



Technical Note

Project: 44 Gloucester Avenue

Ref:

Subject: Response to Camden Council comments

Prepared by: Jiewen Feng

Date: 02/04/2020

Checked by: Dheran Bhudia

Date: 02/04/2020

Introduction

This note sets out our responses to the comment from Camden Council via email on 02/04/2020.

Responses to the specific comment

Local Plan policy CC1 para 8.9 requires passive design to minimize energy demand and the Local Plan at CC2 8.42 requires that 'Active cooling (air conditioning) will only be permitted where dynamic thermal modelling demonstrates there is a clear need for it after all of the preferred measures are incorporated in line with the cooling hierarchy'. Please assess the air conditioning units against the cooling hierarchy in accordance with these policies.

44 Gloucester Avenue development is located within the Primrose Hill Conservation Area in Camden town, therefore there is a certain limitation on improvement and innovation applied to existing parts which are block A, C and house E. These buildings make a positive contribution to the conservation area.

An initial dynamic thermal modelling study was carried out for 44 Gloucester Avenue following CIBSE TM59: 2017 "Design Methodology for Assessment of Overheating risk in Homes", which is used to identify the overheating issue typically of **blocks of flats** rather than individual houses. Therefore, house E was not included in the modelling.

Instead, the SAP methodology has been applied to house (block) E to identify the overheating issue, following the cooling hierarchy:

- Reducing the amount of heat entering the building in summer, for example through introducing the use of shading, louvers, shutters etc. This is limited because house (block) E is within the Primrose Hill Conservation Area and makes a positive contribution to the conservation area.
- Use of thermal mass and high ceilings to manage the heat within the building. As this is an existing building within a conservation area, thermal performance improvement has been considered through internal insulation.
- Passive ventilation: for example, through the use of openable windows. Due to the noise issue from both rail line and nearby road traffic in the vicinity, which was assessed by Sharps Redmore, the purge ventilation is limited.
- Mechanical ventilation: make free cooling when outside air temperature is below that in the building during summer period. There is an MVHR system in basement, and extract ventilation at the other floors.

All above passive measures have been assessed in the SAP engine and the result of this shows that there are high potential overheating issues in the summer period of June to August.

Criterion 3: the dwelling has appropriate passive control measures to limit solar gains	
Does the dwelling have a strong tendency to high summertime temperatures?	Overheating risk (June) = High (24.74°) Overheating risk (July) = High (26.18°) Overheating risk (August) = High (25.42°)

These results are based on the climate data of UK average. The future weather is getting hotter and drier in summer.

In order to cope with the potential overheating issue, cooling is introduced to house (block) E.

The SAP assessment document, showing the result, is attached below.

This design draft submission provides evidence towards compliance with Part L of the Building Regulations, in accordance with Appendix C of AD L1A. It has been carried out using Approved SAP software. It has been prepared from plans and specifications and may not reflect the 'as built' property. This report covers only items included within the SAP and is not a complete report of regulations compliance.

Assessor name	Mrs Jiewen Feng	Assessor number	7832
Client		Last modified	06/07/2018
Address	E1 Block E 44 Gloucester Avenue , London , NW1 8JD		

