



Design and Access Statement

Kirknewton Solar & BESS

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Basis of Report

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Acronyms and Abbreviations

AC	Alternating Current
AIVL	Abnormal Indivisible Load Vehicles
AGL	Above Ground Level
ALC	Agricultural Land Capability
AOD	Above Ordnance Datum
AWI	Ancient Woodland Inventory
BESS	Battery and Energy Storage System
CEMP	Construction Environmental Management Plan
CHIA	Cultural Heritage Impact Assessment
DAS	Design and Access Statement
DC	Direct Current
EIA	Environmental Impact Assessment
FRDA	Flood Risk and Drainage Impact Assessment
ha	Hectare
IEF	Important Ecological Features
LEPO	Long established of Plantation Origin
MW	Megawatt
OBEMP	Outline Biodiversity Enhancement and Management Plan
ORIT	Octopus Renewables Infrastructure Trust
PAC	Pre-application Consultation
PAN	Planning Advice Note
PRoW	Public Right of Way
PV	Photovoltaic
SLA	Special Landscape Area
SPP	Species Protection Plan
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
WLC	West Lothian Council



1.0 Introduction

This Design and Access Statement (DAS) describes the design process and the resultant final design of the Kirknewton Solar & Battery Energy Storage System (BESS) project (the 'Proposed Development'), located approximately 1.5 km south of the village of Kirknewton. The Site is in the West Lothian Council (WLC) area. The DAS accompanies the planning application submitted to WLC seeking permission to construct and operate the Proposed Development.

The purpose of this DAS is to provide information on the principles and approach that have guided the design process. This DAS demonstrates how the Site and its surroundings have been fully assessed to ensure that the final design solution is the most suitable for the Site. It describes the starting point for the Proposed Development design, and subsequent alterations to the layout that were made in response to the issues that were identified through the consultation and assessment process. Details are also provided on the access arrangements to the Site.

This DAS should be read in conjunction with the Planning Statement, the Environmental Impact Assessment (EIA) Report and the Transport Statement, which contain information on the planning policy context, the design iteration process, predicted landscape and visual effects, and access arrangements.

The DAS fulfils the requirements of The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013, which mandate a DAS for all 'national' and 'major' developments. As the Site exceeds 2 hectares (ha), the Proposed Development is classified as a Major development under The Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009, Schedule, Part 4. The preparation of this DAS has also considered relevant planning guidance, particularly Planning Advice Note (PAN) 68: Design Statements, which recommends that a DAS should include:

- Background information;
- Site details;
- Site and area appraisals;
- Design principles;
- Public involvement;
- Programme; and
- Design solution.



2.0 Background Information

2.1 Name of the Scheme

The Proposed Development is called Kirknewton Solar & BESS.

2.2 The Applicant

The application is submitted by Trio Power Limited, and the Proposed Development will be developed by BLC Energy Limited.

BLC Energy is a renewable energy development company specialising in developing solar photovoltaics and co-located battery storage projects across the UK. BLC Energy was set up in Scotland in 2022 to develop solar and BESS projects throughout the UK. The three partners have over 60 years' experience in developing renewable energy projects and have previously secured planning consent for three solar projects in Scotland.

BLC Energy is based in Perthshire and is currently developing eleven solar and BESS projects throughout the UK, including five in Scotland. Further information on BLC Energy can be found on the company website at www.blcenergy.com.

In 2023, BLC Energy entered into a development services agreement with Octopus Energy Generation (via Octopus Renewable Infrastructure Trust (ORIT)) on an exclusive basis. TRIO Power Limited was set up as the development company and is wholly owned by ORIT and managed by BLC Energy. BLC Energy is developing the Site on behalf of the Applicant, TRIO Power Limited.

ORIT is an Impact Fund with a core objective to accelerate the transition to net zero through its investments, building and operating a diversified portfolio of Renewable Energy Assets. ORIT is managed by Octopus Energy Generation.

Octopus Energy Generation is one of Europe's largest investors in renewables, operating around £4 billion of green energy generation across seven countries. Octopus Energy Generation operate solar and wind projects across the UK.

Further information on Octopus Energy Generation and Octopus Renewable Infrastructure Trust can be found at:

- <https://www.octopusenergygeneration.com/>
- <https://www.octopusrenewablesinfrastructure.com/>

2.3 Advisors

The Applicant appointed SLR Consulting to undertake the environmental assessments and advise on the design of the Proposed Development. The SLR team was supported by the following technical specialists:

- David Bell Planning (planning policy)
- TGP Landscape Architects (landscape and visual)

SLR has completed assessments of ecology and biodiversity, glint and glare, cultural heritage, hydrology, transport, and noise.



3.0 Site Details

3.1 Site Location

The Proposed Development Site is located approximately 1.5 km south of Kirknewton at Leyden Road, East Calder, West Lothian, EH27 8DQ, British National Grid NT 10783 65217. The Site location is shown on **Figure 1**.

3.2 Site Description

The total Site area within the red line boundary measures approximately 76 hectares (ha). The landform is gently sloping, with elevation varying from a high of 230 m Above Ordnance Datum (AOD) in the south of the Site to a low of 200 m AOD along the northern Site boundary. The Site is currently used for arable purposes. According to the Scotland Soils online database, the Site is Agricultural Land Capability (ALC) Class 4.2 and is therefore not prime agricultural land.

The Site is rural and is characterised within the immediate wider context by agricultural buildings, a small number of residential properties, tree plantations, a small pond and electrical infrastructure in the form of overhead pylons which transect the western part of the Site. The Site and its surroundings are well separated from any national or local landscape designations.

The Site is bisected by Leyden Road, which runs roughly north-west to south-east, linking the Site with the A70 to the south and A71 (via the B7031) to the north. The road bisects the Site into an eastern and a western land parcel. The Site will be accessed from Leyden Road and the A70 to the South. No Abnormal Indivisible Load Vehicles (AILVs) will be needed to deliver any components to the Proposed Development.

There are no recognised walking routes, rights of way, or core paths in the immediate vicinity. There are a small number of neighbouring residential properties in the vicinity, and those closest to the Site comprise Newlands (to the south-east), Leyden Old House (to the west) and two small groups of cottages in and adjacent to the wooded area to the north of the western land parcel. The closest designated heritage asset to the Site is the Category B listed Kirknewton House, located approximately 0.8 km north-east.

There is one watercourse running through the Site – the Green Burn – which rises in the eastern land parcel and flows in a north-easterly direction before discharging into the Gogar Burn approximately 3.5 km from the Site. There are no designated ecological sites present within the Site boundary, and there are no National, European or International designated sites for nature conservation within the vicinity of the Site.

