

# **Redshaw 400kV Substation**

## **Environmental Impact Assessment Report**

### **Volume 1: Non-Technical Summary**

**Redshaw 400kV Substation**

**Environmental Impact Assessment (EIA) Report**

**Volume 1: Non – Technical Summary (NTS)**

**Prepared by LUC**  
**on behalf of**  
**SP Energy Networks**

**May 2025**





## Preface

This Non-Technical Summary (NTS) forms part of an Environmental Impact Assessment (EIA) Report which has been prepared to accompany a planning application by SP Energy Networks ('SPEN') (hereafter referred to as the 'Applicant') to South Lanarkshire Council (SLC) under the Town and Country Planning (Scotland) Act 1997 as amended ('the Act') to construct and keep installed a new 400 kilovolts (kV) /132kV substation (the 'Proposed Development') to meet the requirement for future expansion and accommodation of planned renewable energy projects and their associated grid connections in the area. The Proposed Development is located approximately 3.5 kilometres (km) south-east of Douglas and wholly within SLC area.

The EIA Report comprises the following volumes:

- Volume 1: Non-Technical Summary (this volume);
- Volume 2: Main EIA Report and Technical Appendices; and
- Volume 3: Figures and Visualisations.

In addition to the above, the application is supported by a standalone Planning Statement, Pre-Application Consultation (PAC) Report, Design and Access Statement (DAS), Transport Statement (TS), Preliminary Construction Traffic Management Plan (CTMP), Ecological Appraisal Report (including commentary regarding Habitats Regulations Appraisal), and a Biodiversity Net Gain (BNG) Report.

A hard copy of the EIA Report and supporting documents will be available for public viewing during the application consultation period at the following locations:

| Location                                                                                    | Opening Hours                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Lanarkshire Council<br>Floor 6, Council HQ,<br>Almada Street,<br>Hamilton,<br>ML3 0AA | Monday: 8:45am to 4:45pm<br>Tuesday: 8:45am to 4:45pm<br>Wednesday: 8:45am to 4:45pm<br>Thursday: 8:45am to 4:45pm<br>Friday: 8:45am to 4:15pm<br>Saturday: Closed<br>Sunday: Closed |
| St Bride's Centre<br>Braehead,<br>Douglas,<br>Lanark,<br>ML11 0PT                           | Monday: 9am to 9:30pm<br>Tuesday: 9am to 9:30pm<br>Wednesday: 9am to 9:30pm<br>Thursday: 9am to 9:30pm<br>Friday: 9am to 3:30pm<br>Saturday: Closed<br>Sunday: Closed                |

A hard copy of the EIA Report, NTS and supporting documents may be obtained by contacting the Applicant at: [Redshaw@communityrelations.co.uk](mailto:Redshaw@communityrelations.co.uk). An electronic version of the reports will be available to download from the project website at [https://www.spenergynetworks.co.uk/pages/redshaw\\_project\\_documents.aspx](https://www.spenergynetworks.co.uk/pages/redshaw_project_documents.aspx) and the SLC planning portal: <https://publicaccess.southlanarkshire.gov.uk/online-applications/>.

Any public representations to the application may be submitted via the SLC planning portal at <https://publicaccess.southlanarkshire.gov.uk/online-applications/> or by email to [planning@southlanarkshire.gov.uk](mailto:planning@southlanarkshire.gov.uk), identifying the proposal and specifying the grounds for representation. SLC will advertise the submission of the EIA Report in the local and national press. The advert will state the deadline for submitting representations to SLC in relation to the planning application.

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# 1. Introduction

## 1.1 Background

- 1.1.1 This document is a Non-Technical Summary (NTS) of the Environmental Impact Assessment (EIA) Report which accompanies an application for planning permission made by Scottish Power Transmission plc ('SPT') (hereafter referred to as '**the Applicant**') under Section 32 of the Town and Country Planning (Scotland) Act 1997<sup>1</sup> as amended to construct and keep installed, a new 400 kilovolts ('kV') /132kV substation (the Proposed Development).
- 1.1.2 The Proposed Development is a 'national development' as it falls within the category (No 3 (c)) Annex B of developments set out in Scotland's National Planning Framework 4 ('NPF4') which states as follows: "*New and/or upgraded Infrastructure directly supporting on and offshore high voltage electricity lines, cables and interconnectors including converter stations, switching stations and substations*" (NPF 4, page 103)<sup>2</sup>.
- 1.1.3 The NTS provides a concise and easy to understand overview of the Proposed Development and the key findings of the Environmental Impact Assessment (EIA) process as presented in the EIA Report. The text is supported by **Figures 1-3** which are referenced throughout.
- 1.1.4 The Proposed Development Site is located in proximity to the existing 400kV Scotland to England interconnector (ZV route) at Redshaw, approximately 3.5 kilometres ('km') south-east of Douglas and wholly within South Lanarkshire Council ('SLC') area and is shown on **Figure 1**.
- 1.1.5 The Proposed Development will help to reinforce the transmission network in the area of which an anticipated two gigawatts ('GW') of renewable energy will be connected in the area in the future. Overall, the Proposed Development will provide a more reliable, fit for purpose, and economical transmission network.
- 1.1.6 The application for planning permission is accompanied by an EIA Report which presents the findings of the EIA. The EIA has been undertaken by LUC and specialist subconsultants on behalf of the Applicant in accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017<sup>3</sup> (hereafter referred to as '**the EIA Regulations**') to assess the likely significant environmental effects of the construction and operation of the Proposed Development. The EIA Report will inform decision making by SLC.

## 1.2 The Applicant

- 1.2.1 This application is being made by the Applicant, who owns and operates the electricity transmission and distribution networks in Southern and Central Scotland and is the holder of a transmission licence. The Applicant's transmission network is the backbone of the electricity system within its area, carrying large amounts of electricity at high voltages from generating sources such as wind farms, power stations and various other utilities across long distances to connect homes and businesses. The transmission network consists of approximately 4,000km of OHLs and over 600km of underground cables. The electricity is then delivered via the distribution network which has over 150 substations and in excess of 100 grid supply points which serves approximately two million customers in Southern and Central Scotland.
- 1.2.2 The Applicant is required to identify electrical connections that meet the technical requirements of the electricity system, which are economically viable, and cause on balance, the least disturbance to both the environment and the people who live, work and enjoy recreation within it.

<sup>1</sup> The Town and Country Planning (Scotland) Act 1997. Available [online] at: <https://www.legislation.gov.uk/ukpga/1997/8/contents> [Accessed: 28 May 2025]

<sup>2</sup> National Planning Framework (NPF) 4 Annex B, 3, page 103: National Development Statements of Need identifies strategic renewable electricity generation and transmission infrastructure including new substations as national developments. Available [online] at: <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf> [Accessed: 28 May 2025]

<sup>3</sup> The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Available [online] at: <https://www.legislation.gov.uk/ssi/2017/102/contents> [Assessed: 28 May 2025]

## 1.3 Environmental Impact Assessment

- 1.3.1 An EIA is required and carried out where a proposed development has the potential to result in significant environmental effects. As it is considered possible that the Proposed Development may result in significant environmental effects, an EIA has been undertaken to accompany the application for planning permission under the Act.
- 1.3.2 EIA involves the compilation, evaluation and presentation of any likely significant environmental effects resulting from a proposed development, to assist the consenting authority (in this case SLC), statutory consultees, and the wider public when considering an application.
- 1.3.3 EIA is an iterative process which means that the early identification of potentially significant effects can also inform the design of a proposed development so that adverse environmental effects can be avoided, reduced and if possible, removed at an early stage. EIA also identifies where additional mitigation may be required to address and further minimise adverse effects.
- 1.3.4 The scope and content of the EIA were informed by an EIA Scoping exercise<sup>4</sup> and a formal Scoping Opinion<sup>5</sup> received from SLC on 9<sup>th</sup> February 2024 which included comments from statutory consultees.
- 1.3.5 As required by the EIA Regulations, the EIA Report has been prepared by 'competent experts' in relevant specialisms (details of which can be found in the EIA Report **Technical Appendix 1.2 Statement of Expertise**).

## 1.4 Overview of the Site

- 1.4.1 The Site is located in close proximity to the existing ZV Route at Redshaw and between B7078 and the M74, approximately 3.5km south-east of Douglas, and wholly within SLC. The Site area within the Site boundary covers approximately 20.65 hectares ('ha') and slopes south towards the B7078, from a high point of approximately 340m Above Ordnance Datum ('AOD') in its northern extent, to approximately 276 metres ('m') AOD in its southern extent. Landcover at the Site consists of open moorland and rough grassland, while a small block of coniferous forestry is immediately to the west of the Site. The existing ZV Route passes through the centre of the Site.
- 1.4.2 The site of the former Red Moss Hotel (subject to demolition for the location of the proposed Red Moss Battery Energy Storage System ('BESS') currently being considered by the Energy Consent Unit (ECU)<sup>6</sup> is located immediately southeast of the Site and adjacent to the B7078.
- 1.4.3 The nearest residential property to the Site is a property at Redshaw, located 1.4km to the north-west. There is one unnamed watercourse within the Site which flows south-westerly direction, along the inside of the eastern Site boundary. The eastern portion of the Site presently drains to this watercourse with the remainder of the Site draining south towards the B7078.
- 1.4.4 The Site location is shown on **Figure 1**.

