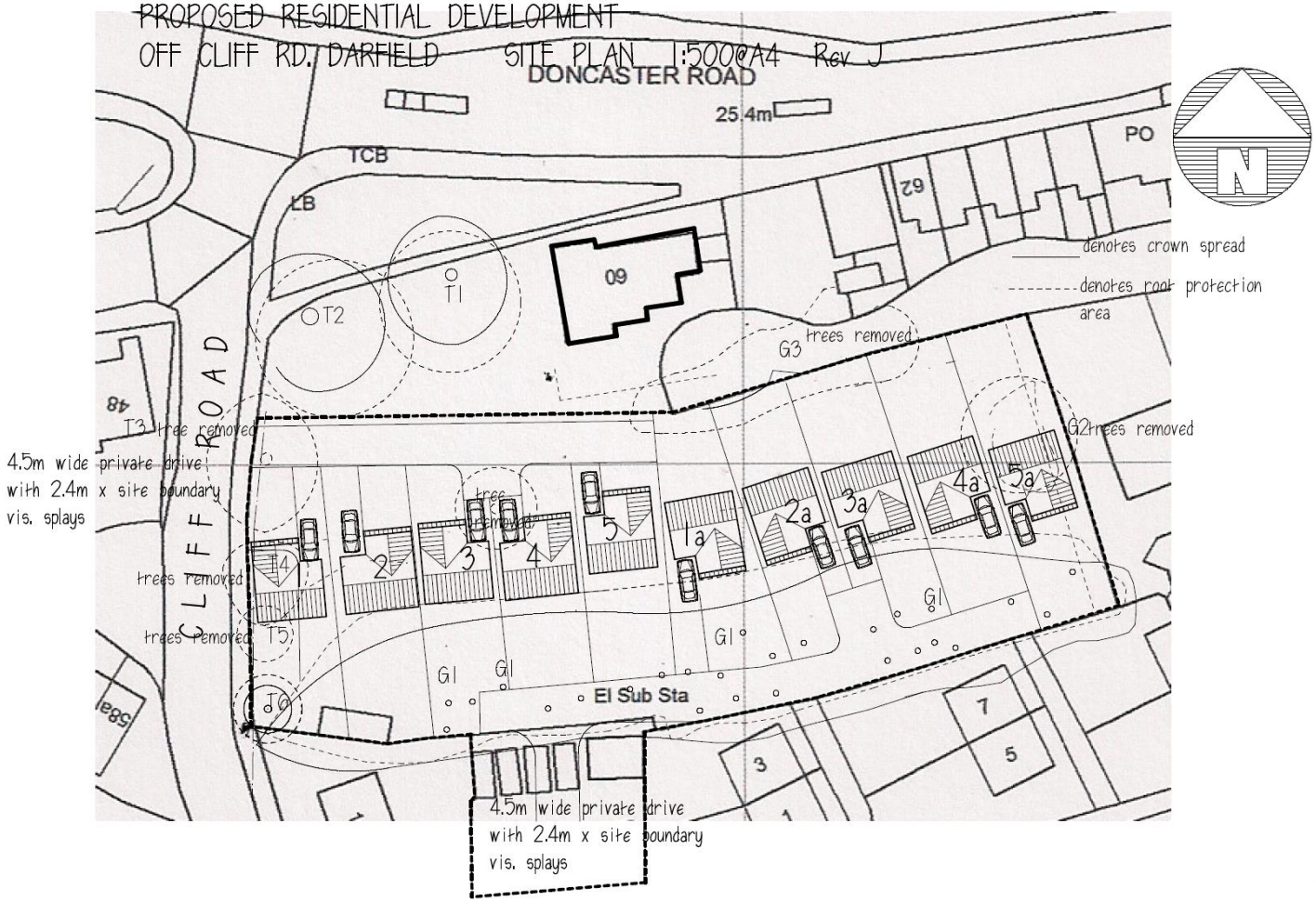

PROPOSED RESIDENTIAL DEVELOPMENT
OFF CLIFF RD. DARFIELD SITE PLAN 1:500@A4 Rev J
DONCASTER ROAD
25.4m
PO
TCB
LB
62
09
T1
OT2
denotes crown spread
denotes root protection area
G3 trees removed
G2trees removed
48
T3 tree removed
4.5m wide private drive with 2.4m x site boundary vis. splays
CLIFF ROAD
tree removed
trees removed
trees removed
T4
T5
T0
1a
2a
3a
4a
5a
G1
El Sub Sta
7
5
3
4.5m wide private drive with 2.4m x site boundary vis. splays

Project: Land Off Cliff Road, Darfield

Assessment: Energy Statement

SECTION			CHECKED		
REV	TITLE	BY	BY	DATE	SIGNED
00	Energy Strategy Report	CS	WN	02.02.2024	

Section 1.0 – Executive Summary

This simplified energy statement has been prepared to demonstrate compliance and explore options to achieve the Part L & local authority planning requirement for the proposed development at Cliff Road, Darfield.