According to NatureScot's Ancient Woodland Inventory (AWI) there is an area of AWI within the Site boundary along the eastern side of Leyden Road. However, this area has since been surveyed and is determined to be 'Long Established of Plantation Origin' (LEPO) rather than AWI. There is also an AWI designation 'Overton Woods' immediately to the north of the Site.



4.0 The Proposed Development

A detailed description of the Proposed Development is provided within **Chapter 4** of the EIA Report and it is fully illustrated on the figures and drawings which support the planning application. The layout of the Proposed Development is shown in **Figure 2**. A summary of the key elements of the Proposed Development is provided below.

- Photovoltaic (PV) module mounting frames;
- Battery units housed in containers;
- On-site substation;
- Inverter cabins to convert direct current (DC) electricity into usable alternating current (AC) power;
- Transformers;
- Underground cabling;
- Internal access tracks;
- Temporary construction compound;
- Underground cabling;
- Spares container;
- CCTV cameras mounted on posts;
- Perimeter fencing;
- Site drainage; and
- Biodiversity and landscaping enhancements.

5.0 Site Selection and Alternatives

The Site was identified as the appropriate location for the Proposed Development due to a number of environmental and technical considerations. This geographical area was identified as being appropriate for the Proposed Development because of its proximity to an available connection point at Currie Substation, located approximately 8 km east of the Site. The Applicant has accepted a grid connection offer at this point of connection for 2030.

Following engagement with landowners, a general area was identified, after which a feasibility and constraints analysis was undertaken by the Applicant. The environmental considerations that informed the siting included:

- Landscape and visual impact;
- Flood risk;
- Ecology and biodiversity;
- Hydrology;
- Transport and access; and
- Cumulative impact.



The location and layout of the Proposed Development within the Site have been carefully selected to safeguard critical infrastructure, minimise visual impacts, and avoid or mitigate environmental impacts as much as possible.

6.0 Public and Community Involvement

The Applicant has engaged with local communities throughout the design phases of the Proposed Development. This engagement has been undertaken through a variety of approaches. The **Pre-Application Consultation (PAC) Report** which accompanying the planning application provides detail of public engagement to date.

The Applicant held the following public consultation events:

- 12th June 2025 at Kirknewton Village Hall between 16:00 and 20:00;
- 16th June 2025, held online via Zoom from 18:30-19:30;
- 25th September 2025 at Kirknewton Village Hall between 16:00 and 20:00; and
- 29th September 2025 held online via Zoom from 18:30-19:30.

The main design feedback received at the first exhibition included:

- A request for substantial screening between the houses at Newlands and the Proposed Development;
- A request to maintain public access around the field perimeter; and
- A preference to avoid bringing any construction traffic through Kirknewton.

These issues were taken on board prior to the second event:

- Additional screening planting was added between the houses at Newlands and the Proposed Development;
- A publicly accessible path will be maintained around the Site perimeter; and
- Construction traffic will not be routed through Kirknewton.

7.0 Design Principles

7.1 Introduction

The design process for the Proposed Development involved the preparation and evaluation of multiple iterations for the layout and on-site ancillary infrastructure. To develop a layout that represents the most appropriate design, the process considered potential environmental impacts and effects, physical constraints, access requirements, and the relationship to adjacent land.

Key information was gathered through desktop research, field surveys, local planning policy review, planning constraints, and community engagement. This comprehensive baseline assessment helped identify and prioritise site-specific issues and sensitivities, guiding further detailed evaluations and influencing the design iterations of the Proposed Development.

The design evolution process is described below and in more detail within **Chapter 3** of the EIA Report.



7.2 Environmental Constraints and Opportunities

It is important to note that the identification of a constraint does not necessarily result in the exclusion of that area from the potential development envelope; rather it means that careful thought and attention was paid to the constraint and the design altered appropriately.

Environmental surveys were undertaken to inform the siting and design of the Proposed Development, and the environmental assessments detailed within the EIA Report and associated technical appendices.

- Ecology and Ornithology Surveys: An ecological walkover survey was undertaken to confirm habitats on-site and to check for protected species on-site. These surveys confirmed the majority of the habitats on-site are arable fields and modified grassland. Following consultation with NatureScot, a full season of breeding bird surveys was undertaken.
- Landscape and Visual: The landscape and visual team undertook a site visit to familiarise themselves with the landscape context and to take photography which has formed the baseline of the Landscape and Visual Impact Assessment (LVIA).
- Hydrology: A hydrological walkover survey was undertaken which informed the basis for the proposed Sustainable Drainage System (SuDS).
- Heritage: A cultural heritage and archaeology walkover survey was undertaken which informed the baseline of the Cultural Heritage Impact Assessment (CHIA).

7.3 Design Considerations

Taking into consideration the above constraints as well as advice from WLC and public feedback, the following principles were adopted where possible during the design iterations undertaken by the Applicant to ensure that the final design of the Proposed Development was the most suitable for the Site:

- Locating the BESS at least 500 m away from the neighbouring residential receptors as practical;
- Locating solar infrastructure at least 100 m away from neighbouring residential receptors;
- Maintaining hedgerows and trees within and surrounding the Proposed Development boundary;
- Utilising existing vegetation and terrain to maximise screening;
- Optimising the opportunity for biodiversity enhancement measures;
- Respecting a buffer zone from the overhead line which transects the western land parcel of the Proposed Development;
- Respecting a buffer zone from the Scottish Water pipeline which transects the Site;
- Respecting buffer zones from watercourses;
- Respecting buffer zones around woodland and key ecological habitats;
- Respecting a buffer zone around the heritage asset in the middle of the eastern land parcel; and
- Ensuring a walking track remains between the two fields in the eastern land parcel, and maintaining access to existing recreational paths.



7.4 Embedded Mitigation

Landscape and Visual

There are no national or local landscape designations within the Site boundary. However, the wider study area includes three Special Landscape Areas (SLA):

- Pentland Hills SLA, 300 m to the south;
- Almond & Linhouse Valleys SLA, 1.5 km to the north-west; and
- Ratho Hills SLA, 3 km to the north of the Site.

The Proposed Development will introduce a localised alteration in landcover from arable fields to a solar energy farm with BESS, surrounded by security fencing. There is potential for landscape and visual effects on a number of landscape and visual receptors including residential receptors, designated assets, Public Right of Ways (PRoWs) and landscape character. The advantages of the Site location from a landscape and visual perspective are that it:

- Is located away from most visual receptors, such as residential receptors, with the closest receptors being a small number of properties in Newlands that will mostly be screened from the Proposed Development.
- Takes advantage of the existing screening along Leyden Road in placing the BESS further away from nearby residential receptors and in a well screened location behind woodland.
- Would be beneficial to the landscape fabric of the local and wider area through the additional landscaping proposals within the Landscape Enhancement and Mitigation Plan (LEMP) (**Technical Appendix 6.5** of the EIA Report).