<sup>4</sup> Redshaw 400kV Substation Report (2023). Available [online] at: [https://www.spenergynetworks.co.uk/userfiles/file/SCOPING\\_REPORT-5440750.pdf](https://www.spenergynetworks.co.uk/userfiles/file/SCOPING_REPORT-5440750.pdf)

<sup>5</sup> Redshaw 400kV Substation Formal Scoping Opinion (2024). Available [online] at: [https://www.spenergynetworks.co.uk/userfiles/file/P\\_23\\_1552-SCOPING\\_OPINION-5461269.pdf](https://www.spenergynetworks.co.uk/userfiles/file/P_23_1552-SCOPING_OPINION-5461269.pdf)

<sup>6</sup> The proposed Red Moss BESS is located on the site of the former Red Moss Hotel and adjacent yard (ECU Reference: ECU00005043). Available [online] at: <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005043>

## 2. Development Description

### 2.1 The Proposed Development

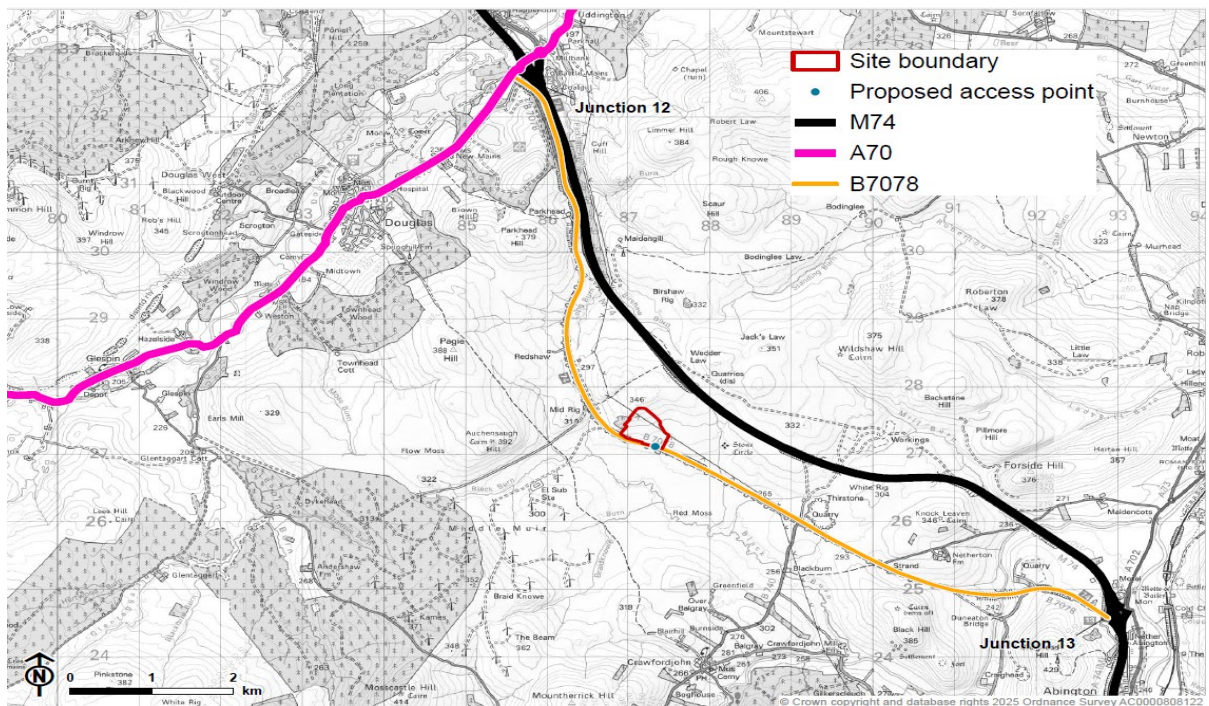
2.1.1 The main components of the Proposed Development, for which planning permission is being sought comprise:

- A new 400kV Gas Insulated Switchgear ('GIS') substation building which will house gas insulated electrical switchgear and plant (approximately 91m x 30m x 12m);
- A new 132kV GIS substation building which will house gas insulated electrical switchgear and plant (approximately 56m x 17.5m x 10.8m);
- A small distribution 33kV Grid Supply Point ('GSP') substation building to provide ancillary power, lighting, heating and ventilation;
- External grid transformers;
- A new permanent access track from local public road (B7078) to substation compound;
- Internal access roads and parking provision;
- Security fence around the live compound;
- Drainage works;
- Landscaping works;
- Temporary construction compound, laydown areas and associated temporary compound; and
- Proposed farmers access track.

2.1.2 **Figures 2 and 3** shows the layout of the Proposed Development.

### Access

2.1.3 Access to the Site will be via a new vehicular access adjoining the B7078 (a public road which is administered by SLC). The B7078, runs approximately north to south and is parallel to the nearby M74. The B7078 can be accessed from the north and west via the A70 / M74 Junction 12 and from the south via M74 Junction 13.



*Image 1: Proposed Access Points to the Site*

- 2.1.4 Standard Heavy Goods Vehicles ('**HGVs**') will be used to transport construction materials to the Site and all HGVs and staff traffic will be required to approach the Site via the B7078 accessed either from the north via the A70 or the south via M74 Junction 13. Although it is also possible to access the B7078 from the west via B740.
- 2.1.5 There will be a requirement for the movement of approximately 20 abnormal loads<sup>7</sup> (associated with the movement of transformer and control building components) during the construction phase. Details regarding the transportation of any abnormal loads to the Site during construction will be confirmed once a contractor is in place.
- 2.1.6 The construction access routes overlap and/or cross the NCN 74 cycle route. The NCN 74 cycle route will require consideration during the construction phase and this is considered in the preliminary Construction Traffic Management Plan ('**CTMP**') submitted separately with the application for planning permission.

### Construction Timescales for the Proposed Development

- 2.1.7 Subject to the granting of planning permission, it is anticipated that the construction of the Proposed Development will last for up to six years. The construction will be undertaken in phases starting from November 2025 until October 2031.
- 2.1.8 The Proposed Development is considered to be a permanent installation with a minimum operating term of 40-50 years. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator at the time. The adopted Construction Environmental Management Plan ('**CEMP**') will be updated as required to ensure best practice is adopted during decommissioning of the Proposed Development.

<sup>7</sup> An "abnormal load" refers to any cargo that exceeds standard size or weight limits for road transport. These loads may require special vehicles and arrangements for their transportation, including escort vehicles and potential route restrictions.

## 3. Site Selection and Design Strategy

### 3.1 Site Feasibility and Selection

- 3.1.1 The Proposed Development Site has been selected through the 2019 strategic optioneering study<sup>8</sup> and the 2023 siting studies (Redshaw 400kV Substation Siting Study<sup>9</sup> and Redshaw 400kV Substation Appraisal Supplementary Report<sup>10</sup>) considering a number of criteria below:

#### Economic

- The Site generally costs less to construct taking into account expected civil engineering, plant, equipment and labours costs. The discounted sites would have required significant earthworks and soil removal from site, resulting in significant transport movements and associated costs. The topography of the Site allows for cut and fill without the need to transport surplus material offsite. Gas Insulated Switchgear (GIS) was chosen over an Air Insulated Switchgear ('AIS') solution, as AIS would have required a significantly larger land take that would not have been possible on all sites considered without significant earthworks and the need for soil removal from site.

#### Technical

- The Site meets the objective of being within proximity to the existing ZV route and is able to accommodate new proposed overhead line connections including 132kV connections into the substation and the connection of a 400kV line from Glenmuckloch substation.
- The location was identified as a site which is located between towers ZV108 and ZV111 (**Figure 2.1** refers), where it is considered that the existing tension towers would give the ability to divert the existing OHL circuits<sup>11</sup>, whilst two new terminal towers would be constructed in place of tower ZV110 to turn both circuits into the new site. The Site is located to the east of tower ZV110 to satisfy these technical requirements. The positioning of the towers following construction of the ZV route 400kV diversion is shown in **Figure 2.2**.
- The Site has minimum impact to the ZV route in terms of location. Easy 'loop-in and loop-out' ('LILO') of the line would be possible. The location will minimise impact to the ZV route, with planned outages being kept to 8 weeks in total (4 weeks for each circuit) and during the construction phase there will be fewer tower modifications required.

#### Environmental

- The Site has a good landscape fit and the presence of existing landscape and infrastructure features to integrate and where possible screen the substation infrastructure.
- The Site has good transport links for access to the Site for construction and operation.
- The Site has the opportunity to minimise impacts to the environment by reducing cut and fill activities to minimise the earthworks required.