The current proposal for the project consists of ten newly created dwellings situated on the same site.

The local planning guidance states: An Energy/Sustainability Statement should demonstrate how the proposed development would minimise resource and energy consumption compared to the minimum required under current Building Regulations legislation and how it is located and designed to withstand the longer-term impacts of climate change. It should also detail how the proposed development would incorporate decentralised, renewable or low carbon energy sources."

The preliminary design assumption will be for all dwellings to incorporate the latest and most high-efficiency design options avalible for the properties. The design will utilise high performing building fabrics as a fabric first, passive design approach. The service strategy will incorporate either heat pumps or gas boilers as the main heating & hot water source, with the addition of photovoltaic arrays with potential additional battery storage systems.

The proposed design will aim to achieve:

- Meet / exceeds Part L1A 2021 compliant standards
- Minimum 10% contribution from renewable technologies.
- Minimum B rated properties
- High efficiency and low environmental impact dwellings.

Section 1.1 – Fabric U-Values

The scheme aims to demonstrate that it achieves a considerable carbon (DER/TER) and fabric energy (DFEE/TFEE) compliance by the means of an efficient design.

Following review, it has been assumed that the building will be constructed with high performing building fabrics & low element U-values.

The U-values currently show that the overall efficiency of the building from a fabric perspective will show around a 10% improvement against the notional building standards (L1A).

Target U-Values:

Building Fabrics	Notional U-Value (W/m²K)	Proposed U-value (W/m²K)
Ground Floor	0.13	0.12
External Walls	0.18	0.18
Roof	0.11	0.10
Windows	1.40	1.20
Doors	1.40	1.20
Roof lights	1.40	1.20

Section 1.2 – Air Permeability

The current air tested targets are assumed to be:

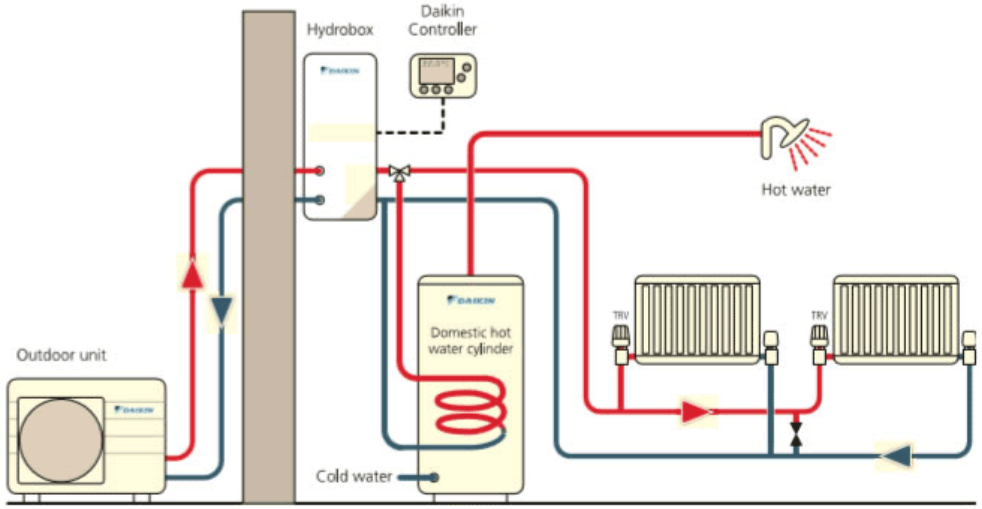
- Notional value of **5** m³/hr/m²@50 Pa.
- Target value of **4** m³/hr/m²@50 Pa.

Section 1.3 – Heating & Hot Water

The current proposal assumes that the main heating & hot water source will be supplied via heat pump technology. At this stage this is assumed to be either a ground (viability dependant) or air sourced system. The system will be electrically powered and is to have an efficiency (SCOP) in excess of 400% (4.0).

As the new Part L 2021 is now introduced and with the reflected change in carbon emissions from electric has a fuel – This would be a favourable option to meet compliance and reduce down the running cost and demand of the dwellings.

