

UoR Park House and Library

Technical Note: Biodiversity Net Gain

Prepared on behalf of
University of Reading

Draft Report

17 July 2025

33/38-2A

UoR Park House and Library

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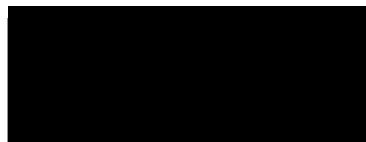
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UoR Park House and Library

Technical Note: Biodiversity Net Gain

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BIODIVERSITY GAIN VALIDATION STATEMENT

This Statement provides the minimum information required for Wokingham Borough Council to validate the planning application for the Proposals, as set out in Article 7 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended by The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024).

EPR hereby confirms that the Applicant believes that planning permission, if granted, would be subject to the biodiversity gain condition.

The on-site and off-site pre-development biodiversity value is taken to be the date that the Application is submitted. No activities resulting in a loss of on-site biodiversity value (degradation) have taken place between 30 January 2020 and this date.

A completed Statutory Biodiversity Metric Calculation Tool (published on 12th February 2024) has been submitted with the Application as part of the Information for Biodiversity Net Gain Pack. This shows the calculations of the pre-development biodiversity value of the onsite habitat on the date of application. The baseline on-site biodiversity value is calculated as follows:

- 0.17 Area Habitat units
- 0 Hedgerow units
- 0 Watercourse units

Plans, drawn to an identified scale and showing the direction of North, are included within this document (**Maps 1 and 2**) showing the on-site habitat existing on the date of application, including any irreplaceable habitat if present.

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Technical Note: Biodiversity Net Gain

1. INTRODUCTION

Scope

- 1.1 This Technical Appendix sets out the details of the Biodiversity Net Gain (BNG) calculations completed for the Proposals, including:
- Assessment Methodology;
 - Summary of evidence underpinning Metric decisions;
 - Assumptions and Limitations;
 - Headline Results;
 - Summary of proposed significant on-site habitat enhancements;
 - Summary of proposed off-site habitat creation/enhancements; and
 - Overview of proposed arrangements for BNG delivery and monitoring.
- 1.2 It is equivalent to the 'BNG Design Stage Report' recommended by the Chartered Institute of Ecology and Environmental Management (CIEEM) in their Biodiversity Net Gain Report & Audit Templates guidance document (CIEEM, 2021a).

Description of Site

- 1.3 The Site consists primarily of Other Neutral Grassland, with an existing electrical substation in the northwest corner of this grassland. The Site also encompasses the existing road network to the north of this grassland area.

Description of Development

- 1.4 The Proposals are for the demolition of the existing substation and the construction of a new, larger substation and associated cable network. The cable route for the proposed substation runs north of the site following the existing road network.

Legislation and Policy Context

- 1.5 A minimum 10% net gain in biodiversity, as measured by the Statutory Biodiversity Metric (DEFRA, 2024a,) is now a condition of most types of planning permission in England under the Environment Act 2021 and associated secondary legislation.
- 1.6 Guidance has clarified that where present on-site, the 10% gain requirement applies individually to three categories of habitat: 'Area Habitats', 'Hedgerows', and 'Watercourses'. This is measured in 'units' which can be delivered on-site, off-site, or a combination of both, and must be secured for a minimum of 30 years.

1.7 The National Planning Policy Framework (NPPF) (DLUHC, 2023) requires local plans to “identify and pursue opportunities for securing measurable net gains in biodiversity” and enhance the natural and local environment by “minimising impacts on and providing net gains for biodiversity”.

1.8 Local Planning policy CP7 states that:

“Development:

A) Which may harm county designated sites (Local Wildlife Sites in Berkshire), whether directly or indirectly, or

B) Which may harm habitats or, species of principle importance in England for nature conservation, veteran trees or features of the landscape that are of major importance for wild flora and fauna (including wildlife and river corridors), whether directly or indirectly, or

C) That compromises the implementation of the national, regional, county and local biodiversity action plans

will be only permitted if it has been clearly demonstrated that the need for the proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available which will meet the need, and:

i) Mitigation measures can be put in place to prevent damaging impacts; or

ii) Appropriate compensation measures to offset the scale and kind of losses are provided.”

Guidance

1.9 The following guidance documents have informed the BNG assessment and overall approach:

- DEFRA’s Biodiversity Gain Guidance, available at: <https://www.gov.uk/government/collections/biodiversity-net-gain>;
- The Statutory Biodiversity Metric User Guide (DEFRA, 2024);
- The UK Habitat Classification Version 2.0 (UKHab Ltd, 2023);
- Biodiversity Net Gain. Good Practice Principles for Development – A Practical Guide (Baker et al., 2019);
- Biodiversity Net Gain Report and Audit Templates (CIEEM, 2021a);
- Good Practice Requirements for Delivering Biodiversity Net Gain (On- and Off-Site) (CIEEM, 2021b); and
- BS8683:2021 Process for designing and implementing Biodiversity Net Gain – Specification (BSI, 2021).