### 3.2 Design Process

- 3.2.1 The overarching aim of the design of was to minimise visibility of the Proposed Development which was done through the Site selection process as detailed above and to avoid significant effects on any onsite environmental

<sup>8</sup> Glenmuckloch to ZV 400kV Strategic Optioneering Study Strategic Options Report (2019). Available [online] at: [https://www.spenetworks.co.uk/userfiles/file/Glenmuckloch to ZV Route 400kV Strategic Optioneering Study.pdf](https://www.spenetworks.co.uk/userfiles/file/Glenmuckloch%20to%20ZV%20Route%20400kV%20Strategic%20Optioneering%20Study.pdf)

<sup>9</sup> A document which outlines the methodology and findings of the siting study which has been undertaken to inform consultation, as well as the details of the public consultation process (2023). Available [online] at: [https://www.spenetworks.co.uk/userfiles/file/11980\\_Redshaw%20400kV\\_Substation\\_%20Siting%20Study\\_03\\_04\\_23\\_inc\\_Figures\\_pdf\\_compressed.pdf](https://www.spenetworks.co.uk/userfiles/file/11980_Redshaw%20400kV_Substation_%20Siting%20Study_03_04_23_inc_Figures_pdf_compressed.pdf)

<sup>10</sup> A supplementary document that details the methodology and findings relating to the identification of Substation Siting Area 4 (SS4) (2023). Available [online] at: [https://www.spenetworks.co.uk/userfiles/file/Redshaw 400kV Appraisal Report Supplementary Report.pdf](https://www.spenetworks.co.uk/userfiles/file/Redshaw_400kV_Appraisal_Report_Supplementary_Report.pdf)

<sup>11</sup> ZV Route 400kV Diversion to allow for the proposed Redshaw Substation to be built (2024). Available [online] at: [https://www.spenetworks.co.uk/pages/zv\\_route\\_400kv\\_diversion.aspx](https://www.spenetworks.co.uk/pages/zv_route_400kv_diversion.aspx)

constraints. **Chapter 2: Site Selection and Design Strategy** of the EIA Report describes the process in full detail, starting with the Proposed Development's design, and subsequent modifications to the design that were made in response to environmental considerations, constraints and effects, and feasibility of construction as information became available through the EIA process.

3.2.2 The constraints considered in the iterative design process and that guided the design of the Proposed Development are detailed below.

- Landscape and Visual: Minimising visibility from the Douglas Valley SLA, nearby residential properties and the wider landscape, including views from the M74 motorway to the east and B7078/NCN 74 to the west.
- Archaeology and Cultural Heritage: Avoiding cultural heritage assets within the Site.
- Hydrology and Hydrogeology: Maintaining a 50m buffer to all marked watercourse (with a 10m riparian buffer applied to a small unnamed watercourse) and avoidance of watercourse crossings. Ensuring the appropriate attenuation and treatment of surface water runoff via the Proposed Developments' permanent drainage design, which includes Sustainable Drainage Systems ('**SuDS**'). In addition, two Scottish Water underground pipes that are within the southern part of the Site have been avoided and buffered appropriately during early design. The Site access track is the only infrastructure that will have to cross the pipes. Further cognisance of the pipes will be required during detailed design of the track and Site drainage, and prior to and during construction works, in consultation with Scottish Water.
- Topography: Avoiding steep slopes to ensure constructability and reduce health and safety risk whilst reducing the need for significant cut and fill engineering works.

3.2.3 The final design and siting of the Proposed Development (**Figure 2** and **Figure 3**) is the outcome of a process which has resulted in the minimisation of visibility and avoidance of the identified onsite environmental constraints. Further details can be found in **Chapter 2** of the EIA Report and the **Design and Access Statement**.

## 4. Landscape and Visual Amenity

### 4.1 Introduction

- 4.1.1 The landscape and visual amenity chapter presents an assessment of the likely effects of the Proposed Development on the landscape and on key views during the construction and operation.
- 4.1.2 The full assessment can be found in **Chapter 4: Landscape and Visual Amenity** of the EIA Report which is accompanied by an appendix and figures (including visualisations).

### 4.2 Overview of Methodology

- 4.2.1 The assessment was designed to identify and assess effects on the landscape and on views within 5km of the Proposed Development (study area), through the examination of desk-based resources and field survey. The assessment focuses on locations where receptors are more likely to be affected by the Proposed Development as predicted by a Zone of Theoretical Visibility ('ZTV') map. The ZTV uses a 'bare earth' terrain model to show where the Proposed Development will be theoretically visible, but takes no account of landcover such as woodland, forestry and buildings which may obstruct views.
- 4.2.2 Effects on views and visual amenity were examined through the use of five representative daytime viewpoints;
- Viewpoint 1: B7078 Core Path/NCN 74;
  - Viewpoint 2: Thirstone stone circle;
  - Viewpoint 3: Wider path network, east of M74 (Outer Law);
  - Viewpoint 4: Auchensaugh Hill; and
  - Viewpoint 5: B740/B7078 junction.

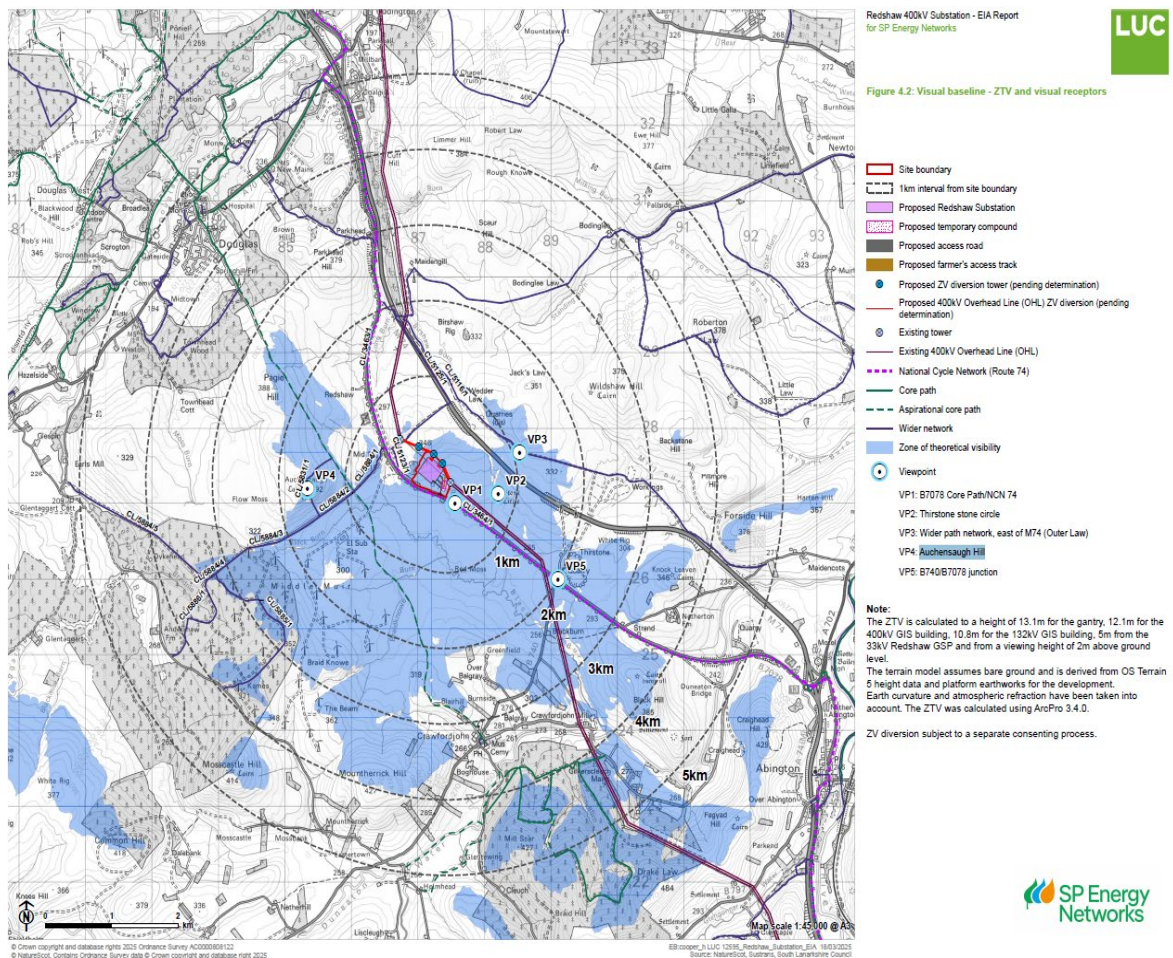


Image 2: Visual Baseline- ZTV and Visual Receptors

## 4.3 Overview of Baseline Conditions

- 4.3.1 The Site is located in an area of sloping moorland between the B7078 and M74, approximately 4km to the south-east of Douglas. The former Red Moss Hotel is located immediately opposite the Site. Operational Andershaw and Middle Muir Wind Farms are located on open moorland between approximately 1 – 4km to the south-west of the Site. The existing high voltage overhead line (ZV Route) passes through the Site.
- 4.3.2 The Site is not located within any nationally or locally designated landscapes.
- 4.3.3 There are several isolated properties located within 3km of the Site. The nearest communities are Douglas approximately 4km to the north-west, and Crawfordjohn 3.2km to the south.

