.3	5	1	-
016/2B4P/LDK	1000038	100	1.2	10	2	2
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0.4	6	1	-
017/2B4P/LDK	0100003A	100	1.2	10	2	2
018/2B4P/BED1	1000044	100	0	1	1	-
018/2B4P/BED2	1000045	100	0.6	8	1	2
018/2B4P/LDK	1000043	100	1.4	10	2	2

Failed: 0 rooms:

Note: A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY1_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top- Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY2_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top- Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does
 not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY3_2020High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be
 Use of educational NCM profiles may be seen as inappropriate due to prolonged
 See Section 6.1.2 (a) of TM52 for further information.

Passed:	64 rooms:					
Room Name	Room ID	Occupied days (%)	Criteria 1 (%Hrs Top- Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. DeltaT)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed.
 The assessment does
 not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY1_2050High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be conducted for occupied and/or "available hours".
 Use of educational NCM profiles may be seen as inappropriate due to prolonged unoccupied periods during summer months.

See Section 6.1.2 (a) of TM52 for further information.

Room Name	Room ID	Occupied d	Criteria 1 (%)	Criteria 2 (h)	Criteria 3 (Max.	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed. The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY2_2050High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be conducted for occupied and/or "available hours".
 Use of educational NCM profiles may be seen as inappropriate due to prolonged unoccupied periods during summer months.

See Section 6.1.2 (a) of TM52 for further information.

Room Name	Room ID	Occupied d	Criteria 1 (%)	Criteria 2 (h)	Criteria 3 (Max.	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note: A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed. The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY3_2050High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be conducted for occupied and/or "available hours".
 Use of educational NCM profiles may be seen as inappropriate due to prolonged unoccupied periods during summer months.

See Section 6.1.2 (a) of TM52 for further information.

Room Name	Room ID	Occupied d	Criteria 1 (%)	Criteria 2 (%)	Criteria 3 (Max)	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note: A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed. The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY1_2080High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be conducted for occupied and/or "available hours".
 Use of educational NCM profiles may be seen as inappropriate due to prolonged unoccupied periods during summer months.

See Section 6.1.2 (a) of TM52 for further information.

Room Name	Room ID	Occupied d	Criteria 1 (%)	Criteria 2 (h)	Criteria 3 (Max.	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note:

A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed. The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY2_2080High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be conducted for occupied and/or "available hours".
 Use of educational NCM profiles may be seen as inappropriate due to prolonged unoccupied periods during summer months.

See Section 6.1.2 (a) of TM52 for further information.

Room Name	Room ID	Occupied d	Criteria 1 (%)	Criteria 2 (h)	Criteria 3 (Max.	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

Note: A TM 52 2013 analysis provides an assessment of comfort compliance based on bulk air modelling
 i.e. each space is considered idealised and the air in the space perfectly mixed. The assessment does not assess placement of space features e.g. windows & openings, airflow patterns or discomfort issues.
 The user should assess these design aspects outside of the TM52 analysis.

Overall

Passed: 64 rooms:
 Failed: 0 rooms:
 Unoccupied: 0 rooms:

Data:

Building category: Category II (new builds.)
 Weather file: London_LWC_DSY3_2080High50.epw
 Days data= 365 01-Jan 31-Dec
 Days (summer)= 153 01-May 30-Sep
 Data OK? OK Full summer

Occupancy:

Note: This report assesses occupied periods only. Please be aware that TM52 should be conducted for occupied and/or "available hours".
 Use of educational NCM profiles may be seen as inappropriate due to prolonged unoccupied periods during summer months.

See Section 6.1.2 (a) of TM52 for further information.