2. ASSESSMENT METHODOLOGY

Metric Version and Assessors

- 2.1 The Statutory Biodiversity Metric and Condition Assessments published 12th February 2024 were used for this BNG assessment.
- 2.2 The calculations were carried out by Liam Mayle and reviewed by Alison Hogan both experienced ecologists and BNG practitioners.

Baseline Surveys

On-Site

- 2.3 Baseline habitat and condition assessment surveys were carried out by Liam Mayle of EPR on 11th June 2025.
- 2.4 Habitat mapping was undertaken according to the UK Habitat Classification v.2.0 methodology (UKHab Ltd, 2023) and translated into BNG habitat categories where necessary.
- 2.5 Following the survey, each area or length of habitat was assigned an individual 'Habitat ID' and mapped in ESRI ArcGIS software (**Map 1**).

Post-Development Plans

On-Site

- 2.6 The following plans produced by other technical consultants, submitted for approval with the Application, were used as the basis for the post-development calculations. These plans were imported into ArcGIS software and each line or polygon was assigned a BNG habitat type (**Map 2**):
 - 250709 - XXXXXXXX-TVS-XX-XX-DR-B-XXXX (**Appendix 1**)

Metric Inputs

- 2.7 As set out in the Statutory Metric User Guide (DEFRA, 2024), one of the key principles of the Biodiversity Metric is that *"this biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice"*.
- 2.8 When completing a Metric, the assessor must therefore make a number of decisions based on available evidence (such as ecological survey data), professional judgement, and ecological expertise. The User Guide (DEFRA, 2024) also states that *"Evidence for metric decisions should be provided and signposted within the 'User Comments' column of the biodiversity metric tool"*.
- 2.9 To ensure that the Metric Calculation Tool remains as user-friendly as possible, the following paragraphs expand upon the User Comments to provide more detail on the decisions behind the data entered into the Metric, where this is considered necessary and proportionate.

On-Site Habitat Type and Condition

Target Conditions

- 2.10 Target habitat conditions have been predicted with reference to the relevant Condition Assessment sheet (DEFRA, 2024b), with full details and justifications set out in the separate spreadsheet submitted with the Application.
- 2.11 The target conditions are considered to be realistic and achievable and will be delivered and maintained through the implementation of the Habitat Management and Monitoring Plan (HMMP) to be submitted alongside the Biodiversity Gain Plan to discharge the general biodiversity gain planning condition, should consent be granted.

Strategic Significance

- 2.12 The Wokingham Borough Council Core Strategy 2026 (adopted January 2010) and the Managing Development Delivery (MDD) local plan (adopted February 2014) were used to identify strategic significance. These documents refer to the need to retain and enhance woodland and hedgerow habitats.

Assumptions and Limitations

- 2.13 The current proposal options are outline schemes, so post-development plans lack detail regarding exact species composition of seed mixes and tree/shrub/hedge planting.

General Limitations of Metrics

- 2.14 As acknowledged in the User Guide (DEFRA, 2024), the Statutory Biodiversity Metric includes several inherent limitations. Extracts are provided below:

'The use of this biodiversity metric does not override existing biodiversity protections, statutory obligations, policy requirements, ecological mitigation hierarchy or any other requirements. This includes consenting or licensing processes, for example woodlands.' (Principle 2).

'This biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice.' (Principle 4)

'This biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance.' (Principle 6)

- 2.15 In relation to Principle 2, protected and priority species are considered in detail as part of the EIA/EcIA. This also includes avoiding and mitigating impacts and promoting enhancements such as the provision of wildlife boxes, the latter of which should also be taken into account when assessing the overall BNG that can be delivered by the Proposals.

3. SUMMARY OF RESULTS

Introduction

- 3.1 The following should be read with reference to **Maps 1 and 2** and the completed Metric Calculation Tool (particularly the Assessor Comments column) and Condition Assessment spreadsheets submitted separately with the application.

Description of Baseline

- 3.2 The total number of on-site baseline units is calculated as follows:
- 0.17 Area Habitat units
 - 0 Hedgerow units
 - 0 Watercourse units
- 3.3 The existing substation and road network are classified as Developed Land, Sealed Surface, while the grassland area consists of Other Neutral Grassland in Poor condition.
- 3.4 An introduced shrub stands immediately east of the existing substation, and a small section of Beech *Fagus sylvaticus* hedgerow at the northern edge of the grassland falls within the Site boundary. however, both the shrub and hedgerow section fall below the minimum mapping unit sizes (25m² and 5m, respectively) and so do not form part of the BNG calculation.