A further option of Gas boilers will be ran to check compliance and performance and a detailed analysis of this option will be explored – This will be completed at a later stage, once the design progresses.



Section 1.5 – LZC Technology

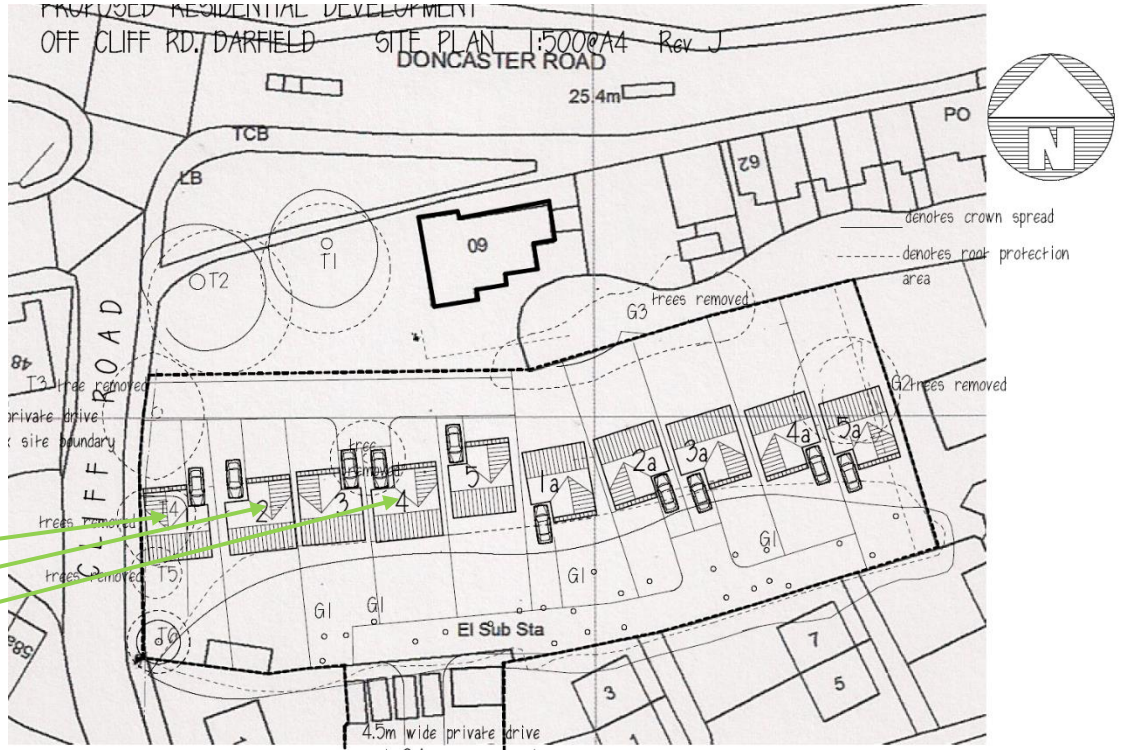
The scheme is assumed to incorporate low or zero carbon renewable technologies through the following:

1. Heat pumps providing heating & hot water
2. Photovoltaics (PV) arrays with potential for additional battery storage

The site benefits from being and open-plan site with no overshading issues. The dwellings are generally orientated on a North / South orientation with sloped roofs making these suitable to house PV arrays.

From the site plan (adjacent) it is evident that each dwelling would be able to house a individual system of reasonable size (1-3kWp) which would provide a positive impact to the building performance.

By incorporating the above into the design will provide high efficiency, low impact buildings.



Section 2.0 – Conclusion

By incorporating all of the above options into the design will provide high efficiency buildings with a low environmental impact, both meeting and exceeding minimum Part L standards and the local authority planning requirements.

The overall design of the building with high performing building fabrics & low air tightness will significantly reduce the building energy demand alone, providing fabric first approach. By then incorporating high efficiency heating and hot water systems (heat pumps) and introducing LZC technologies, will ensure that the buildings can run in an efficiency and sustainable manner.

The proposed design will aim to achieve:

- Meet / exceeds Part L1A 2021 compliant standards
- Minimum 10% contribution from renewable technologies.
- Minimum B rated properties
- High efficiency and low environmental impact dwellings.

Once the scheme progresses it is expected that a detailed design and assessments will be carryout on each of the properties to ensure that the proposed planning targets are achieved.

Various design options will be explored to ensure the most practical and efficient design for the scheme.

It is also advised that further assessments will be carried out inline with Part O (overheating) & Part F (ventilation) regulations to ensure compliance and to future proof the site in terms of potential climate change issues.