

Sustainability and Energy Statement

Proposed New Build Dwelling

Elysian Sky (Formally Wycherley Croft), Weston Road, Luffenhall, SG2 7PU

Prepared for: North Herts Council

Date: 09/03/2026

1. Introduction

This Sustainability and Energy Statement has been prepared in support of the proposed new build dwelling at **Elysian Sky(formally Wycherley Croft, Luffenhall)**. The purpose of this document is to demonstrate how the proposed development incorporates sustainable design principles and complies with relevant national and local planning policies relating to energy efficiency, carbon reduction, sustainable transport, and biodiversity enhancement.

The development has been designed in accordance with the **Building Regulations Part L (2021)** energy efficiency standards and has been assessed using the **Standard Assessment Procedure (SAP)**. The results demonstrate compliance with the required carbon emission and primary energy targets.

The design adopts a **fabric-first approach**, supported by low-carbon heating technology and sustainable site measures.

2. Energy Strategy

The proposed development follows a hierarchical energy strategy consistent with UK planning policy:

1. Reduce Energy Demand

High performance building fabric and efficient design reduce heating demand.

2. Use Efficient Building Services

Efficient heating and hot water systems minimise operational energy consumption.

3. Use Low Carbon Technologies

An air source heat pump is proposed to significantly reduce carbon emissions.

3. Fabric First Approach

The dwelling has been designed to minimise heat loss through the building envelope by incorporating high levels of insulation and efficient glazing.

Measures include:

- Installation of **high-performance rigid insulation** within the walls, floors and roof structure.
- Energy efficient **double glazed windows and doors**.
- Improved **airtightness detailing** to minimise uncontrolled air leakage.

- Careful construction detailing to **reduce thermal bridging**.

Indicative U-values include:

Building Element Indicative U-Value

External Walls ~0.18 W/m²K or better

Roof ~0.13 W/m²K or better

Ground Floor ~0.13–0.15 W/m²K

Windows/Doors ~1.20 W/m²K

These values meet or exceed the requirements set out in **Approved Document Part L**.

4. Heating and Hot Water

The dwelling will utilise an **Air Source Heat Pump (ASHP)** to provide space heating and domestic hot water.

Air source heat pumps extract renewable heat from the outside air and operate at significantly higher efficiencies than traditional fossil fuel systems.

Key benefits include:

- Reduced carbon emissions compared to gas boilers
- High efficiency performance
- Compatibility with our new low-temperature underfloor heating system
- Contribution toward national net-zero carbon objectives

This low-carbon heating solution significantly reduces the operational carbon footprint of the dwelling.

5. SAP Assessment

A SAP assessment has been undertaken for the proposed dwelling.

The results confirm that:

- The **Dwelling Emission Rate (DER)** is lower than the **Target Emission Rate (TER)**.
- The **Dwelling Primary Energy Rate** meets regulatory requirements.
- Fabric energy efficiency standards have been achieved.

The development therefore complies with the energy performance requirements of **Building Regulations Part L (2021)**.

A copy of the SAP summary will be submitted at the bottom of this statement.

6. Electric Vehicle Charging

In support of sustainable transport and the transition to low-emission vehicles, the development will incorporate **electric vehicle (EV) charging infrastructure**.

The proposal includes:

- Installation of **dedicated EV charging point(s)** for our residential use.
- Infrastructure designed in accordance with **Building Regulations Part S** requirements.

Providing EV charging facilities supports the adoption of low-carbon transport and reduces transport-related emissions associated with the dwelling.

7. Biodiversity Enhancement

Although the proposal relates to a single residential dwelling, opportunities have been taken to provide biodiversity improvements within the site.

Proposed measures include:

- Provision of **new planting within the garden areas** to enhance habitat diversity.
- Installation of **native or pollinator-friendly planting species**.
- Installation of **bird boxes** integrated within the building or landscaping.
- Retention or enhancement of existing vegetation where feasible.

These measures contribute positively to local biodiversity and align with the objectives of the **Environment Act 2021** and national planning policy encouraging ecological enhancement within development sites.

8. Sustainable Construction Measures

The development incorporates additional sustainability considerations including:

- Energy efficient lighting and appliances throughout the dwelling.
- Water efficient fixtures and fittings to reduce water consumption.
- High quality building materials designed to improve long-term durability and performance.

These measures contribute to a dwelling that is both environmentally responsible and energy efficient.