The BNG Hierarchy

- 3.5 The Proposals were designed with ecological input from an early stage and due consideration has been given to the BNG Hierarchy throughout the masterplanning process.
- 3.6 The BNG Hierarchy, as set out in Article 37A of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended) requires developers to take the following steps in relation to BNG:
- Avoidance of adverse effects to on-site habitats of 'Medium' distinctiveness and above;
 - Insofar as they cannot be avoided, mitigating those effects;
 - Insofar as they cannot be mitigated; compensating for those effects by prioritising in order, where possible:
 - 1) Enhancement of existing on-site habitats;
 - 2) Creation of new on-site habitats;
 - 3) Allocation of registered off-site gains; and finally
 - 4) Purchase of national off-site biodiversity credits.
- 3.7 **Tables 3.1** summarises how the BNG Hierarchy has been applied by the Proposals.

Table 3.1: Application of the BNG Hierarchy

Action	Evidence of application
Impact Avoidance:	N/A
Mitigation:	N/A
Compensation:	
Habitat enhancements (on-site)	Enhancement of 0.043ha on-site other neutral grassland from poor to moderate condition.
Habitat creation (on-site)	Creation of 0.002ha other neutral grassland.
Off-site gains allocated to Application	N/A
Purchase of Biodiversity Credits	N/A

Headline Results

3.8 As set out in the Metric Calculation Tool submitted with the Application, the Proposals are predicted to deliver the following net unit change:

- +0.05 area habitat units, or +26.41%

On-Site Proposals to Deliver Net Gain

- 3.9 0.043ha of other neutral grassland will be enhanced from Poor to Moderate condition, through seeding with Emorsgate EM2f Standard General Purpose Wildflower Mix, or similar approved, to increase the number of species per m² and favourable ongoing management.
- 3.10 0.002ha additional Other Neutral Grassland in Moderate condition will be created where the existing substation currently stands.

4. PROPOSALS FOR DELIVERY AND MONITORING

Delivery

On-Site

- 4.1 A Draft HMMP will set out the proposed details of how the target habitat types and conditions required to achieve the BNG results reported in **Section 3** will be achieved. This will be through a combination of habitat retention, creation and enhancement measures, followed by ongoing management for a minimum period of 30 years for the 'significant' on-site enhancements described in **Section 3**.
- 4.2 Should planning consent be granted, the final version of the HMMP will be submitted to Wokingham Borough Council alongside a Biodiversity Gain Plan to discharge the biodiversity gain planning condition. The mechanism for securing the delivery of significant on-site enhancements is to be agreed with Wokingham Borough Council, but could take the form of a planning condition, planning obligation or conservation covenant.

Monitoring

On-Site

- 4.3 The successful establishment of newly created habitats, and progress of all habitats towards their post-development Target Conditions, will need to be regularly monitored to ensure that the predicted BNG will be realised on the ground. The HMMP will set out details of the proposed monitoring actions and frequency.

Conclusion

- 4.4 This Technical Report has set out the methodology and results of the Statutory Biodiversity Metric calculations completed for the Proposals, which predict a net change of:
- **+0.05 area habitat units (+26.41%)**
- 4.5 Net gains will be delivered through a combination of onsite habitat creation and offsite hedgerow creation.
- 4.6 Should planning consent be granted, full details of the arrangements for the delivery of minimum 10% BNG will be set out in a Biodiversity Gain Plan and final Habitat Management and Monitoring Plan and submitted to Wokingham Borough Council for approval.
- 4.7 It is therefore concluded that the Proposals as envisaged, combined with off-site gains to be agreed with Wokingham Borough Council, would comply with the statutory minimum requirements for 10% biodiversity net gain as a condition of planning permission in England under the Environment Act 2021 and Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended), as well as with the NPPF and local planning policy.

5. REFERENCES

- Chartered Institute of Ecology and Environmental Management (CIEEM) (2021). *Biodiversity Net Gain Report & Audit Templates. Version 1 July 2021*. CIEEM, Winchester.
- CIEEM, CIRIA and IEMA (2019). *Biodiversity net gain. Good practice principles for development*.
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- The British Standards Institution (BSI) (2021). *BS 8683:2021 Process for designing and implementing Biodiversity Net Gain – Specification*. British Standards Limited, 2021.
- UKHab Ltd (2023). *UK Habitat Classification Version 2.0*. Available at <http://ukhab.org>
- Wokingham Borough Council Core Strategy 2026 (adopted January 2010)
- Wokingham Borough Council Managing Development Delivery (adopted February 2014)

Maps

MAPS

- | | |
|--------------|------------------------------|
| Map 1 | On-site BNG Baseline |
| Map 2 | On-site BNG Post-Development |



Map 1 On-Site Baseline Habitats

KEY

- Site boundary
- Non-native shrub
- Native hedgerow
- Other neutral grassland
- Developed land; sealed surface