Check	Evidence	Produced by	OK?																		
Criterion 1: predicted carbon dioxide emission from proposed dwelling does not exceed the target																					
TER (kg CO ₂ /m ² .a)	Fuel = N/A Fuel factor = 1.06 TER = 17.15	Authorised SAP Assessor																			
DER for dwelling as designed (kg CO ₂ /m ² .a)	DER = 28.96	Authorised SAP Assessor																			
Are emissions from dwelling as designed less than or equal to the target?	DER 28.96 > TER 17.15 Excess emissions = 11.81 kg/m ² (68.86%)	Authorised SAP Assessor	Failed																		
Is the fabric energy efficiency of the dwelling as designed less than or equal to the target?	DFEE 90.6 > TFEE 65.0 Variance = 25.6 kWh/m ² (39.4%)	Authorised SAP Assessor	Failed																		
Criterion 2: the performance of the building fabric and the heating, hot water and fixed lighting systems should be no worse than the design limits																					
Fabric U-values																					
Are all U-values better than the design limits in Table 2?	<table border="1"> <thead> <tr> <th>Element</th> <th colspan="2">Weighted average Highest</th> </tr> </thead> <tbody> <tr> <td>Wall</td> <td>0.33 (max 0.30)</td> <td>0.44 (max 0.70)</td> </tr> <tr> <td>Party wall</td> <td colspan="2">(no party wall)</td> </tr> <tr> <td>Floor</td> <td>0.44 (max 0.25)</td> <td>0.44 (max 0.70)</td> </tr> <tr> <td>Roof</td> <td>0.20 (max 0.20)</td> <td>0.20 (max 0.35)</td> </tr> <tr> <td>Openings</td> <td>1.69 (max 2.00)</td> <td>2.00 (max 3.30)</td> </tr> </tbody> </table>	Element	Weighted average Highest		Wall	0.33 (max 0.30)	0.44 (max 0.70)	Party wall	(no party wall)		Floor	0.44 (max 0.25)	0.44 (max 0.70)	Roof	0.20 (max 0.20)	0.20 (max 0.35)	Openings	1.69 (max 2.00)	2.00 (max 3.30)	Authorised SAP Assessor	Failed
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Thermal bridging																					
How has the loss from thermal bridges been calculated?	Thermal bridging calculated using default y-value of 0.15	Authorised SAP Assessor																			
Heating and hot water systems																					
Does the efficiency of the heating systems meet the minimum value set out in the Domestic Heating Compliance Guide?	Main heating system: Bulk LPG, Combi boiler from database Vaillant ecoTEC plus 938 H combi A VUI GB 386/5-5 A R4 Efficiency = 89.80% - SEDBUK 2009 Minimum = 88.00% Secondary heating system: None	Authorised SAP Assessor	Passed																		
Does the insulation of the hot water cylinder meet the standards set out in the Domestic Heating Compliance Guide?	No hot water cylinder	Authorised SAP Assessor																			
Do controls meet the minimum controls provision set out in the Domestic Heating Compliance Guide?	Space heating control: Programmer and at least 2 room thermostats Hot water control: No hot water cylinder Boiler interlock (main system 1) Separate water control	Authorised SAP Assessor	Failed																		

Check	Evidence	Produced by	OK?
Fixed internal lighting			
Does fixed internal lighting comply with paragraphs 42 to 44?	Schedule of installed fixed internal lighting Standard lights = 0 Low energy lights = 10 Percentage of low energy lights = 100% Minimum = 75 %	Authorised SAP Assessor	Passed
Criterion 3: the dwelling has appropriate passive control measures to limit solar gains			
Does the dwelling have a strong tendency to high summertime temperatures?	Overheating risk (June) = High (24.74°) Overheating risk (July) = High (26.18°) Overheating risk (August) = High (25.42°) Region = Thames Thermal mass parameter = 250.00 Ventilation rate in hot weather = 0.20 ach Blinds/curtains = None	Authorised SAP Assessor	Failed
Criterion 4: the performance of the dwelling, as designed, is consistent with the DER			
Design air permeability (m ³ /(h.m ²) at 50Pa)	Design air permeability = 10.00 Max air permeability = 10.00	Authorised SAP Assessor	Passed
Mechanical ventilation system Specific fan power (SFP)	Mechanical ventilation with heat recovery: SFP = 0.60 W/(litre/sec) Max SFP = 1.5 W/(litre/sec) Heat recovery efficiency = 89.00 % Min heat recovery efficiency = 70.00 %	Authorised SAP Assessor	Passed
Have the key features of the design been included (or bettered) in practice?	No key design features included	Authorised SAP Assessor	

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