## 4.4 Overview of Effects

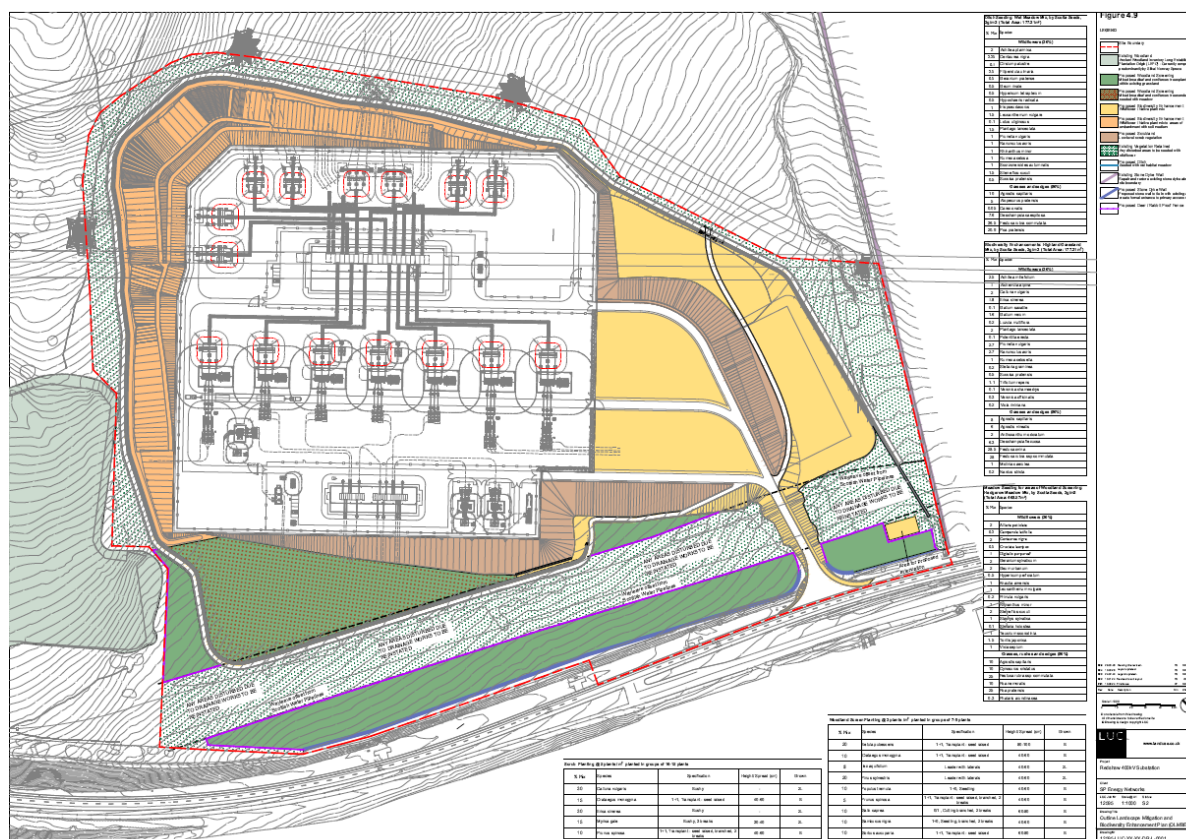
### Construction and Operational Effects

- 4.4.1 Significant effects during construction and operation will occur for the landscape within the Site and the surrounding moorland, within approximately 0.5km of the Proposed Development.
- 4.4.2 Significant effects will occur for views experienced within approximately 1.5km of the Site, including Viewpoint 1: B7078 Core Path / NCN74, Viewpoint 2: Thirstone, stone circle (SM5094) and Viewpoint 3: Wider path network east of M74 (Outer Law), including users of the B7078 and the adjacent Core Path / NCN 74 (see **Image 2** above).

4.4.3 Decommissioning works associated with the Proposed Development will be no greater than construction stage effects. A separate assessment of landscape and visual effects resulting from the decommissioning of the Proposed Development has therefore not been undertaken.

4.4.4 The Landscape and Visual Impact Assessment ('LVIA') considers the effects of the Proposed Development in addition to, and combined with, the effects from other similar operational, consented and proposed projects. Overall, future additional cumulative effects are not judged to be of a greater significance than those of the primary LVIA. The Proposed Development's contribution to combined cumulative landscape and visual effects will be no greater than reported in the primary LVIA.

4.5.1 Good practice measures during construction as detailed in the CEMP are considered embedded mitigation for effects during construction. The Outline Landscape Mitigation and Biodiversity Enhancement Plan (see **Image 3** below) is considered embedded mitigation for effects during operation and maintenance. The outline mitigation proposals detailed on the plan seek to integrate the form and scale of the Proposed Development into the surrounding landscape as far as practicable, whilst assisting in the mitigation of landscape and/or visual effects and delivering biodiversity enhancements. No further mitigation is proposed.



**Image 3: Outline Landscape Mitigation and Biodiversity Enhancement Plan**

4.6.1 Localised residual landscape and visual effects will remain as those outlined above for the construction and operational phase of the Proposed Development.

## 5. Archaeology and Cultural Heritage

### 5.1 Introduction

- 5.1.1 The archaeology and cultural heritage chapter considers the likely effects on cultural heritage interests of the construction and operation of the Proposed Development. The assessment has been informed by information provided by Historic Environment Scotland ('HES') and the West of Scotland Archaeology Service ('WoSAS'), as archaeological advisors to SLC.
- 5.1.2 The full assessment can be found in **Chapter 5: Archaeology and Cultural Heritage** of the EIA Report which is accompanied by appendices and figures (including visualisations).

### 5.2 Overview of Methodology

- 5.2.1 The assessment was designed to identify and evaluate, through the examination of desk-based resources and a walkover field survey, the heritage value of any cultural heritage assets present within 200m of the Proposed Development planning boundary (Inner Study Area), and within an Outer Study Area, extending up to 5km from the Proposed Development Site, that could have their settings affected.

### 5.3 Overview of Baseline Conditions

- 5.3.1 A total of 25 heritage assets (sites and features) have been identified within the Inner Study Area (see **Image 4** below). A possible post-medieval track and 11 small cairns are assessed as being of low sensitivity. The remaining features comprise indistinct sheep tracks of no heritage value. Taking account of the little change in land-use as unimproved pasture and the character of the identified cultural heritage baseline within the Site, the results of the study suggest that the Site has moderate archaeological potential.

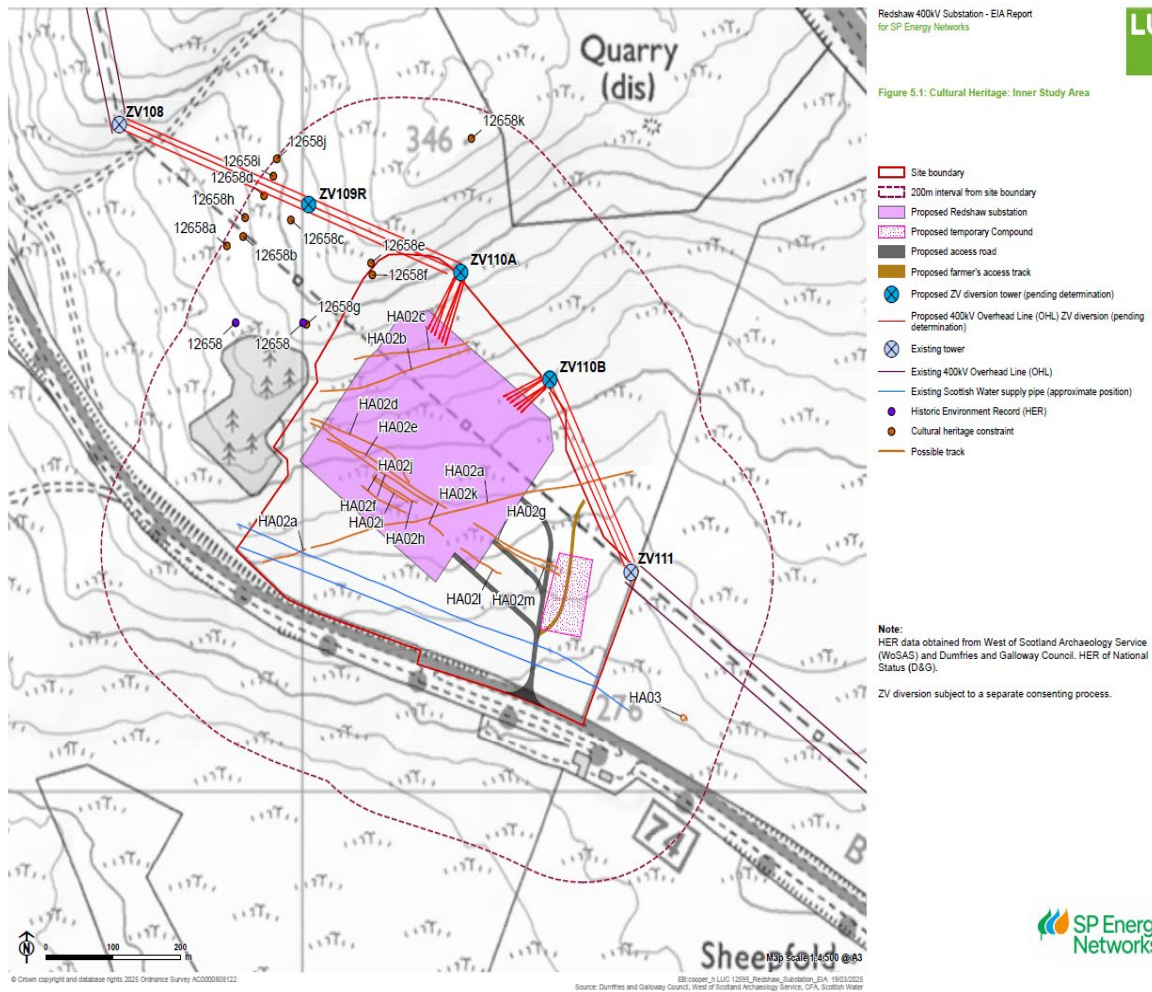


Image 4: Cultural Heritage, Inner Study Area

5.3.2 Within 5km of the Proposed Development there are nine Scheduled Monuments and 10 non-statutory register ('NSR') sites of presumed national significance (see Image 5 below).