SCALE: 1:325 at A3

0 5 10 15 20 Metres



CLIENT: University of Reading

PROJECT: Park House and Library Substation

DATE: 11 July 2025



Map 2 On-Site Post Development Habitats

KEY

Site boundary

Lost

Tree

Retained

Native hedgerow

Other neutral grassland

Developed land; sealed surface

Created

Grassland

Developed land; sealed surface

SCALE: 1:325 at A3

05101520 Metres

N

CLIENT: University of Reading

PROJECT: Park House and Library Substation

DATE: 11 July 2025

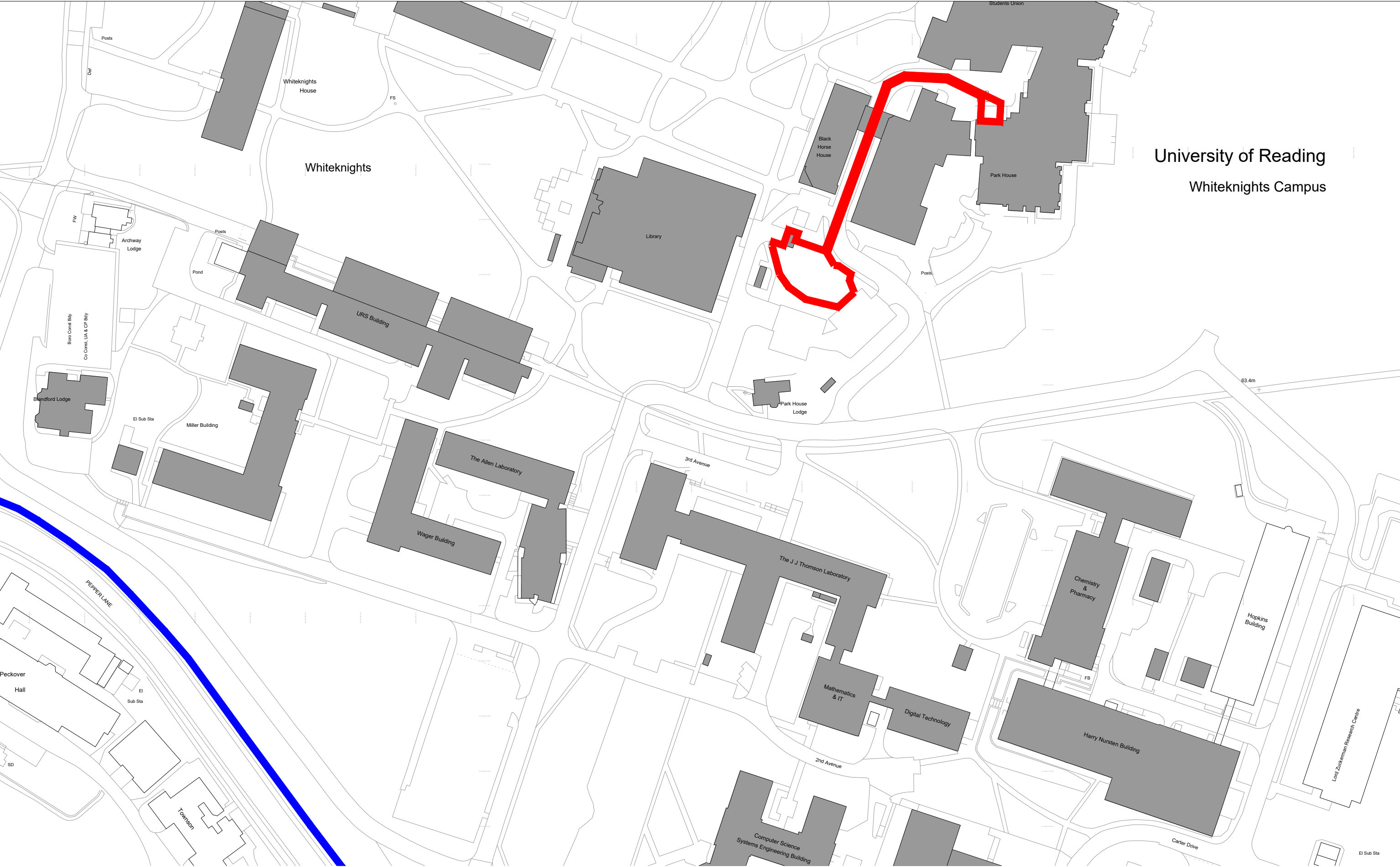
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Basemap: Site Plan 2 - Proposed, Thames Valley Surveying, XXXXXX-TV5-XX-XX-DR-B-XXXX-18101, Rev A, 09/07/2025

