



The Old Brickworks, Reeds Lane,  
Sayers Common, Mid Sussex

Standard Assessment  
Procedure Calculations

July 2022

Daedalus Environmental Limited  
61 London Road  
Maidstone  
Kent  
ME16 8TX

E: [enquiries@daedalusenvironmental.co.uk](mailto:enquiries@daedalusenvironmental.co.uk)  
W: [www.daedalusenvironmental.co.uk](http://www.daedalusenvironmental.co.uk)

Version	Final	Date	July 2022
Authors	Philip Jackson, Meroë Blackford		
Client:	Reside Developments Ltd		
Contact:	Fay Goodson		
Address:	The Dutch House, 132-134 High Street, Dorking, Surrey, RH4 1BG		

This document has been prepared in accordance with the scope of the Daedalus Environmental's appointment with its client and is subject to the terms of that appointment. It is for the sole use of Daedalus Environmental's client and for the purposes, stated herein, for which it was prepared. As such Daedalus Environmental accepts no liability, howsoever incurred, by any third party, through the use of this document. No person other than the client may copy (in whole or in part) use or rely on the contents of this document, without prior written permission of Daedalus Environmental Limited. Even with the granting of said permission, the document may still only be used for the purpose for which it was originally intended, i.e. to support the planning application for the development named herein. The contents of this document are not to be construed as providing legal, commercial, financial, business, tax advice or opinion. Guideline costs, where provided, are for illustration only.

## Contents

1	Introduction.....	4
1.1	This Document.....	4
1.2	Site Layout.....	4
2	Building Energy Performance Targets.....	6
3	Baseline Energy Demands.....	7
4	Conclusion .....	7

# 1 Introduction

## 1.1 This Document

1.1.1 This document forms an addendum to the *Sustainability Statement* which supports the hybrid planning application for the proposed development at the Old Brickworks, Reeds Lane, Sayers Common within Mid Sussex district.

1.1.2 Standard Assessment Procedure (SAP) calculations have been completed to accompany the new proposed layout for the site. The new iteration of SAP, Design SAP10 has been used to demonstrate that the site is fully compliant with the updated Building Regulations Approved Document L which came into force in June 2022.

## 1.2 Site Layout

1.2.1 The updated site layout is shown below:



Figure 1: Site Layout (CMYK (Planning and Design) Ltd)

## 2 Building Energy Performance Targets

- 2.1.1 Table 1 below summarises the proposed levels of performance for the different building elements, and it is these values that have been used in the detailed energy calculations shown in section 3. This has been compiled by using the good practice specification for a dwelling built with a heat pump as described in Appendix D of the new *Approved Document L – Conservation of Fuel and Power Volume 1: Dwellings (December 2021)* as a starting point and then customising it to ensure compliance for each housetype on the proposed development.
- 2.1.2 As shown in the table, the indicative specification for the proposed development considerably exceeds the minimum performance standards of the previous Building Regulations 2013. Furthermore, they also meet or exceed the new limiting U-values in the amended Building Regulations from June 2022.
- 2.1.3 Building Regulations allow for flexibility in how standards are achieved, and it may be that this specification evolves as the design progresses – the overall performance standards however will be achieved.

Element Type	Limiting U-Values for New Fabric Elements and Air Permeability in New Dwellings		Target U-Values for Proposed Development (W/m <sup>2</sup> K)
	Building Regulations 2013 Maximum (W/m <sup>2</sup> K)	Building Regulations 2022 Maximum (W/m <sup>2</sup> K)	
Roof / Sloped Roof	0.20	0.16	0.09-0.11
External walls	0.30	0.26	0.18
Party walls		0.20	0.00 (filled and sealed)
Ground floor	0.25	0.18	0.13
Glazing / doors	2.00	1.6	1.0-1.2
Factor			Detail
Thermal bridging	Y-value < 0.15	Y-value < 0.20 (default)	Bespoke construction details individually calculated
Air permeability	10m <sup>3</sup> /m <sup>2</sup> /hour@50Pa	8.0m <sup>3</sup> /m <sup>2</sup> /hour@50Pa	3.5-5 m <sup>3</sup> /m <sup>2</sup> /hour@50Pa
Heating controls	Programmer, TRVs and room stats	Time and temperature zone control + TRVs	Time and temperature zone controls, TRVs + weather compensation

Table 1: Summary of Proposed U-Values and Specifications

### 3 Baseline Energy Demands

3.1.1 In order to calculate the property energy demands, Design SAP 10 calculations have been completed for each of the different house types designed for the development, using the specifications described above, including the application of ASHPs. This establishes the regulated energy demands for space heating, domestic hot water and regulated electricity.

Residential Accommodation			SAP 10 results		
House Type	Internal Floor Area (m2)	DER	TER	% Reduction	
AF1	1 bed ground floor flat	61	4.51	15.25	70.43%
AF2	1 bed top floor flat	55	4.46	16.94	73.67%
A	1 bed detached chalet bungalow	105	4.02	12.59	68.07%
AF3 ET	2 bed end of terrace	80	3.98	13.81	71.18%
AF3 MT	2 bed mid terrace	80	3.63	12.69	71.39%
AF4	3 bed end of terrace	94	3.61	12.43	70.96%
AF5	2 bed end of terrace	79	4.14	14.52	71.49%
B	2 bed semi detached	79	4.06	13.68	70.32%
C	3 bed detached house	95	4.04	13.6	70.29%
D	3 bed detached house	103	3.98	13.7	70.95%
E	4 bed detached house	130	3.57	12.22	70.79%
F	4 bed detached house	146	3.46	11.53	69.99%
G	3 bed detached house	105	4.16	13.17	68.41%
AVERAGE					70.61%

Table 2: Baseline Energy Demands per Property Type

### 4 Conclusion

4.1.1 The SAP 10 calculation results demonstrate that the proposed development will be compliant with Approved Document L of the new Building Regulations 2021 that came into force in June 2022.

4.1.2 Indeed, it can be seen within the table that the properties exceed Building Regulation requirements – the difference between the Dwelling Emission Rate (DER) and Target Emission Rate (TER) – by over 70% on average.