The layout of the Proposed Development has been considered within the iterative design process in order to minimise the impacts on the nearest receptors.

The key elements of the design which have considered the potential landscape and visual effects include:

- The layout and positioning of the solar array and BESS infrastructure;
- Colour and type of perimeter fencing; and
- Occasional / limited residual appearance of operations / maintenance vehicles and personnel.

Overall, the Applicant has made best efforts to design the Proposed Development to limit its landscape and visual effects as far as is reasonably possible, while also ensuring the Site can maintain maximum generation.

A full assessment of landscape and visual effects is presented in **Chapter 6** of the EIA Report.

Ecology

The ecological baseline has been considered throughout the design process for the Proposed Development with an aim to either eliminate or reduce the potential for any significant effects on receptors.

The Site does not overlap or intersect any statutory designated sites for nature conservation. The closest designation is Linhouse Valley Site of Special Scientific Interest (SSSI), located



approximately 2.6 km west of the Site boundary. The Site largely consists of arable fields and modified grassland.

The Proposed Development has been designed to avoid and/or minimise impacts on important habitats and protected species, where practicable. This has been achieved through an iterative design process and commitment to embedded mitigation. This process is combined with further commitments to the implementation of mitigation measures both prior to construction and throughout the construction period.

Following the successful implementation of mitigation measures, guided by the development of Species Protection Plan (SPPs), an Outline Biodiversity Enhancement Management Plan (OBEMP) and Construction Environmental Management Plan (CEMP), it is concluded that there will be no residual effects anticipated on important ecological features (IEF) arising from the Proposed Development.

A full assessment of ecology, biodiversity and ornithology effects is presented in **Chapter 5** of the EIA Report.

Flood Risk and Drainage

A Flood Risk and Drainage Impact Assessment (FRDA) has been undertaken and a SuDS has been designed into the Proposed Development. The required surface water attenuation is provided by a detention basin, which will be situated to the northwest of the compound, ensuring that surface water runoff can drain to the basin via gravity through interceptor drains eventually reaching the Green Burn watercourse. The proposed SuDS design can be seen in **Figure 1**.

7.5 Layout Iterations

Layout 1 (Preliminary Layout – May 2025)

This layout (**Figure 3**) was an initial design that represents maximum coverage and available grid capacity whilst considering known on-site constraints. Buffers were applied to the trees, drainage ditch, overhead line, Newlands residential receptors and an undesignated heritage asset.

Layout 2 (Design Chill – July 2025)

This layout (**Figure 4**) was developed following a design workshop, ongoing surveys and community engagement feedback. The BESS was moved slightly north to flatter ground. The route of the Scottish Water pipeline was identified and buffered. Further ecology buffers were introduced for protected species and the ancient woodland. The exterior fence along the north of the Site was relocated closer to the edge of the Site to allow for a 30 m buffer from the trees along the Site boundary.

Layout 3 (Design Freeze – September 2025)

This layout (**Figure 5**) was informed by ongoing survey work and design input. A SuDS pond was added north of the BESS, the buffer around the Scottish Water pipeline was increased, and the buffer on the northern boundary was increased to pull the fence closer to the solar panels to allow for additional planting.

Layout 4 (Design Freeze Update – October 2025)

This layout (**Figure 6**) had minor changes to do with the SuDS pipeline location, a reduction of the number of battery containers, and the buffer between the Site and Newlands was increased to 100 m for additional woodland planting.



8.0 Design Freeze

Consideration of the main design principles and avoidance and minimising of environmental impacts resulted in the final design freeze as shown in **Figure 2**. It is considered that this resulting design freeze is the most appropriate for this Site and has taken on board feedback from the public, local stakeholders, WLC, regulatory bodies, and the environmental assessments undertaken.

The Proposed Development will consist of an array of solar PV modules with an export capacity of up to 40 Megawatts (MW). The modules will stand approximately 1 m above ground level (AGL) at their minimum point and will be angled up to 20° to the horizontal and arranged in rows. The maximum panel height will be up to 2.7 m AGL (**Figure 6**).

Each PV module will be fixed and mounted upon a prefabricated alloy metal frame. The frames will be anchored to the ground via steel piles which will be driven approximately 1 to 2 m below ground.

The Proposed Development also includes a BESS with an export capacity of 9 MW in a compound within the eastern land parcel (**Figure 7**).

Further details of the Proposed Development are provided within **Chapter 4: Proposed Development** of the EIA Report.

9.0 Access Strategy

The construction and operational accesses to the Site have been carefully assessed throughout the design process. Details can be found in the **Transport Statement** (Technical Appendix 2.4 of the EIA Report).

Vehicular access to the Site via the A70 and Leyden Road has been selected as the most viable and least disruptive option, ensuring controlled and efficient vehicle movement while reducing transport impact on the local road network.

From Leyden Road, the Site will be accessed from two existing field access points. Both accesses will be improved to make them suitable for vehicles entering the Proposed Development.

There are several informal routes that run within and just outwith the Site. At least a 5 m buffer has been maintained around the perimeter of the Site to allow continued recreational access around the Site during the operation of the Proposed Development.

10.0 Conclusion

The final layout has been informed by a robust environmental assessment and design iteration process, taking into account physical constraints, potential environmental, landscape and visual impacts and their effects. The information used to inform the design iteration process included consultation responses received, baseline data and the technical impact assessments undertaken.