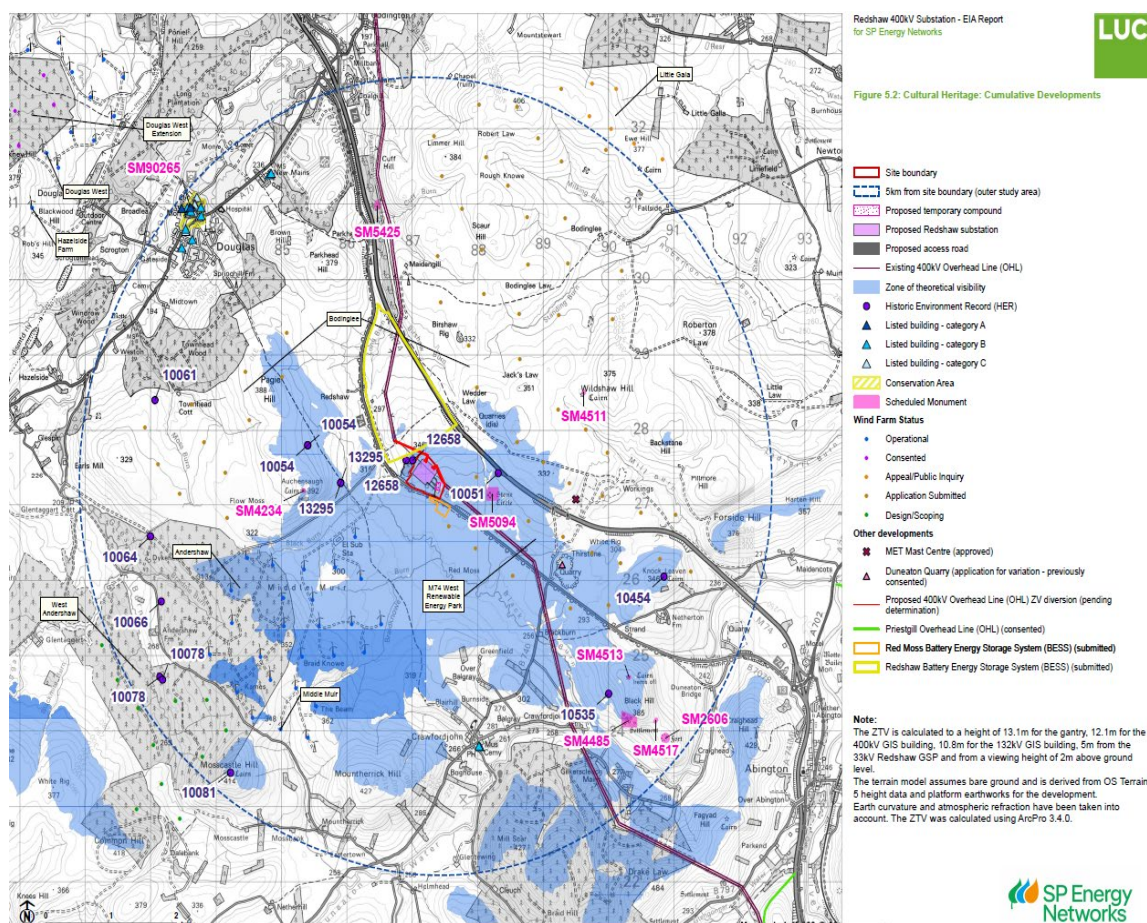


Image 5: Known Heritage Assets within the Site

## 5.4 Overview of Effects

### Construction Effects

- 5.4.1 There is potential for construction works within the Inner Study Area to result in **minor** significance effect on a small section of the old trackway (**HA02a**) and a **moderate** significance on one small cairn (**12658f**). There is also potential for a **moderate to major** significant effect on buried archaeology within the Site.

### Operation Effects

- 5.4.2 The detailed assessment has resulted in the identification of **minor** significance effects on the settings of three Scheduled Monuments (Auchensauigh Hill, cairn (**SM 4324**); Thirstone, stone circle (**SM 5094**), Netherton, cairn (**SM 4513**)) and two NSR sites (**10054**; **10454**). The Proposed Development would result in a slight increase in low-lying infrastructure visible in views from and to the assets, seen below the skyline and in context with existing overhead transmission infrastructure.

### Cumulative Effects

- 5.4.3 The combined cumulative effects during construction of the Proposed Development with the proposed ZV route diversion and the pre-application Glenmuckloch to Redshaw Reinforcement would comprise a potential impact of high magnitude (**moderate** significance effect) on two small cairns (**12658e-f**), in close proximity to working areas, and an impact of medium magnitude (**minor** significance effect) on the old track (**HA02a**). In both instances, the cumulative impact would result entirely from the Proposed Development alone. Residual cumulative construction effects in relation to direct effects on the cultural heritage resource within the Site (including on any new archaeological discoveries, which will be mitigated through preservation by record) will remain of no more than **minor** significance (not significant in EIA terms).

- 5.4.4 The assessment of cumulative effects during operation has considered a future baseline scenario and comprises a potential impact of medium magnitude (**moderate** significance effect) on settings of three Scheduled Monuments (Thirstone, stone circle (**SM 5094**), Auchensaugh Hill, cairn (**SM 4324**), and Netherton, cairn (**SM 4513**)), NSR site **10454**, and a low magnitude of (**minor** significance effect) on NSR site **10054**. The residual cumulative operational effects will remain the same as the effects predicted.

## 5.5 Overview of Proposed Additional Mitigation/Enhancement

- 5.5.1 The remains of a small cairn (**12658f**), that lies within 5m of the Site's north-western border, will be marked off and avoided during construction works.
- 5.5.2 A programme of archaeological trial trenching will be carried out in advance of construction commencing to identify and record the character and condition of features (**HA02a**) identified through the assessment, that lie within the layout of the Proposed Development, and any others that may survive as buried features within the Site. The scope will be agreed through consultation with the Council archaeological advisors (WoSAS) and will be set out in a Written Scheme of Investigation ('**WSI**').

## 5.6 Summary of Likely Significant Residual Effects

- 5.6.1 Mitigation measures have been set out that would avoid or reduce the predicted effects and residual effects of no more than **minor** significance (not significant in EIA terms) have been identified.
- 5.6.2 The assessment has identified no significant residual construction effects on the settings of heritage assets of above **minor** significance. In all cases, there would be no significant adverse effects on the settings of these assets resulting from the construction and operation of the Proposed Development.
- 5.6.3 The assessment of cumulative effects has considered a future baseline scenario. The residual cumulative construction effects of the Proposed Development, in combination with the pre-application Glenmuckloch to Redshaw Reinforcement would result entirely from the Proposed Development alone. No additional cumulative construction effects would result from the Proposed Development in combination with other developments. The cumulative assessment has identified no significant residual cumulative effects during construction on the setting of any heritage assets.
- 5.6.4 The cumulative assessment considered the operational effects arising from the addition of the Proposed Development to a baseline including other consented, proposed or in-scoping schemes within 5km. The detailed assessment resulted in the identification of **moderate** significance cumulative effects on the settings of three Scheduled Monuments (**SM 4324**, **SM 4513**, **SM 5094**) and one NSR site (**10454**). In each case, the Proposed Development would contribute significantly less to the cumulative impact than other cumulative schemes.

## 6. Hydrology and Hydrogeology

### 6.1 Introduction

- 6.1.1 The hydrology and hydrogeology chapter presents the findings of the assessment of likely effects of the Proposed Development on hydrology and hydrogeology features. It details the baseline environmental conditions, based on desk studies and a field survey of the Site.
- 6.1.2 The full assessment can be found in **Chapter 6: Hydrology and Hydrogeology** of the EIA Report which is accompanied by an appendix and figures.

### 6.2 Overview of Methodology

- 6.2.1 The assessment was undertaken using the findings of field survey, consultation and desk-based data collection. The peat survey was undertaken on 15<sup>th</sup> September 2023 based on Scottish Government (2017) guidance<sup>12</sup>, along with a hydrological walkover survey.
- 6.2.2 Mitigation measures are embedded into the project design (e.g. the use of SuDS for treatment of water and slowing the rate of surface water runoff) and new watercourse crossings have been avoided.
- 6.2.3 These embedded mitigation measures were considered to be in place for the assessment of effects.