9. Conclusion

The proposed development demonstrates a clear commitment to sustainable design and energy efficiency through the following key measures:

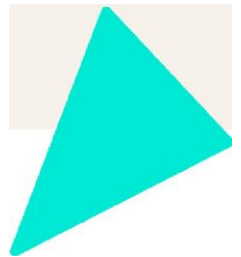
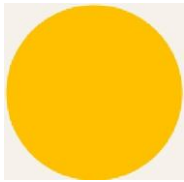
- Fabric-first construction approach with high levels of insulation

- Compliance with **SAP and Building Regulations Part L (2021)**
- Installation of an **air source heat pump** providing low-carbon heating
- Provision of **electric vehicle charging infrastructure**
- Inclusion of **biodiversity enhancement measures**
- Energy efficient building services and lighting

Collectively, these measures ensure that the proposed dwelling delivers a sustainable, energy efficient development consistent with national planning policy and local authority sustainability objectives.

See Below SAP and Overheating passed documentation;

Design SAP Calculation Build Specification



ATSP\CE

DELIVERING BEYOND COMPLIANCE

SAP Design Specification

Purpose of this Document

This document has been created to assist house builders in maintaining a clear and consistent specification for each dwelling type. It serves as a useful reference for both historic builds and future developments. It's taken a little extra time to put together — but we're always looking to add value where we can.

Site Address	Elysian Sky, Luffenhall, Stevenage, Hertfordshire, SG2 7PU
Dwelling Types	1
Plot Numbers	Elysian Sky
Date	27th Feb 2026

Important – Please Read

To issue your EPC and As Built documentation, we must have photographic evidence at key build stages. This is a strict requirement due to regular audits — no photos means no documents.

To make this easier, please use this application that we highly recommend:

www.SAPAPP.co.uk



It tells you exactly what photos are needed and when to take them.



Client & Job Information

Company Name	Bowden Property Developments	Contact Name	Ron Bowden
Unique ID	OKDHnb4R	Job Reference	S39693
Type References	Elysian Sky		
Plot Types	1	Plot Numbers	Elysian Sky
Site Address	Elysian Sky, Luffenhall, Stevenage, Hertfordshire, SG2 7PU		
Approx. Build Time	0 - 6 Months		
Building Regulations	England Building Regulations Part L 2022		
EPC Target	To Be Specified		
BFRC / FENSA Certificate	No	MCS Certificate	No
Required Services	SAP-New Build, Simplified Overheating		



Floor Construction

Floor 1

Includes Ground Floor	Yes	Insulation	Rigid
Insulation Thickness	160mm	Insulation Brand	
Screed Thickness	70mm	Subfloor Construction Material	Concrete Slab
Subfloor Construction Thickness	200mm		



Wall Construction

External Wall 1

Wall Type	Timber Frame	Outer Leaf Material	Block
Outer Leaf Thickness	100.0mm	Cavity Size	30mm
Cavity Ventilated	Yes	Sheathing Board Material	Brick
Sheathing Board Thickness	11.0mm	Stud Thickness	140.0mm
Stud Centre Spacing	600mm		
Insulation Between Studs	PIR	Insulation Thickness Between Studs	120.0mm
Insulation Brand Between Studs	Celotex	Insulation Over Studs	PIR
Insulation Thickness Over Studs	60.0mm	Insulation Brand Over Studs	Celotex
Wall Covering	Plasterboard & Skim		
WallCovering Thickness	15.0mm		



Roof Construction

Roof Construction 1

Roof Type	Sloped Roof (Warm)	Insulation Over Rafter	PIR
Insulation Thickness Over Rafter	60mm	Insulation Brand Over Rafter	Not Specified
Insulation Between Rafter	PIR	Insulation Thickness Between Rafter	120mm
Insulation Brand Between Rafter	Not Specified	Rafter Depth	200mm
Rafter Width	45	Rafter Centre Spacing	600mm



Openings

Windows

Type	Low E	U-Value	1.20W/m² K
G-Value	0.63		

Solid Doors

U-Value	1.20W/m² K		
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Glazed Doors

U-Value	1.20W/m² K	G-Value	0.63
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Roof Lights

U-Value	1.20W/m² K	G-Value	0.63
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Heating & Ventilation

Heating System

Make	Valliant	Model	AroTHERM plus 7kW & AI 300l
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Water Heating

Cylinder Size	300 Litres
Heating Controls	Time and Temperature Zone Control
Secondary Heating	None

Ventilation

Vent Type	Continuous Extract - System 3
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PV

Any PV?	No	Output	0kW
With Battery?	No	Battery Size	0kW

Other Renewables

Other Renewables	Unknown
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SAP Timeline Checklist

This checklist helps you keep track of the key compliance steps needed during your build and at the finalisation stage. Tick off each step as you go. ATSPACE can assist with every stage.