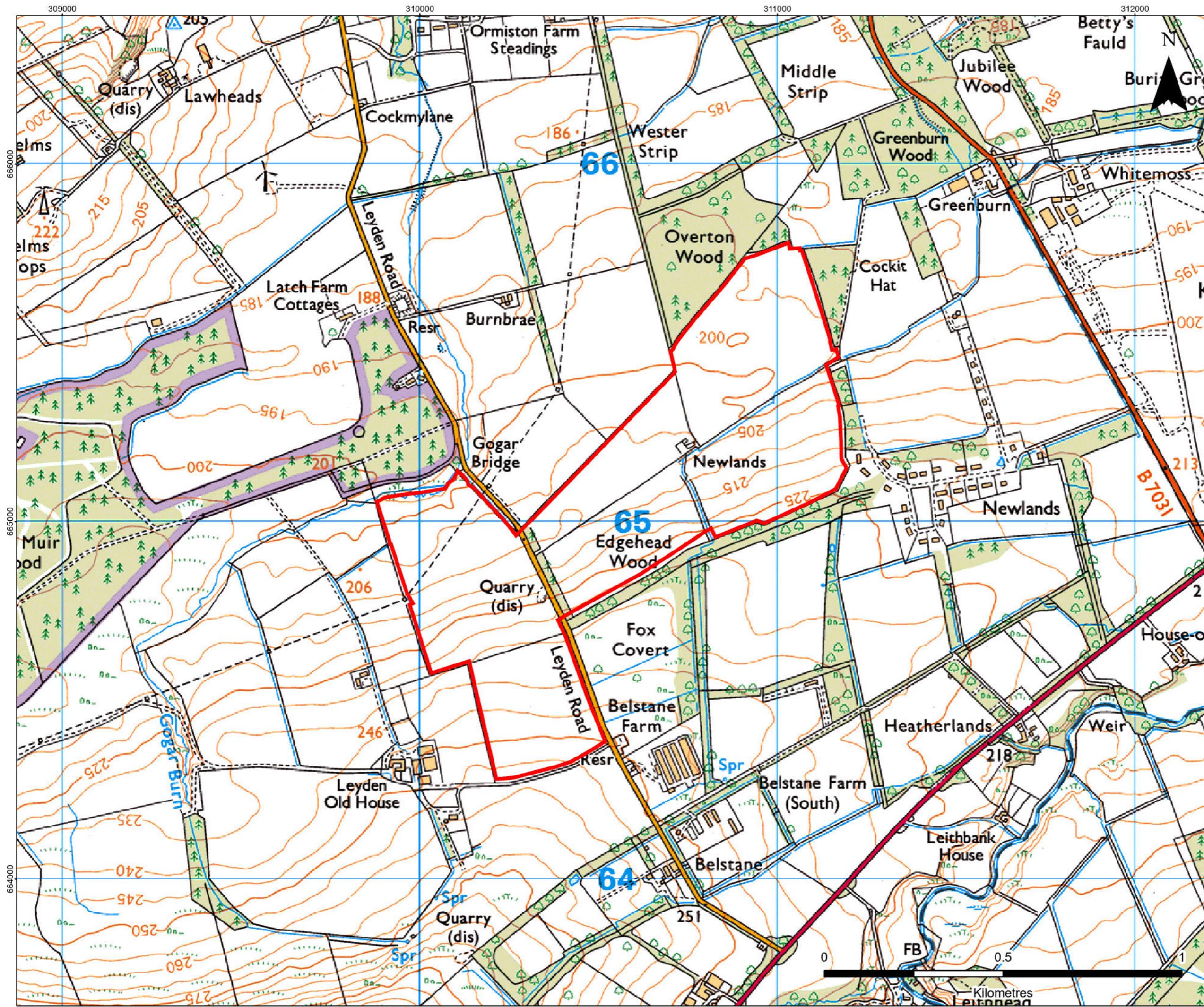
The final layout comprises an array of solar PV modules and a BESS with associated infrastructure, including mounting frames, inverters and transformers, substation and communications buildings, temporary construction compound, security fencing and on-site tracks as shown in **Figure 2**.

Overall, the Proposed Development is an appropriately designed, sensibly located, and completely sustainable development which is in line with policies in the local and strategic



development plans and conforms to national policy. It will provide a valuable contribution to economic growth and renewable energy generation in the WLC area.