### 6.3 Overview of Baseline Conditions

- 6.3.1 The Proposed Development is located within the Black Burn catchment in South Lanarkshire, with the Black Burn situated approximately 520m south of the Site. There is one small, unnamed watercourse which flows in a south-easterly direction along the eastern Site boundary and is culverted under the public road.



*Image 6: Unnamed watercourse flowing through the east of the Site*

- 6.3.2 The Site drains south towards the Red Moss Site of Special Scientific Interest ('SSSI') and Special Area of Conservation ('SAC') which is designated for its raised bogs.

<sup>12</sup> Scottish Government, Scottish Natural Heritage, SEPA (2017) Peatland Survey. Guidance on Developments on Peatland [pdf]. Available at: <https://www.gov.scot/publications/peatland-survey-guidance/> [Accessed 22 May 2025].

- 6.3.3 A review of the Scottish Environment Protection Agency ('SEPA') Future Flood Maps indicates that there are no areas identified to be at risk of surface water, fluvial or groundwater flooding in a 1 in 200-year event (plus an allowance for climate change) within or close to the Site.
- 6.3.4 The Site is not located in a surface water Drinking Water Protected Area ('DWPA') and there are no Scottish Water or SEPA licenced abstractions or private water supplies within 1km of the Site.
- 6.3.5 The results of the peat survey indicate that there is no peat present within the Site and therefore peat has been scoped out of the EIA. This was agreed with SEPA at the scoping stage.
- 6.3.6 The Site is underlain by the Lesmahagow groundwater body (Waterbody ID: 150673) and was classed as being in 'Good' overall condition<sup>13</sup>. The aquifer underlying the Site is moderately productive.

## 6.4 Overview of Effects

- 6.4.1 The main environmental effects are predicted to occur during construction. The activities that will occur during construction that may have an impact on the water environment, include site clearance; use of heavy plant machinery; increase of hardstanding areas; construction of access tracks; associated earthworks/excavation/re-profiling and construction traffic on access track.
- 6.4.2 With embedded mitigation measures and following good practice construction and site drainage management guidance from relevant bodies (e.g. SEPA, CIRIA, Scottish Renewables), the magnitude of the effect of on water quality is considered to be negligible and of short duration. The sensitivity of all downstream receptors is high, with respect to water quality, and the significance of the effect before additional mitigation is assessed to be **minor**.
- 6.4.3 Excavations for substation foundations could impact groundwater recharge levels. The effect is considered to be of **negligible** significance on the groundwater body. There are no groundwater receptors within 1km of the Site so the significance of effect on groundwater receptors is **none**.
- 6.4.4 The effect of site clearance and construction on run-off rates and flood risk is considered to be of negligible magnitude and the significance of effect is **none** on watercourses and waterbodies downstream of the Proposed Development during construction and operation.
- 6.4.5 In terms of cumulative effects, there are no significant effects arising from the nearby proposed developments in the Black Burn catchment and they will be designed and constructed in line with NPF4 and national guidelines with respect to SuDS and Guidance for Pollution Prevention ('GPPs'). Therefore, there will be no cumulative effect on the downstream catchments.

## 6.5 Overview of Proposed Additional Mitigation/Enhancement

- 6.5.1 Additional mitigation and SuDS (e.g. silt fences, settlement ponds) will be installed around the temporary construction compound and the SuDS outfall to the small watercourse during construction to prevent the risk of sediment/silt runoff to the small watercourse. It is noted that the surface water discharge from the Proposed Development into the unnamed watercourse will require a Controlled Activities Regulations ('CAR') licence. Liaison with SEPA will be undertaken by the Principal Contractor to obtain the CAR licence in advance of construction.
- 6.5.2 Cognisance of Scottish Water services and pipework will be required during detailed design and prior to and during construction works.
- 6.5.3 An Environmental Clerk of Works ('EnvCoW') will be present onsite during construction to monitor the works and check the mitigations outlined in the PPP and CEMP are adhered to.

## 6.6 Summary of Likely Significant Residual Effects

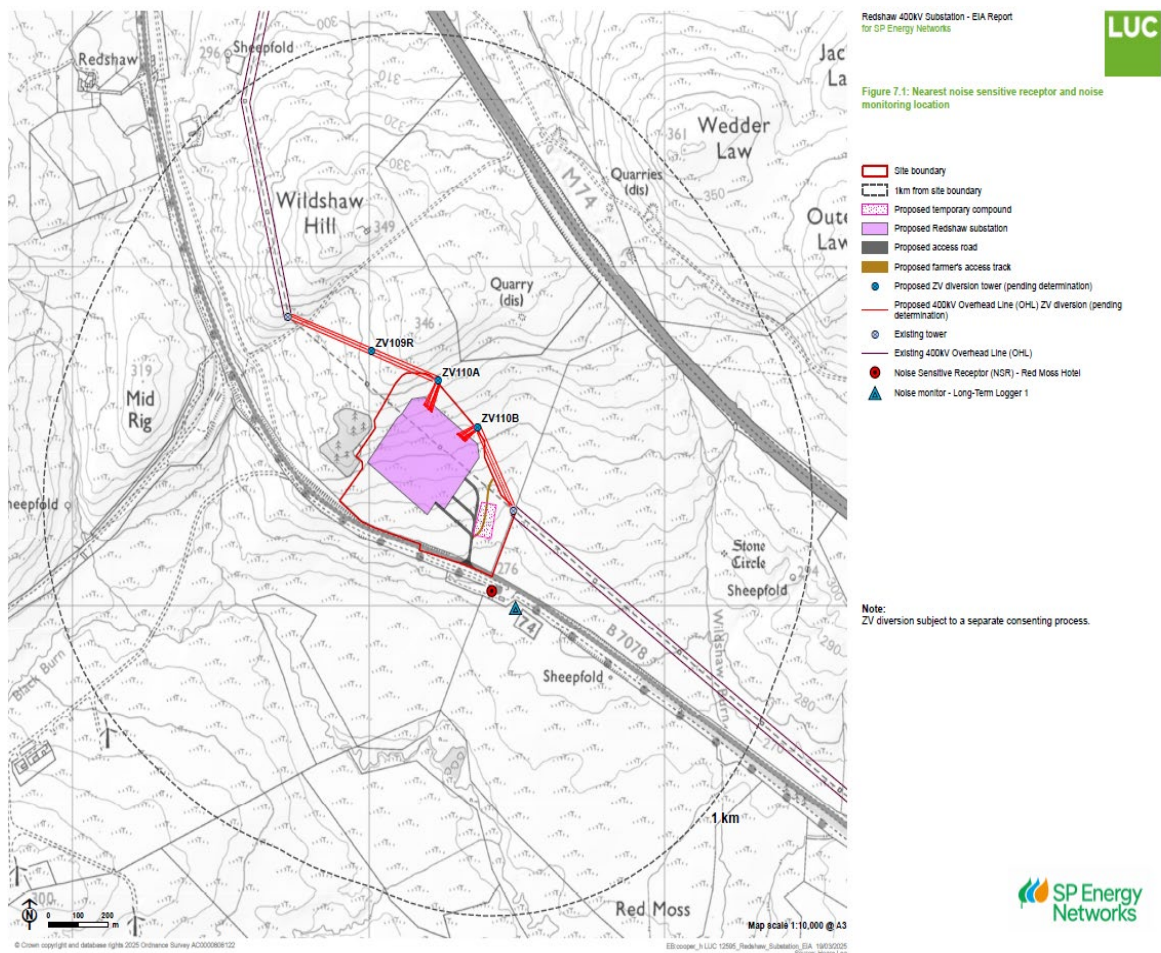
- 6.6.1 With embedded mitigation, good practice and additional site-specific mitigation (around the temporary construction compound) the residual construction effects are either **negligible** or **none**. There are no residual operational effects on the water environment.

<sup>13</sup> Scottish Environment Protection Agency (2025). Water Classification Hub [web map]. Available at: <https://www.sepa.org.uk/data-visualisation/water-classification-hub/> [Accessed 5 May 2025]

## 7. Noise and Vibration

### 7.1 Introduction

- 7.1.1 The noise assessment considers the potential effects of the Proposed Development on noise and vibration receptors. This includes direct, cumulative and inter-relationships. Only one potential noise-sensitive property has been identified within the 1km study area: the Red Moss Hotel, and it is understood that the Red Moss Hotel is currently unoccupied and subject to demolition for the proposed Red Moss BESS<sup>6</sup>.



**Image 7: Noise Sensitive Receptor Location – Unoccupied Red Moss Hotel**

- 7.1.2 The assessment for noise and vibration is undertaken following the broad principles set out within EIA methodology, in that the sensitivity of the receptor is combined with the magnitude to determine the impact significance. This assessment considers that the Red Moss Hotel receptor fits into the medium sensitivity category, due to its transient, leisure use. This was agreed in consultation with SLC. Although currently unoccupied, it is assumed as a worst-case that it could reopen in the future.
- 7.1.3 The full assessment can be found in **Chapter 7: Noise and Vibration** of the EIA Report which is accompanied by an appendix and a figure.

