

FAO: Ethne Humphreys
Senior Planning Officer,
Reading Borough Council

20th October 2023

RE: Dee Road Fire Station

AES Sustainability Consultants Ltd have been engaged to produce an ADO compliance assessment on behalf of Bellway in relation to the development of 54 new build houses and apartments to meet Building Regulations 2021 and in accordance with Reading Borough City Council's policies at Dee Road Fire Station.

The introduction of the new Approved Document O requires that every new development complies with the minimum requirement O1 of Schedule 1 to the Building Regulations 2010. This can be demonstrated by either utilising the simplified or dynamic methodology. The latter has been selected on this development and compliance has been demonstrated.

Due to the location of the site (which dictates the Swindon DSY1 2020 high50 weather file's selection according to the TM59 guidance) in addition to the orientation of certain units and the noise constraints present on site, compliance with ADO required the introduction of adverse mitigation measures. These measures include reducing the windows' glazing g-value (up to the point that acceptable products can be manufactured and procured from the client's selected window manufacturer) and additional ventilation systems.

However, certain units with East/South-East/South/South-West/West orientations were proven to be subject to extensive solar gains mainly due to the amount of glazing present in the architectural design in certain rooms. TM59 limits on the criteria under consideration are set so that acceptable internal conditions are maintained at all times and occupant comfort is satisfied, therefore the introduction of greater than normal solar gains lead to failing 'criterion a' of the guidance.

Since the design has progressed since planning and the requirement for compliance with ADO was introduced at a later stage, the current glazing amount in certain units exceeds what would secure compliance. Therefore, removing part of it is necessary for maintaining acceptable internal conditions and therefore passing 'criterion a' of the TM59 methodology. AES have proposed that excessive glazing shall be blacked out in the following units:

Coppersmith units 3, 4, 7, 8, 18, 19, 22 and 23

Reedmaker units 1, 2, 5, 6, 20, 21, 24, 25

Lardner units 10, 11, 12, 13, 14, 15, 16, 17, 27, 28, 29, 30

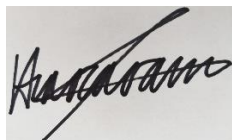
Walker unit 9

Following dynamic energy modelling and the TM59 methodology, the calculations undertaken by AES demonstrated that a pass is secured if some of the glazing in some house types is obstructed so as the excessive solar gains can be blocked and subsequently compliance with ADO is achieved.

The aforementioned mitigation strategy is directly in line with the Part O guidance where it is advised that all buildings should be constructed to meet the overheating requirements using passive means first as far as practical before the introduction of any form of cooling. That included limiting unwanted solar gains and removing excess heat.

An ADO compliance checklist will be produced in due course to demonstrate compliance of all units under assessment with ADO and the 2021 Building Regulations and will be submitted to Reading Borough City Council for review.

Yours sincerely,



Kostas Anastasakis

Senior Sustainability Consultant

APPENDIX A – Drawing register of units affected by Overheating and Building Regulations

drawing register



PROJECT:

DEE ROAD FIRE STATION

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CLIENT:

BELLWAY THAMES VALLEY

PROJECT REF:

092102-BEL-TV

DRAWING REF	SIZE	DRAWING TITLE	28.07.2022	28.12.2022	01.02.2023	28.02.2023	04.04.2023	05.05.2023	25.05.2023	16.10.2023																				
		Supplementary Design Statement																												
LAYOUTS																														
092102-BEL-TV-01	A0	Presentation Planning Layout	/	A	B	C	D	E	F																					
092102-BEL-TV-02	A2	Supporting Planning Layout	/	A	B	C	D	E	F																					
092102-BEL-TV-03	A2	Storey Heights Layout	/	A	B	C	D	E	F																					
092102-BEL-TV-04	A2	Tenure Layout	/	A	B	C	D	E	F																					
092102-BEL-TV-05	A0	Masterplan Layout	Drawing Omitted																											
092102-BEL-TV-06	A3	Location Plan	/			/	/																							
PERSPECTIVES																														
092102-PER01	A3Ext	Perspective View 01	/	A	B	C				D																				
092102-PER02	A3Ext	Perspective View 02	/	A	B	C	D			E																				
STREET SCENES & SECTIONS																														
092102-BEL-TV-SS01	A1	Street Scene 01	/	A	B	C	D			E																				
092102-BEL-TV-SS02	A3E	Street Scene 02	/	A	B	C				D																				
092102-BEL-TV-SS03	A3E	Street Scene 03	/	A	B	C				D																				
Plot Numbers																														
HOUSES																														
C5-3B-25-TC-E1	A3	The Coppermith - Elevations	5.1	3, 4, 7, 8, 15, 19, 22, 23																										
C5-3B-25-P2	A3	The Coppermith - Floor Plans																												
55-3D-55-TC-E2	A0	The Coppermith - Elevations	4.9	45																										
55-3D-55-P3	A0	The Coppermith - Floor Plans																												
FI-3B-285-TC-E1	A3	The Fisher - Elevations	5.1	25, 31																										
FI-3B-285-P1	A3	The Fisher - Floor Plans																												
LD-3B-35-TC-E1	A3	The Lardner - Elevations	5.1	11, 12, 14, 15																										
LD-3B-35-P1	A3	The Lardner - Floor Plans																												
LD-3B-35-TC-E2	A3	The Lardner - Elevations	5.2	10, 13, 16, 25, 29																										
LD-3B-35-TC-E3	A3	The Lardner - Elevations	5.3	27, 30																										
LD-3B-35-P2	A3	The Lardner - Floor Plans																												
LD-3B-35-TC-E4	A3	The Lardner - Elevations	5.4	17																										
LD-3B-35-P3	A3	The Lardner - Floor Plans																												
WL-3B-35-TC-E1	A3	The Walker - Elevations	5.1	9																										
WL-3B-35-P1	A3	The Walker - Floor Plans																												
RE-4B-25-TC-E1	A3	The Readmaker - Elevations	5.1	1, 2, 5, 6, 20, 21, 24, 25																										
RE-4B-25-P2	A3	The Readmaker - Floor Plans																												
RE-4B-25-TC-E2	A3	The Readmaker - Elevations	4.9	4, 26																										
RE-4B-25-P3	A3	The Readmaker - Floor Plans		Drawing Omitted																										
APARTMENTS																														
TOA-35-TC01-E1	A1	Tomplon Court - Town Vernacular - Elevations	32-54																											
TOA-35-TC01-E2	A1	Tomplon Court - Town Vernacular - Elevations																												
TOA-TC01-P1	A1	Tomplon Court - Floor Plans																												
TOA-TC01-P2	A1	Tomplon Court - Floor Plans																												
TOA-TC01-P3	A1	Tomplon Court - Floor Plans																												
ANCILLARIES																														
092102-C001		Cycle Shed 01 - Floor Plan & Elevations	/													/	/	/												
092102-C001+		Bin Store - Floor Plans & Elevations	/													/	/	/	Drawing omitted											
DISTRIBUTION																														
Client			Bellway																											
Planning Consultant			Savills																											
Coordinated / Issued / Filed by																														
			SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP																
			SP	SP	JH	SP	SP	SP	SP	SP	SP	SP	SP																	

DRAWINGS ISSUED

(D) = Electronic DWG (P) = Electronic PDF (R) = Paper Copy