KIRKNEWTON SOLAR & BESS

DESIGN AND ACCESS STATEMENT

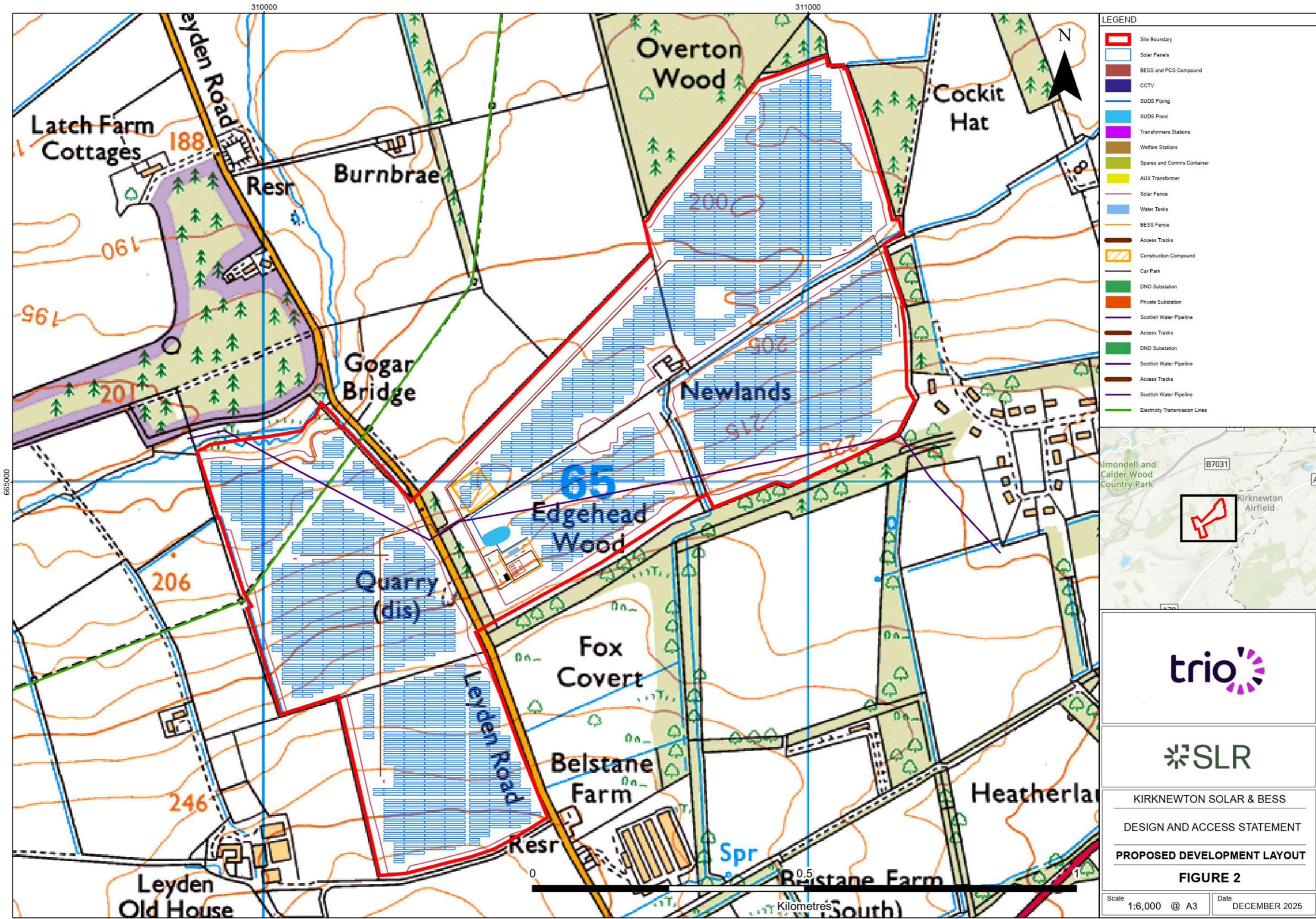
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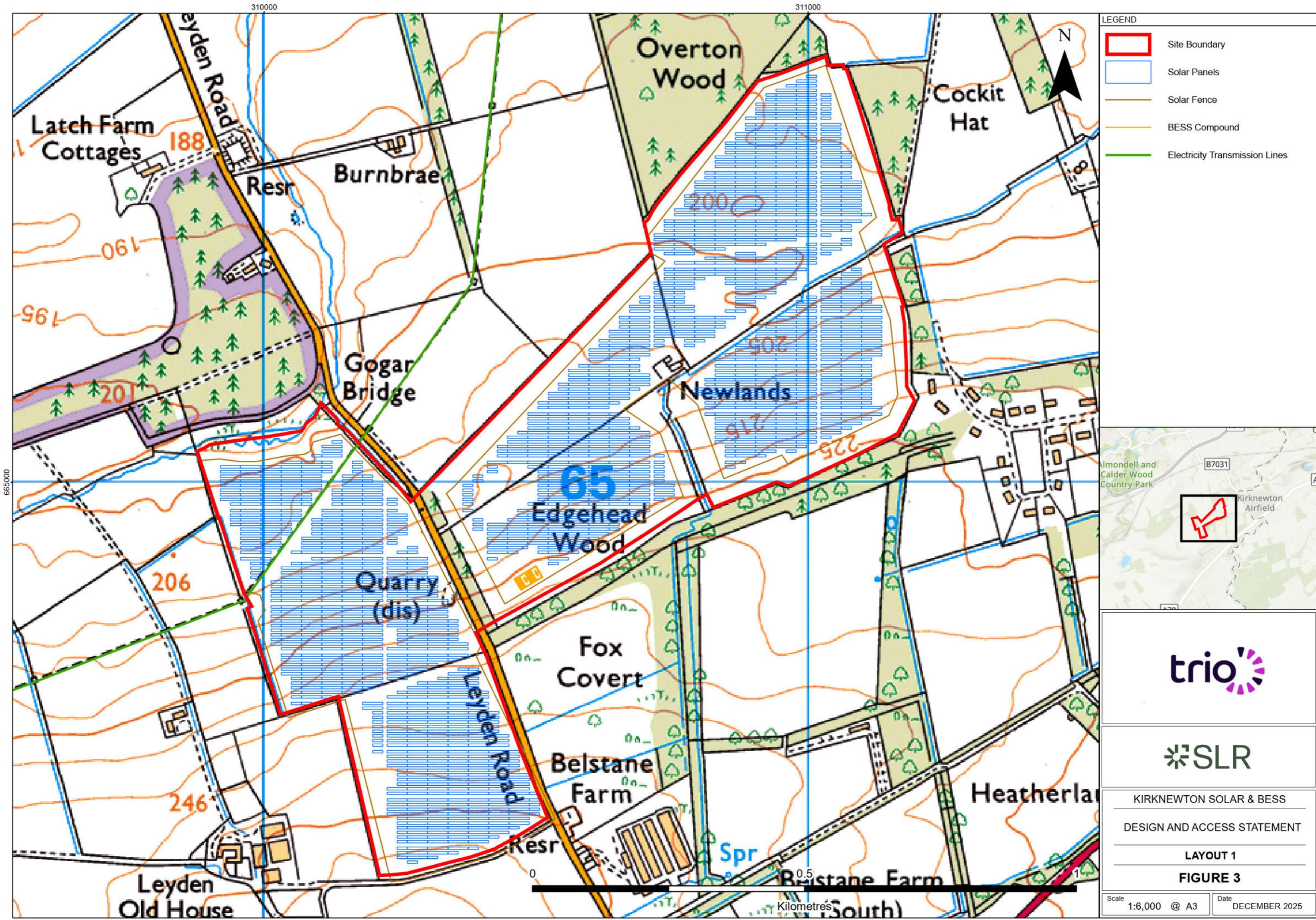
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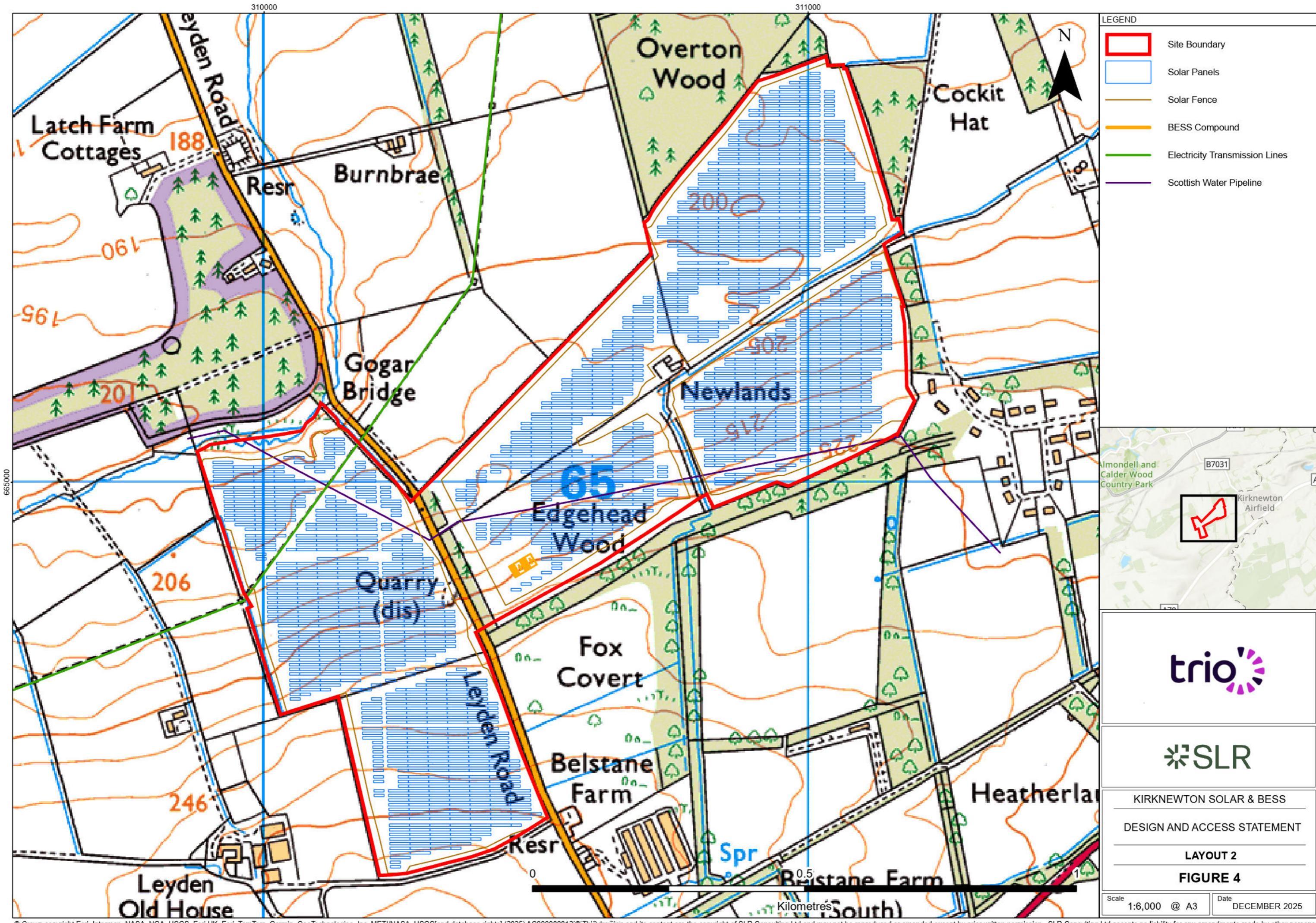