P33/38

Appendix 1

250709 - XXXXXXXX-TVS-XX-XX-DR-B-XXXX



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Whiteknights Campus

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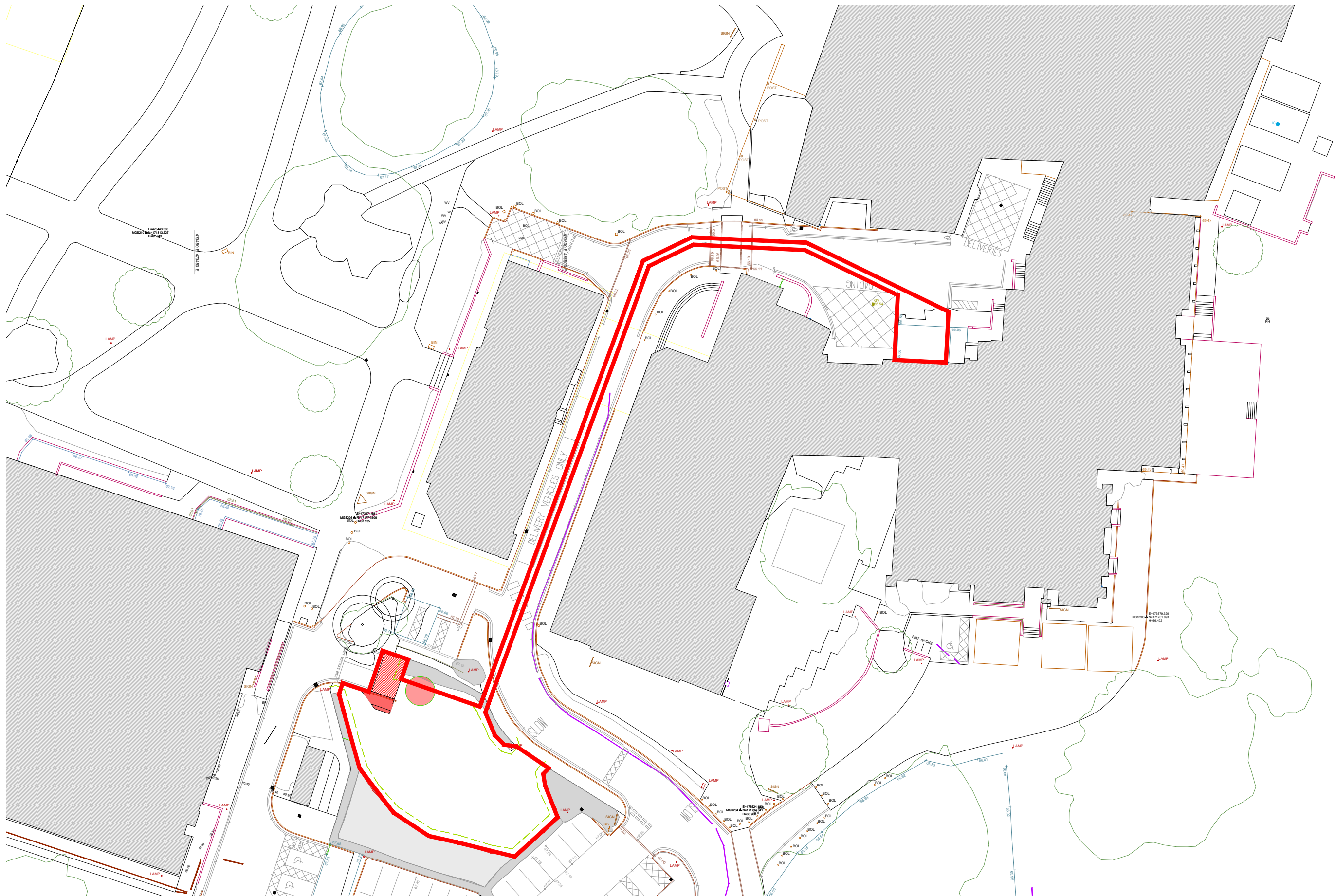
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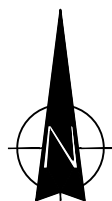
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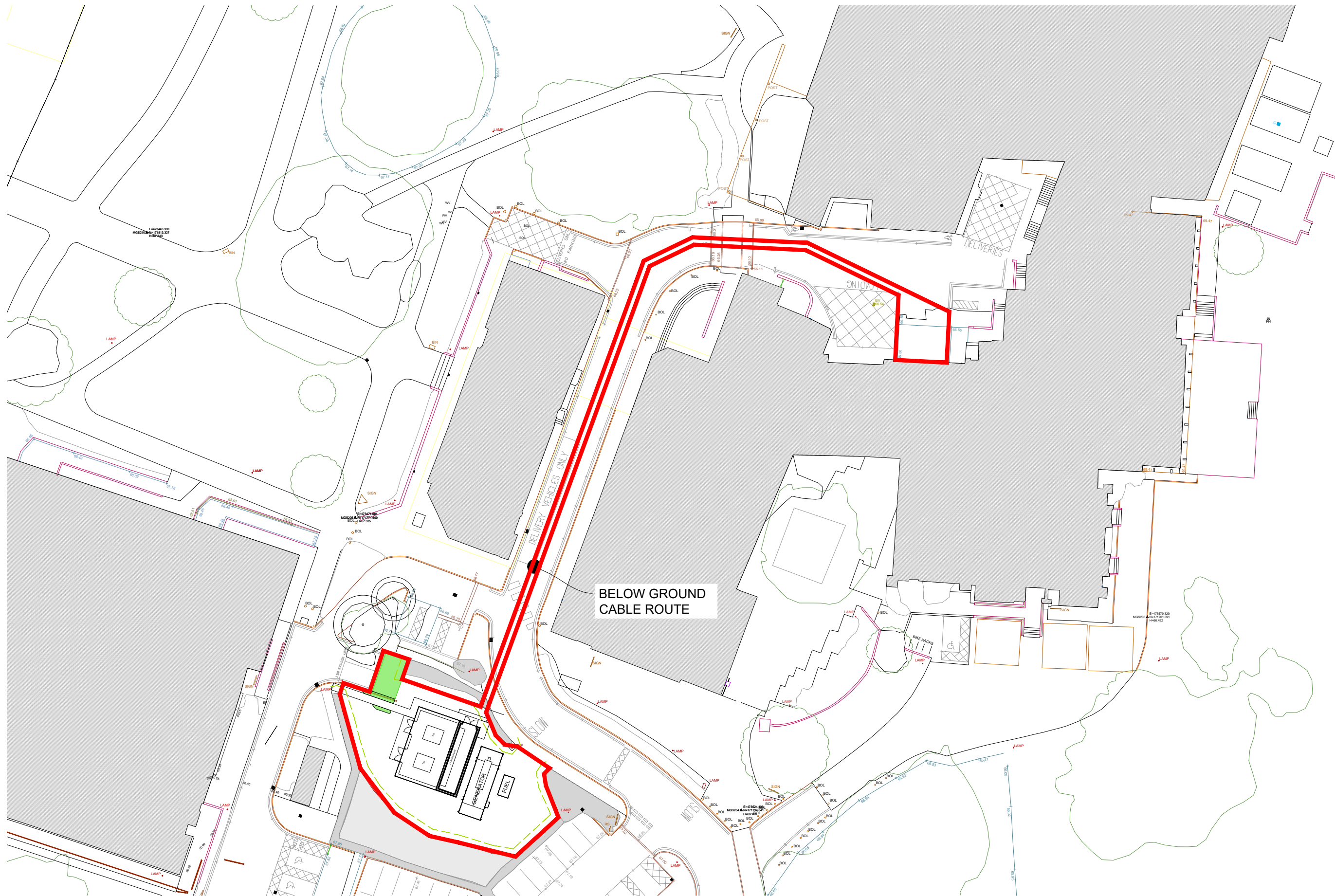
