

		Our ref: HGY/2022/3851 Contact: Martin Cowie Date: 27/07/2023
Town and Country Act 1990 (As amended)		
Location:	Strategic Development Partnership (SDP) Sites Welbourne North Island Ferry Island Ashley Road East and Ashley Road West Station Road London N17	
Proposal:	Application for the partial approval of details pursuant to Condition D6 (Overheating and Model Report - LBH Carbon Management) in relation to Plot D (Ashley Road West site) of the Tottenham Hale Centre planning permission (LPA ref: HGY/2018/2223) dated 27 March 2019. This application seeks to discharge Condition D6 in part as it relates to the marketing suite only.	
Wording of condition:	<u>Condition D6:</u> Prior to above ground works within Plot D (excluding demolition and works to construct the building core), an Overheating Model and Report in respect of Plot D shall be submitted in writing to and for approval by the Local Planning Authority. The submission shall assess the overheating risk (using future weather temperature projections), and demonstrate how the risks have been mitigated and removed through design solutions. This assessment will use TM59 (for domestic) or TM52 (for non-domestic). Both models shall be run using the London Weather File TM49. The submission shall include details of the design measures incorporated within the scheme within Plot D (including details of the feasibility of using external solar shading and passive cooling and ventilation) to ensure adaptation to higher temperatures are addressed, and the units do not overheat. The submission shall include the following: A. Full listing (based on unit number relating to planning drawings) of units modelled and the overheating risk before measures are installed; B. The measures installed to reduce overheating risk: i. the standard and the impact of the solar control glazing; ii. that all heating pipework is appropriately insulated iii. that passive cooling and ventilation features have been included iv. highlight the mitigation strategies to overcome any overheating risk v. that there is space for pipe work or localised building services and that this is designed in to the building to allow the retrofitting of centralised or localised cooling and ventilation equipment if needed. The submission shall preclude the use of air conditioning unless exceptional justification is given for design based upon current weather projection (CIBSE DSY1). The development within Plot D shall be constructed in accordance with the approved submission. REASON: In the interest of adapting to climate change and to secure sustainable development.	

Carbon Management Response 12/05/2023

Documents submitted:

- As Built TM52 Overheating Report by LJJ Contracting Ltd dated 29th September 2022
- Other relevant documents

Response

The applicant has undertaken a dynamic thermal modelling assessment in line with CIBSE TM52 with TM49 weather files. The report has modelled 4 zones, under the London Weather files.

Building Envelope – Non-Residential Areas

The applied building values for the non-residential areas are set out against the Part L2A notional building parameters in Table 4-11 below.

Table 4-11 Proposed Building Thermal Envelope U Values for Non-Residential Areas

Parameter	Part L2A Value	Part L2A Notional Building Parameters	Applied Building Values
Wall U Value	0.35 W/m ² K	0.26 W/m ² K	0.15 W/m ² K
Ground Floor U Value	0.25 W/m ² K	0.22 W/m ² K	0.10 W/m ² K
Roof U Value	0.25 W/m ² K	0.18 W/m ² K	N/a
Window U Value	2.20 W/m ² K	1.60 W/m ² K	1.27 W/m ² K
Thermal Bridging	N/a	0.10 W/m ² K	0.10 W/m ² K
Air Tightness	10 m ³ /h.m ² @ 50Pa	3 m ³ /h.m ² @ 50Pa	5 m ³ /h.m ² @ 50Pa

Item	Construction Make Up	U-Value (W/m ² K)
External Wall	Non-Residential Areas Values	0.25
Ground Floor	Non-Residential Areas Values	0.10
Roof	Non-Residential Areas Values	N/A
Window	Non-Residential Areas Values	1.60
Thermal Bridging	Non-Residential Areas Values	0.15
Air Tightness	Buildings > 500 m ² built to 2002 Building Regulations (or later)	10 m ³ /(hr.m ²)

Results are listed in the table below.

	Criterion 1: Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: Hours Exceeding Absolute Limit	Number of spaces pass TM52	Number of corridors pass
DSY1 2020s	4/4	1/4	4/4	4/4	0/0
DSY2 2020s	Not modelled				
DSY3 2020s	Not modelled				
DSY1 2050s	Not modelled				
DSY1 2080s	Not modelled				

All zones pass the overheating requirements for the Design Summer Year (DSY) weather file for London. In order to pass this, the following measures are considered:

- MVHR
- Air tightness of 10 m³/(hr.m²)

It is not clear what other measures are considered to pass this and if the analysis has been modelled with active cooling or not. The input fabric specification used for the analysis does not match with the proposed non-residential fabric specifications. No modelling is done using future weather files and no future mitigation measures are proposed.