### 7.2 Overview of Methodology

- 7.2.1 The assessment is structured around the consideration of potential effects, including cumulative effects, of construction and operation of the Proposed Development upon the noise and vibration receptor identified.
- 7.2.2 Desk-based studies and a field survey were carried out over the respective study area to determine the prevailing background noise levels at the closest noise-sensitive receptor to the Proposed Development.

7.2.3 The following effects were identified as requiring assessment:

- Noise and vibration associated with construction activities;
- Noise associated with construction traffic (along the access route);
- Noise associated with operation of the substation;
- Cumulative noise and vibration effects during construction; and
- Cumulative noise effects during operation.

7.2.4 It was possible to 'scope out' the following effects, on the basis of the desk based work undertaken, the professional judgement of the EIA team, experience from other relevant projects and policy guidance or standards, and feedback received from consultees:

- Vibration associated with construction traffic;
- Noise and vibration from decommissioning;
- Noise associated with maintenance activities (including traffic); and
- Vibration associated with operation and maintenance.

### 7.3 Overview of Baseline Conditions

7.3.1 Although the Study Area is generally rural in nature, the noise environment is influenced by road traffic, both from the B7078 as well as the M74 located further north, although screened to some extent by the local terrain. The contribution from road traffic decreases for some periods of the night.

### 7.4 Overview of Effects

7.4.1 Predictions of noise and vibration levels for the activities requiring assessment at the closest noise sensitive receptor location identified was undertaken on a worst-case basis. The overall effect of all construction works for the Proposed Development, which also includes construction stage vibration and construction stage traffic noise are predicted to be minor or negligible in significance, and therefore not significant.

7.4.2 Operational noise has been assessed based on preliminary plant selections and predictions of noise levels indicate that the overall effect, accounting for the receptor sensitivity, is considered to be minor and not significant.

7.4.3 Overall, no significant effects to the noise and vibration receptor are predicted, either for the Proposed Development alone or cumulatively with other plans or projects.

### 7.5 Overview of Proposed Additional Mitigation/Enhancement

7.5.1 No additional mitigation is proposed as there are no likely significant effects identified.

### 7.6 Summary of Likely Significant Residual Effects

7.6.1 No likely significant effects have been identified.

## 8. Summary of Significant Effects

- 8.1.1 **Chapters 4 to 7** of the EIA Report present the findings of the assessment of effects of the Proposed Development on a topic-by-topic basis. The significance of these effects has been assessed using criteria defined in the topic chapters. Where appropriate, the significance of effects has been categorised as Major, Moderate, Minor or Negligible. In the context of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (the 'EIA Regulations')<sup>14</sup>, effects assessed as being of 'Major' or 'Moderate' significance are considered as significant effects. Where this differs for certain topic chapters, this has been clearly stated, and details are provided for how significant effects have been defined for that assessment.
- 8.1.2 In line with Schedule 4 of the EIA Regulations, PAN 1/2013<sup>15</sup>, and other relevant EIA guidance, the EIA Report has focused on identifying likely significant environmental effects (both positive and negative) of the Proposed Development, during construction and operation (including cumulatively) to inform decision making.
- 8.1.3 **Table 8.1** and **Table 8.2** below summarises the predicted likely significant effects of the Proposed Development prior to and following implementation of committed mitigation measures (over and above the proposed good practice and embedded mitigation measures which are considered in the initial assessment judgements). All effects are adverse unless otherwise stated. A list of all committed mitigation measures and proposed monitoring identified within the EIA Report is provided in **Technical Appendix 1.3: Schedule of Mitigation, Good Practice, Enhancement and Monitoring**.
- 8.1.4 Following the implementation of additional mitigation, Significant effects remain for the following topics:
- **Chapter 4: Landscape and Visual Impact Assessment;** and
  - **Chapter 5: Archaeology and Cultural Heritage.**

**Table 8.1 Summary of Significant Landscape and Visual Effects**

| Receptor                                               | Construction Phase                                                                                      | Operational Phase – Year 0                                                                              | Operational Phase – Year 10<br>(Residual Effect) | Potential Cumulative Effects                                                                            |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Landscape Character</b>                             |                                                                                                         |                                                                                                         |                                                  |                                                                                                         |
| Site                                                   | <b>Moderate-Major and significant.</b>                                                                  | <b>Moderate-Major and significant.</b>                                                                  | <b>Moderate and significant.</b>                 | n/a                                                                                                     |
| Plateau Moorlands – Glasgow and Clyde Valley LCT (213) | <b>Moderate and significant</b> within approximately 0.5km of the Proposed Development (where visible). | <b>Moderate and significant</b> within approximately 0.5km of the Proposed Development (where visible). | No change.                                       | <b>Moderate and significant</b> within approximately 0.5km of the Proposed Development (where visible). |
| <b>Views and Visual Amenity</b>                        |                                                                                                         |                                                                                                         |                                                  |                                                                                                         |
| Viewpoint 1 – B7078 Core Path / NCN74                  | <b>Major and significant.</b>                                                                           | <b>Major and significant.</b>                                                                           | <b>Moderate-Major and significant.</b>           | <b>Moderate and significant.</b>                                                                        |
| Viewpoint 2 – Thirstone, stone circle (SM5094)         | <b>Moderate and significant.</b>                                                                        | <b>Moderate and significant.</b>                                                                        | No change.                                       | Minor and not significant.                                                                              |

<sup>14</sup> the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (the 'EIA Regulations').

<https://www.legislation.gov.uk/ssi/2017/102/contents>

<sup>15</sup> Planning Advice Note 1/2013: Environmental Impact Assessment. <https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/>

| Receptor                                                 | Construction Phase                                                                                           | Operational Phase – Year 0                                                                                  | Operational Phase – Year 10<br>(Residual Effect) | Potential Cumulative Effects                                                                          |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Viewpoint 3 – Wider path network east of M74 (Outer Law) | <b>Moderate and significant.</b>                                                                             | <b>Moderate and significant.</b>                                                                            | No change.                                       | Minor and not significant.                                                                            |
| B7078                                                    | <b>Moderate and significant</b> , from approximately 1.5km of the road (for northbound road users).          | <b>Moderate and significant</b> , from approximately 1.5km of the road (for northbound road users).         | No change.                                       | Minor and not significant, from approximately 1.5km of the road (for northbound road users).          |
| B7078 Core Paths (NCN 74)                                | <b>Moderate and significant</b> , from approximately 1.5km of the route (for northbound recreational users). | <b>Moderate and significant</b> , from approximately 1.5km of the route (for northbound recreational users) | No change.                                       | Minor and not significant, from approximately 1.5km of the route (for northbound recreational users). |

Table 8.2 : Summary of Significant Archaeology and Cultural Heritage Effects

| Predicted Effects                                                                                                 | Significance             | Committed Additional Mitigation                                                                                                   | Significance of Residual Effect |
|-------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Construction</b>                                                                                               |                          |                                                                                                                                   |                                 |
| Potential adverse direct effect on Wildshaw Hill, small cairn ( <b>12658f</b> ).                                  | <b>Moderate</b>          | Mark off and avoid during construction works.                                                                                     | None                            |
| Potential adverse effects on buried archaeology within the Site.                                                  | <b>Moderate to Major</b> | Archaeological trial trench evaluation to be carried out in advance of development.                                               | Minor (not significant)         |
| <b>Cumulative Operation</b>                                                                                       |                          |                                                                                                                                   |                                 |
| Adverse effect on the settings of three Scheduled Monuments ( <b>SM 4324</b> ; <b>SM 4513</b> ; <b>SM 5094</b> ). | <b>Moderate</b>          | None recommended. Proposed Development constitutes lesser contribution to combined effect with any other cumulative developments. | <b>Moderate</b>                 |
| Adverse effect on the settings of one NSR site: Knock Leaven cairn ( <b>10454</b> ).                              | <b>Moderate</b>          | None recommended. Proposed Development constitutes lesser contribution to combined effect with any other cumulative developments. | <b>Moderate</b>                 |