Site Stage

- ☐ Take **photographs at the stipulated Part L key stages** (use [SAPAPP.co.uk](https://www.sapapp.co.uk) to ensure correct evidence is captured - do not rely on your own interpretation of "key stages")
- ☐ Follow the agreed design specification (inform us of any changes to insulation, heating, or renewables, as these may affect compliance)
- ☐ Complete your **Water Consumption Calculation** (Part G) - ATSPACE can assist
- ☐ Complete your **Overheating Assessment** (Part O) - ATSPACE can assist
- ☐ Arrange your **Air-Tightness Test** - ATSPACE can assist
- ☐ Arrange your **Ventilation Flow Rate Test** (Part F) - ATSPACE can assist
- ☐ If required, arrange your **Sound Insulation Testing** (Part E - party wall/floor) - ATSPACE can assist

Finalisation Stage

- ☐ Send the **Air-Tightness Certificate** to your SAP Assessor (we cannot finalise without this)
- ☐ Provide the **BFRC certificate** for your windows (if declared in your glazing specification)
- ☐ Supply a **full photographic report** showing the **stipulated Part L stages** captured clearly



Pre-Completion Sign-Off

- ☐ A Dwelling Sign-Off Report
- ☐ A Thermal Bridging Report

Completion

- ☐ As-Built Specification & Documentation
- ☐ OCEPC - On-Construction Energy Performance Certificate

Need Support?

For guidance at any stage of your build, contact **ATSPACE Ltd**:

Tel: 0345 6465 454

Email: energy@atspaceltd.com

www.atspaceltd.co.uk



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- ✓ Energy Statements
- ✓ Water Efficiency Calculations
- ✓ SAP Calculations
- ✓ Overheating Assessment
- ✓ SBEM Calculations
- ✓ Overglazed Extension Calculations
- ✓ U-Value Calculations
- ✓ PSI Values

ENERGY CERTIFICATION

- ✓ New Build/Conversion Commercial EPC Certification
- ✓ New Build/Conversion Domestic EPC Certification

PART-BUILT SERVICES

- ✓ Diagnostic Air Leakage Testing
- ✓ Pre-Improvement Sound Insulation Testing
- ✓ Air Leakage On Site Design Advice
- ✓ Diagnostic Smoke Testing

AS-BUILT SERVICES

- ✓ Commercial Air Leakage Testing
- ✓ Residential Air Leakage Testing
- ✓ Retrofit Air Leakage Testing
- ✓ Passive House Air Leakage Testing
- ✓ Ventilation Flow Rate Commissioning / Balancing
- ✓ Sound Insulation Testing
- ✓ Smoke Shaft Air Leakage Testing
- ✓ Smart HTC
- ✓ Background Ventilation

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Overheating Calculation Passed

Approved Document O - Simplified Method Report

The Assessment for Elysian Sky White Hill is currently passing the simplified overheating risk assessment for the following reasons:

- The glazing surface area of the most glazed orientation of the dwelling, does not exceed the maximum allowable area of glazing.
- The actual free area of all the openings combined is more than the target free area of all the openings combined (as a percentage of the floor area).
- The actual free area of all the openings combined is more than the target free area of all the openings combined (as a percentage of the glazing area)
- The Actual free area of the opening in any or all of the bedrooms is more than the target free area (target is 4.00% of the floor area of the specific bedroom).

Because the assessment achieves compliance with Approved Document O, no further action is required and this can now be signed off by building control.

Building and Site Details			
Residential building name/number		Elysian Sky	
Street		Weston Road	
Town		Luffenhall	
County		Hertfordshire	
Postcode		SG2 7PU	
Proposed building use/type of building		Dwelling	
Are there any security, noise or pollution issues?		N/A	
Site Details			
Is this building high risk and shading strategy required?		Mod Risk No	
Shading strategy included? (Give details)		No shading strategy included	
Results			
	Target	Result	Pass/Fail?
Maximum area of glazing (%)	18	6.82	Pass
Maximum area of glazing in the most glazed room (%)	37	30.33	Pass
Total minimum free area as % floor area (m²)	20.51	27.02	Pass
Total minimum free area % glazing area (m²)	22.52	27.02	Pass
The greater of the minimum free area(floor area or glazing area) should pass - Highlighted yellow			
Bed 1 min free area (m²)	0.70	1.26	Pass
Bed 2 min free area (m²)	0.63	2.84	Pass
Bed 3 min free area (m²)	0.98	1.25	Pass
Bed 4 min free area (m²)	1.10	2.20	Pass
Bed 5 min free area (m²)	0.00	0.00	Pass
Bed 6 min free area (m²)	0.00	0.00	Pass
Dwelling overall result		Pass	
Designer's declaration			
Designer's name		Steve Crow	
Designer's organisation		ATSPACE LTD	
Designers email		steve.crow@atspacehd.com	
Designers contact number		1763793960	
Designer's signature			
Registration number (if applicable)		C295-0001	
Date of design		27/02/2026	