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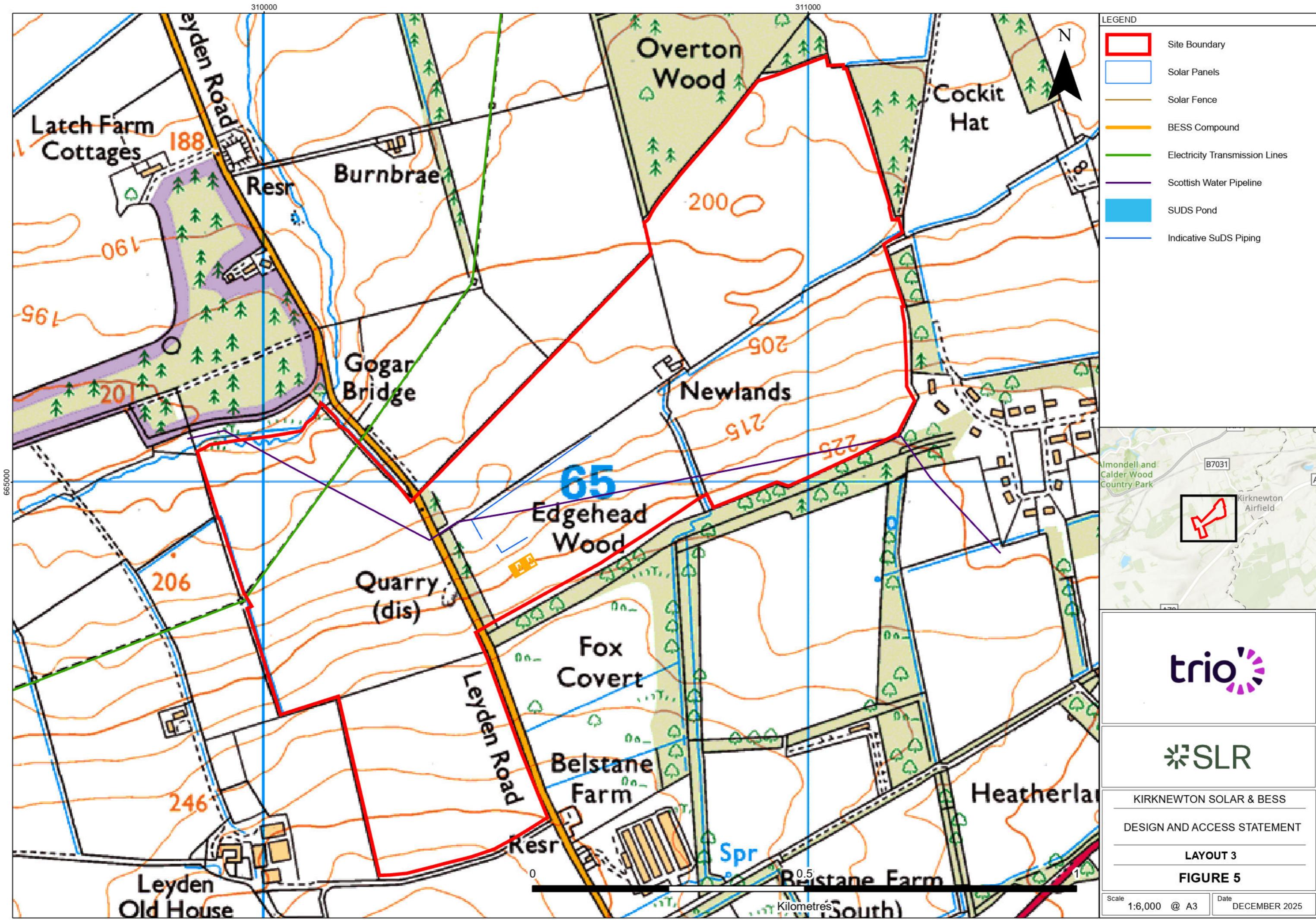
© Crown copyright Esri, Intermap, NASA, NGA, USGS, Esri UK, Esri, TomTom, Garmin, METI/NASA, USGS [and database rights] (2025) AC0000808122 OS OpenData. Contains Ordnance Survey, NatureScot and Scottish Government data.