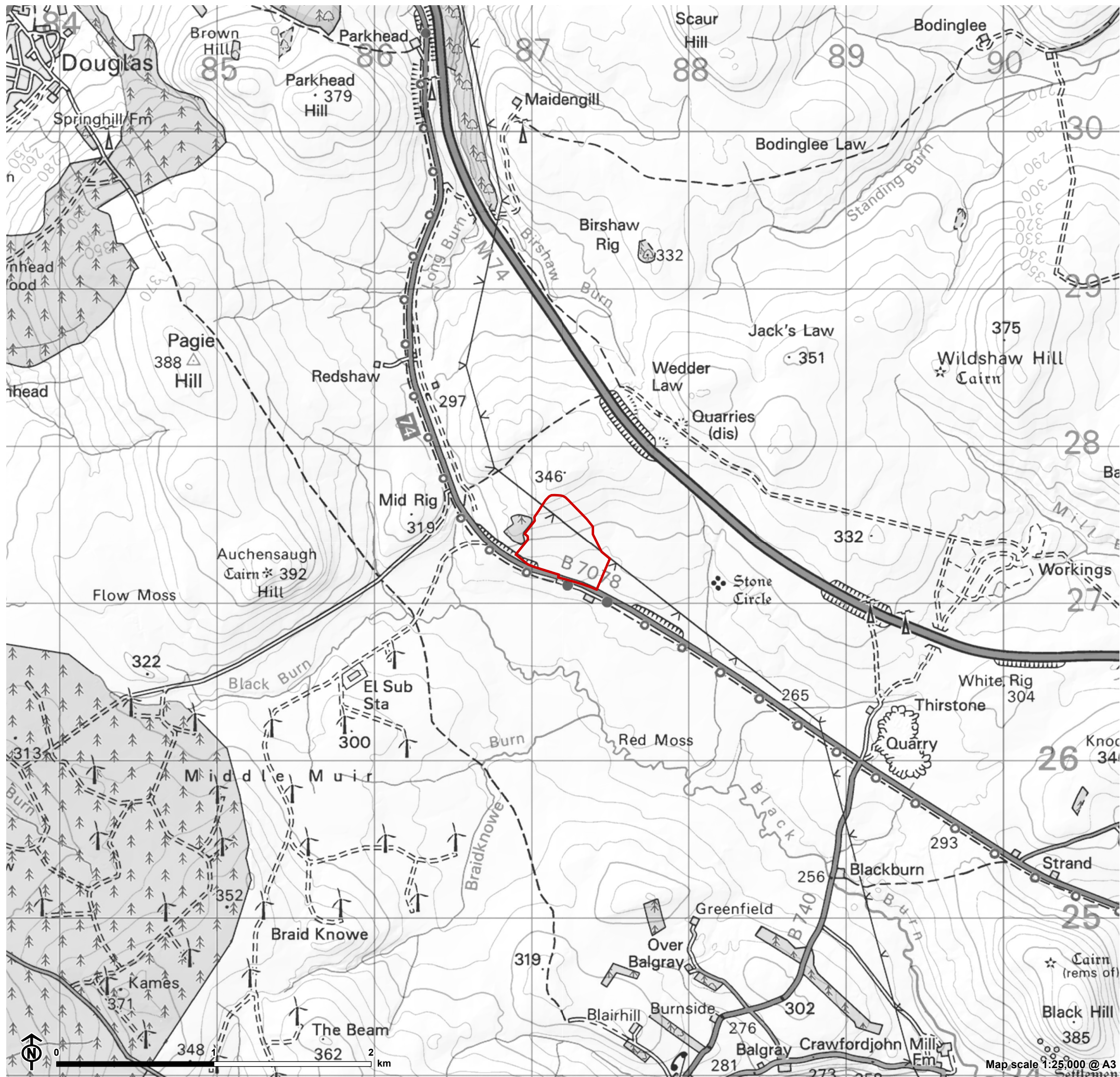


Figure 1: Location Plan

Site boundary

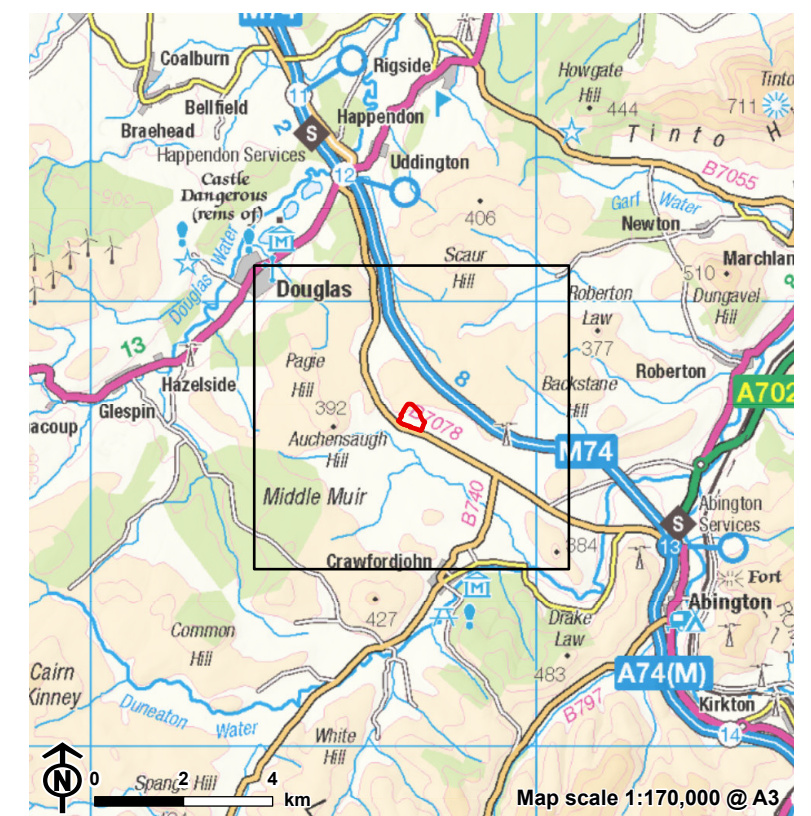
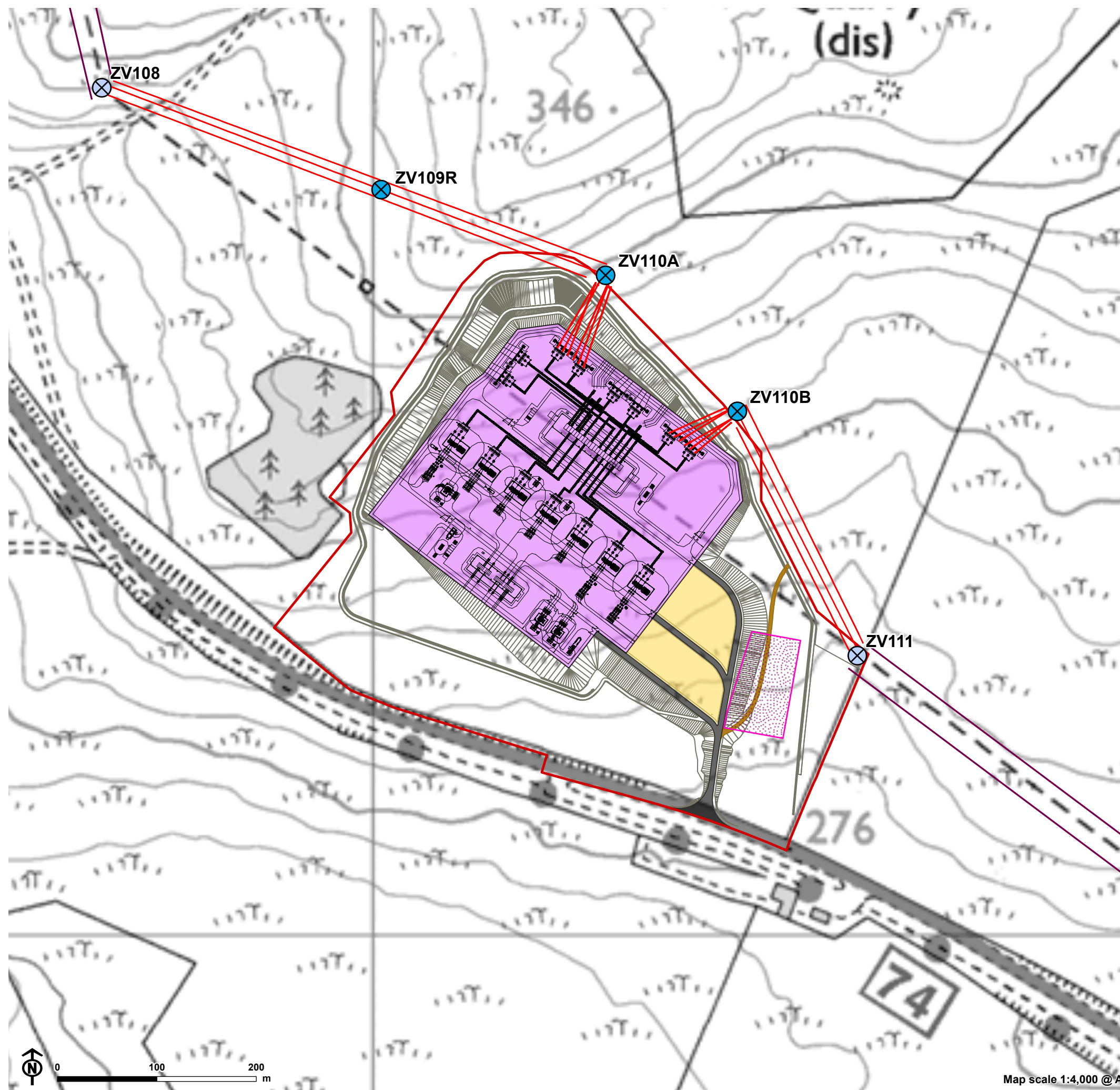


Figure 2: Proposed site plan



- Site boundary
- Proposed Redshaw Substation
- Proposed temporary compound
- Proposed access road
- Proposed farmer's access track
- Proposed laydown space
- Proposed platform earth works
- Proposed electrical layout
- ⊗ Proposed ZV diversion tower (pending determination)
- Proposed 400kV Overhead Line (OHL) ZV diversion (pending determination)
- ⊗ Existing tower
- Existing 400kV Overhead Line (OHL) - ZV route

**Note:**  
ZV diversion subject to a separate consenting process.

[illegible]