The submitted overheating strategy needs more details.

Overheating Actions:

- It is not clear which weather file for London is used for the analysis. Redo the overheating modelling with the Central London weather file (based on CIBSE TM49), which will more accurately represent the urban heat island effect. Please follow Haringey's key overheating requirements ([please follow this link to the summary document](#)).
- The input values for building fabric used for the overheating analysis does not match with the proposed non-residential fabric specifications: U-values and air tightness. Please redo the analysis with appropriate and robust input specifications, or outline where and why changes have been made.
 - o Set out the thermal mass assumption, and thermal elements performance (u-values, g-value) of proposed fenestration, air tightness and ventilation strategy.
 - o Detail specification of the proposed mechanical ventilation (efficiency and air changes)
- Model the zones without active cooling and with mitigation measures that follow the cooling hierarchy to reduce the cooling demand first. The applicant must demonstrate that the risk of overheating has been reduced as far as practical and that all passive measures have been explored, including reduced glazing and increased external shading.
- Specify the shading strategy, including: technical specification and images of the proposed shading feature (e.g. overhangs, Brise Soleil, external shutters), elevations and sections showing where these measures are proposed. Internal blinds cannot be used to pass the

weather files, but can form part of the delivered strategy to reduce overheating risk for occupants (as long as it does not compromise any ventilation requirements).

- Undertake further modelling:
 - o Model the 2020s DSY 2 and 3 and DSY1 for the 2050s and 2080s. Ensure the design has incorporated as many mitigation measures to pass these more extreme and future weather files as far as feasible. Any remaining overheating risk should inform the future retrofit plan.
 - o Any communal corridors, where pipework runs through;
- Specify the active cooling demand (space cooling, not energy used) on an area-weighted average in MJ/m² and MY/year? Please also confirm the efficiency of the equipment, whether the air is sourced from the coolest point / any renewable sources.

Conclusion

Further information is required so we therefore **do not recommend** discharging Condition D6. The applicant should provide a response to the points raised above and issue updated plans/information where required.

Carbon Management Response 27/07/2023

Documents submitted:

- As Built TM52 Overheating Report Revision A prepared by LJJ Contracting Ltd (dated 30th June 2023)
- Tabular Comparison Report prepared by Tas UK Building Regulations Studio
- Other relevant documents

Response

The applicant has resubmitted a dynamic thermal modelling assessment which is in line with CIBSE TM52 and uses TM49 weather files. The report has modelled 4 zones, under the London Weather Centre files which now includes future weather files as well. The input values for building fabric used for the overheating analysis has been amended to match with Stage 3b report provided by Environmental Services Design.

Results are listed in the table below.

	Criterion 1: Hours Exceeding Comfort Range	Criterion 2: Peak Daily Weighted Exceedance	Criterion 3: Hours Exceeding Absolute Limit	Number of spaces pass TM52	Number of corridors pass
DSY1 2020s	4/4	3/4	0	4/4	0/0
DSY2 2020s	4/4	3/4	0	4/4	0/0
DSY3 2020s	4/4	3/4	0	4/4	0/0
DSY1 2050s	4/4	3/4	0	4/4	0/0
DSY1 2080s	4/4	3/4	0	4/4	0/0

All zones pass the overheating requirements for the Design Summer Year (DSY) weather file for London. In order to pass this, the following measures are considered:

- MVHR with ventilation rates
 - o Tea Point – 2 ach
 - o Meeting Room, Sales, Flexible Use Zone – 1.6 ach
- Active cooling is also modelled in flexible use, meeting room and sales area.
- Air tightness of 10 m³/(hr.m²)

The submitted M&E drawings provides AC schedules, location of its units and efficiencies. The cooling demand is proposed to be 96.42kWh/m² which is equal to 347.11 MJ/m². The heating and cooling demand together is 400.93MJ/m² (111.37 kWh/m²).

Conclusion

The information submitted is sufficient, so we **recommend** discharging Condition D6.