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Project New Substation and Generator			
Title Site Plan 1 - Existing			
Rev	Description	Date	
Drawn JW	Date 11/6/25	Scale 1:500@A3	
Project (WREN No.-Originator-Volume-Level-Type-Role-Classification-Number)			Suitability-Rev.
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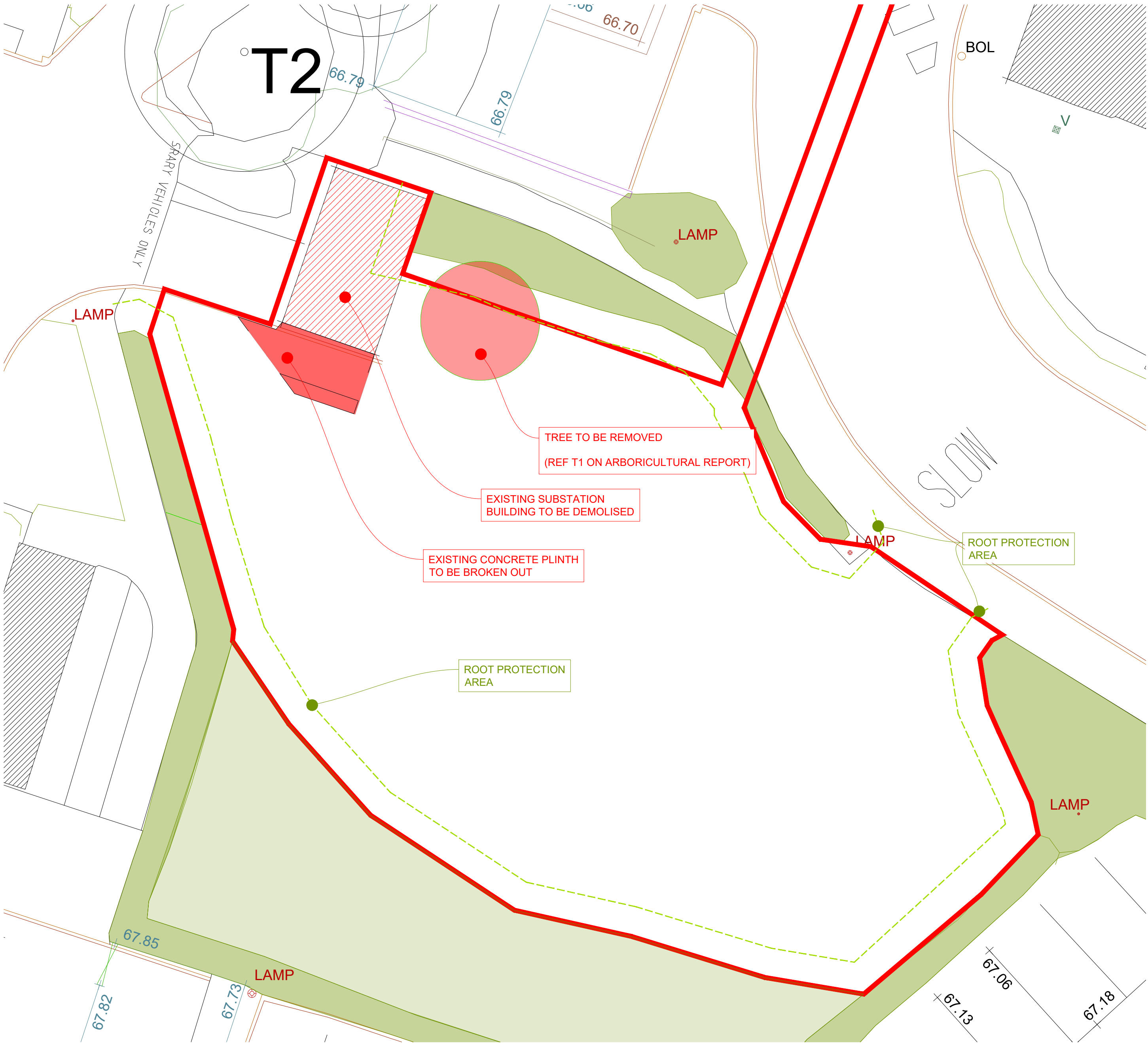