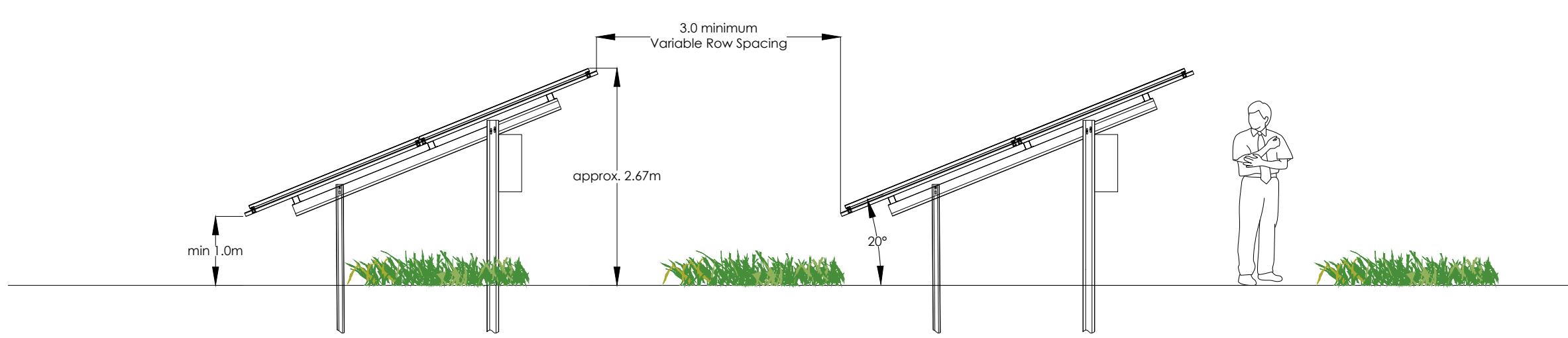
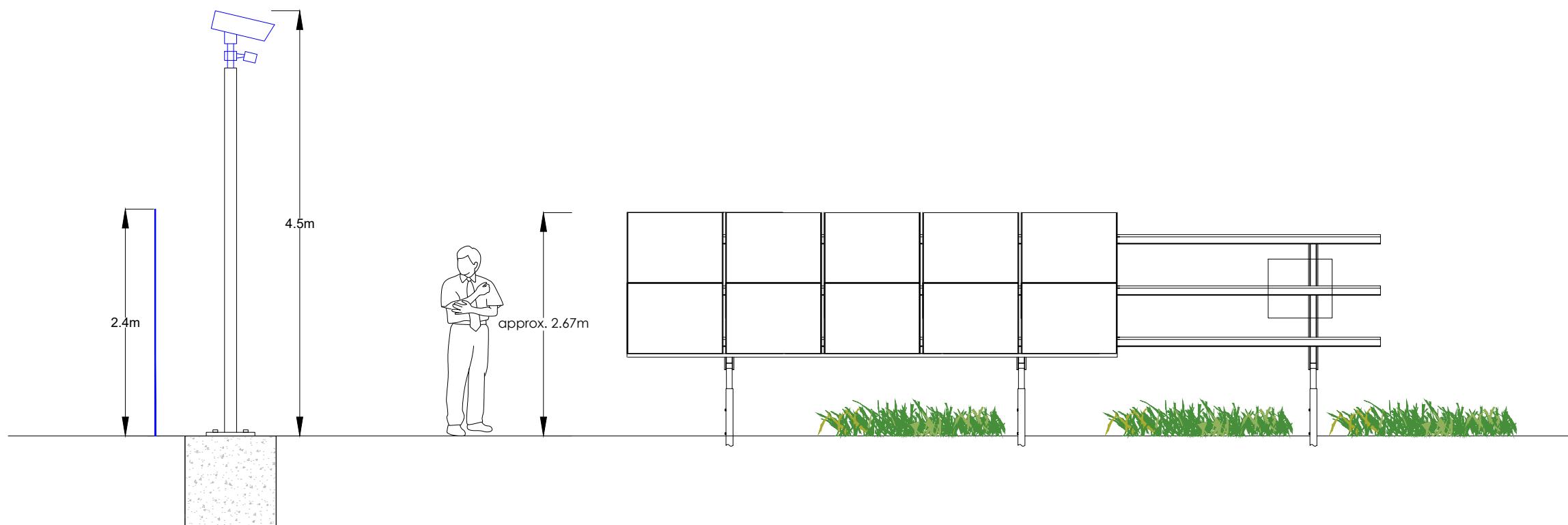
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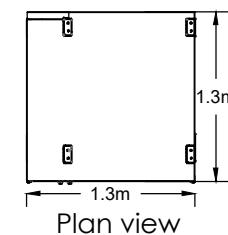
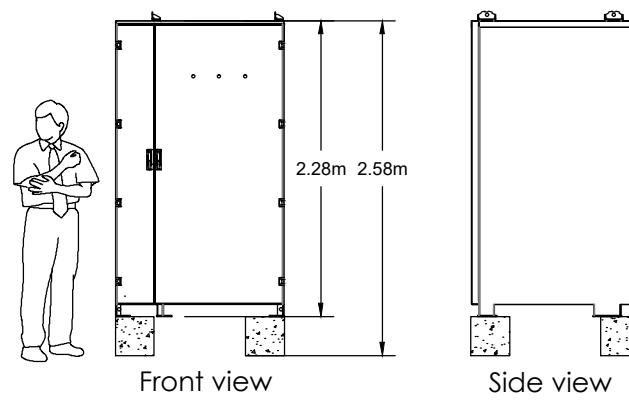
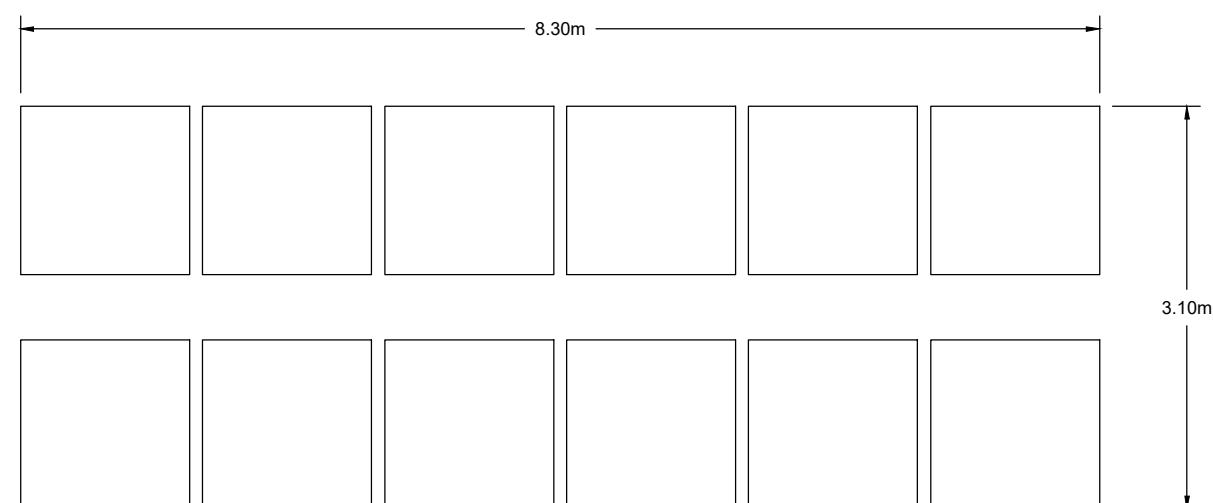
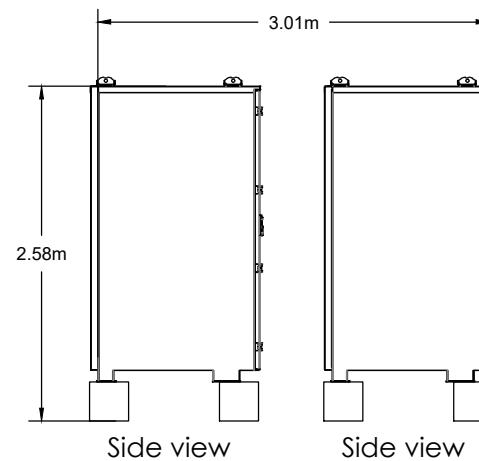
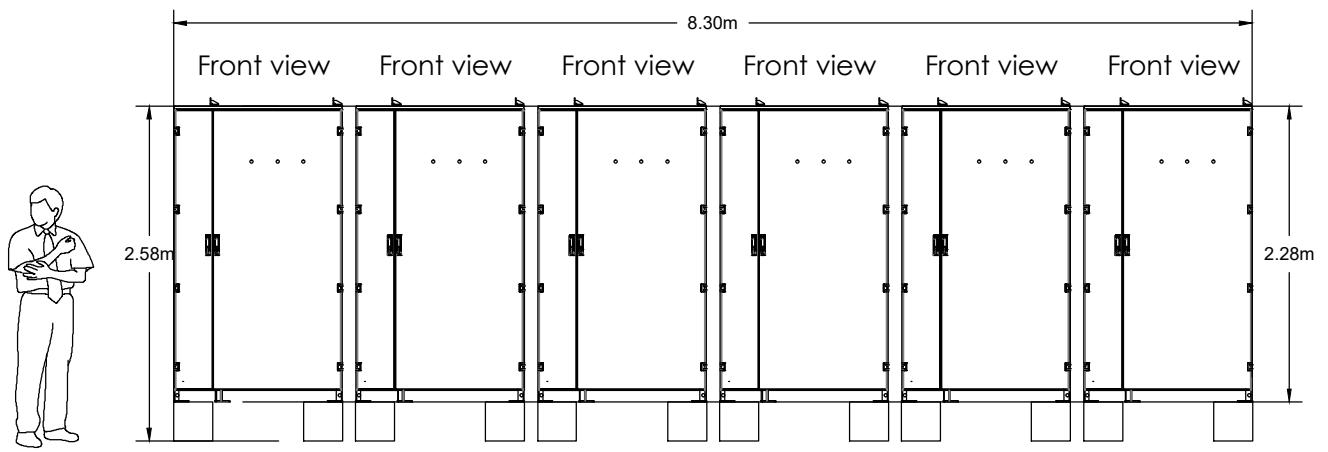