Room Name	Room ID	Occupied d	Criteria 1 (%)	Criteria 2 (h)	Criteria 3 (Max.	Criteria failing
001/1B2P/BED	2	100	0	0	0	-
001/1B2P/LDK	0	100	0	0	0	-
002/1B2P/BED	7	100	0	0	0	-
002/1B2P/LDK	5	100	0	0	0	-
003/3B5P/BED1	0000005A	100	0	0	0	-
003/3B5P/BED2	0000005B	100	0	0	0	-
003/3B5P/BED3	0000005C	100	0	0	0	-
003/3B5P/DINKIT	0000000D	100	0	0	0	-
003/3B5P/LIV	0000000C	100	0	0	0	-
004/3B5P/BED1	62	100	0	0	0	-
004/3B5P/BED2	63	100	0	0	0	-
004/3B5P/BED3	64	100	0	0	0	-
004/3B5P/DINKIT	19	100	0	0	0	-
004/3B5P/LIV	18	100	0	0	0	-
005/3B5P/BED1	69	100	0	0	0	-
005/3B5P/BED2	0000006A	100	0	0	0	-
005/3B5P/BED3	0000006B	100	0	0	0	-
005/3B5P/DINKIT	0000001A	100	0	0	0	-
005/3B5P/LIV	0000001B	100	0	0	0	-
006/3B5P/BED1	71	100	0	0	0	-
006/3B5P/BED2	70	100	0	0	0	-
006/3B5P/BED3	0000006F	100	0	0	0	-
006/3B5P/DINKIT	27	100	0	0	0	-
006/3B5P/LIV	26	100	0	0	0	-
007/1B2P/BED	29	100	0	0	0	-
007/1B2P/LDK	28	100	0	0	0	-
008/1B2P/BED	31	100	0	0	0	-
008/1B2P/LDK	30	100	0	0	0	-
009/4B6P/BED1	76	100	0	0	0	-
009/4B6P/BED2	77	100	0	0	0	-
009/4B6P/BED3	78	100	0	0	0	-
009/4B6P/BED4	79	100	0	0	0	-
009/4B6P/DINKIT	0000003D	100	0	0	0	-
009/4B6P/LIV	0000003C	100	0	0	0	-
010/4B6P/BED1	1000026	100	0	0	0	-
010/4B6P/BED2	1000027	100	0	0	0	-
010/4B6P/BED3	1000028	100	0	0	0	-
010/4B6P/BED4	1000029	100	0	0	0	-
010/4B6P/DINKIT	1000006	100	0	0	0	-
010/4B6P/LIV	1000005	100	0	0	0	-
011/2B4P/BED1	1000009	100	0	0	0	-
011/2B4P/BED2	0100000A	100	0	0	0	-
011/2B4P/LDK	1000008	100	0	0	0	-
012/2B4P/BED1	1000011	100	0	0	0	-
012/2B4P/BED2	1000012	100	0	0	0	-
012/2B4P/LDK	1000010	100	0	0	0	-
013/2B4P/BED1	1000017	100	0	0	0	-
013/2B4P/BED2	1000018	100	0	0	0	-
013/2B4P/LDK	1000016	100	0	0	0	-
014/2B4P/BED1	1000020	100	0	0	0	-
014/2B4P/BED2	1000021	100	0	0	0	-
014/2B4P/LDK	0100001F	100	0	0	0	-
015/2B4P/BED1	0100002D	100	0	0	0	-
015/2B4P/BED2	0100002E	100	0	0	0	-
015/2B4P/LDK	1000031	100	0	0	0	-
016/2B4P/BED1	1000034	100	0	0	0	-
016/2B4P/BED2	1000035	100	0	0	0	-
016/2B4P/LDK	1000038	100	0	0	0	-
017/2B4P/BED1	0100003B	100	0	0	0	-
017/2B4P/BED2	0100003C	100	0	0	0	-
017/2B4P/LDK	0100003A	100	0	0	0	-
018/2B4P/BED1	1000044	100	0	0	0	-
018/2B4P/BED2	1000045	100	0	0	0	-
018/2B4P/LDK	1000043	100	0	0	0	-

Failed: 0 rooms:

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