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Building W123 Substation (Park House)					
	A	Red line amended		9/7/25	
Project New Substation and Generator	Rev	Description			Date
Title Site Plan 1 - Proposed	Drawn JW	Date 11/6/25		Scale 1:500@A3	
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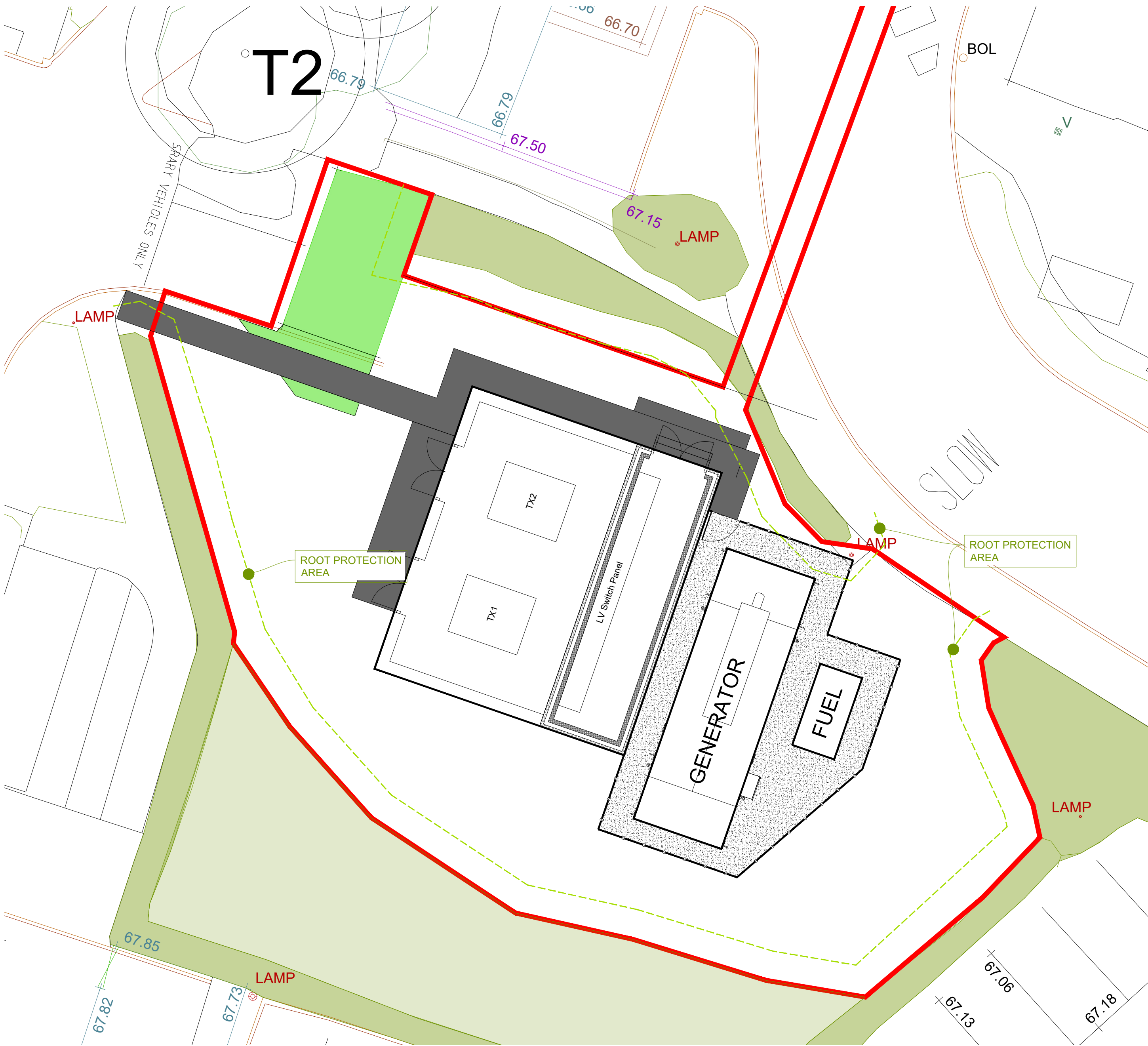
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**TVS**
Thames Valley Surveying