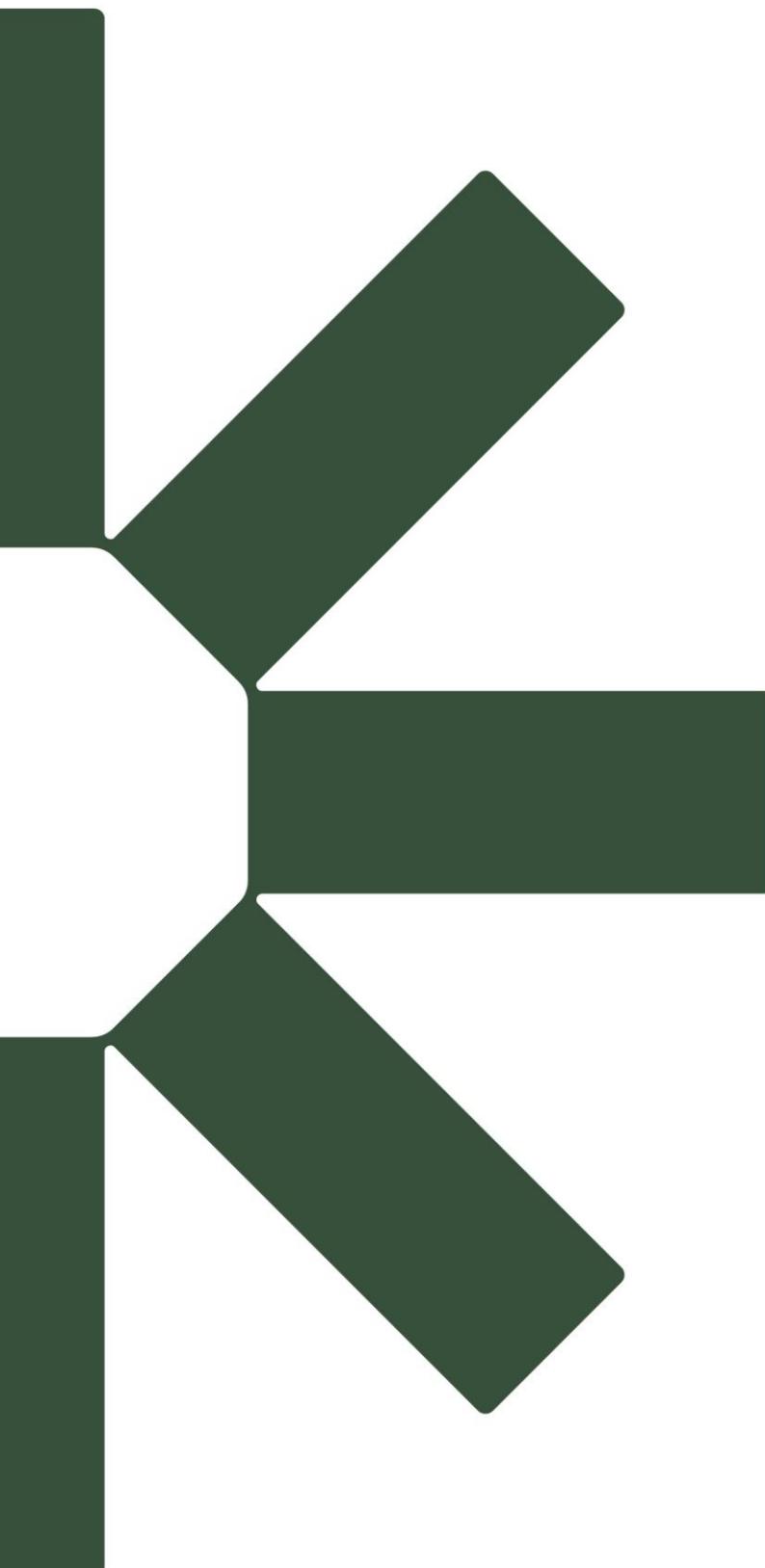




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Making Sustainability Happen