Building W123 Substation (Park House)	Rev	A	Red line amended, drawing changed to A2 sheet	Date 9/7/25
Project New Substation and Generator	Drawn	JAW	Date 11/6/25	Scale 1:100@A2
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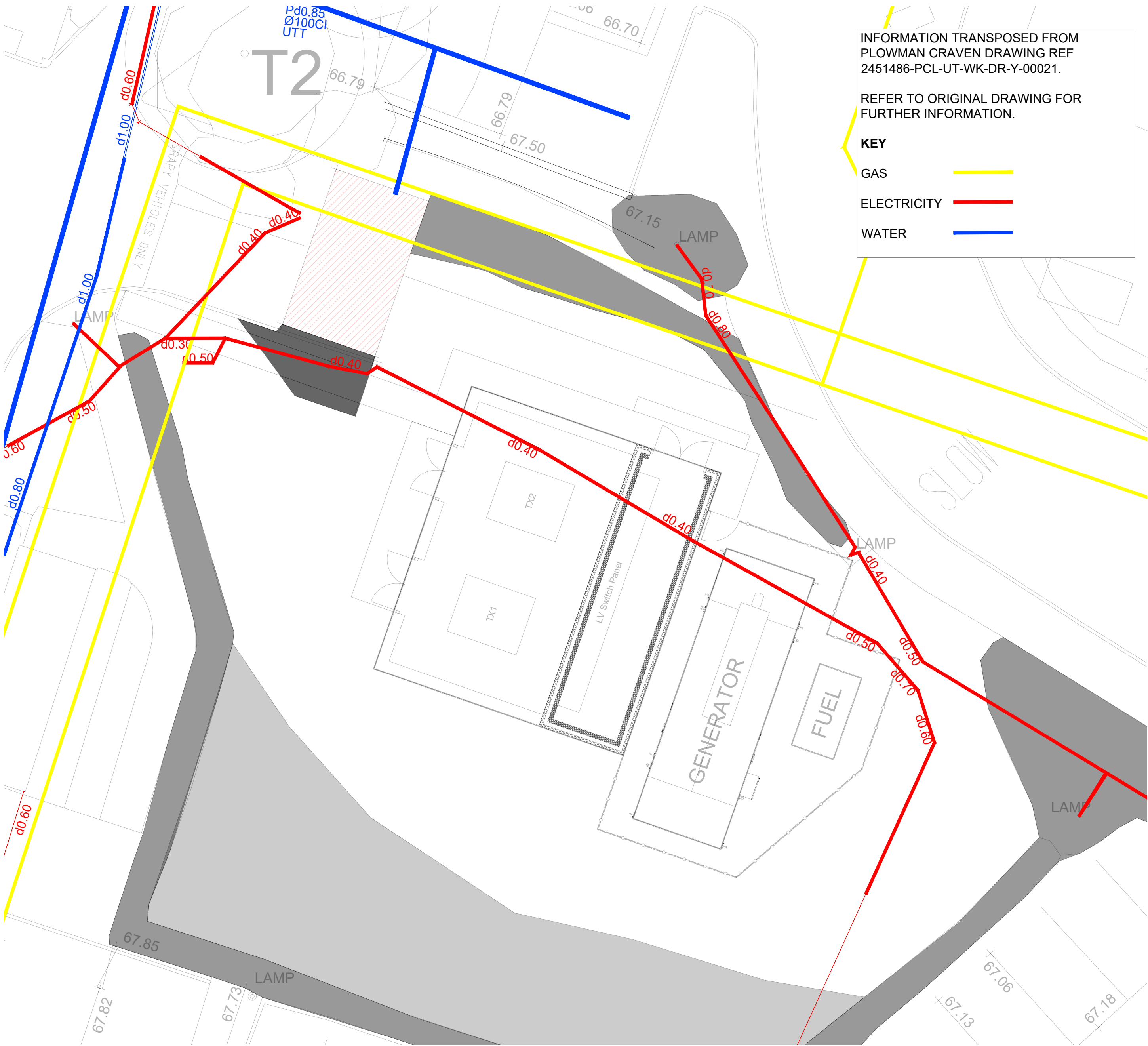
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Building		W123 Substation (Park House)		A		Red line amended, drawing changed to A2 sheet		9/7/25			
Project		New Substation and Generator		Rev		Description		Date			
Title		Site Plan 2 - Proposed		Drawn		Date		Scale			
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				Project (WREN No - Originator Volume Level Type Role Classification Number)						Suitability-Rev.	
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KEY

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ELECTRICITY ———

WATER ———

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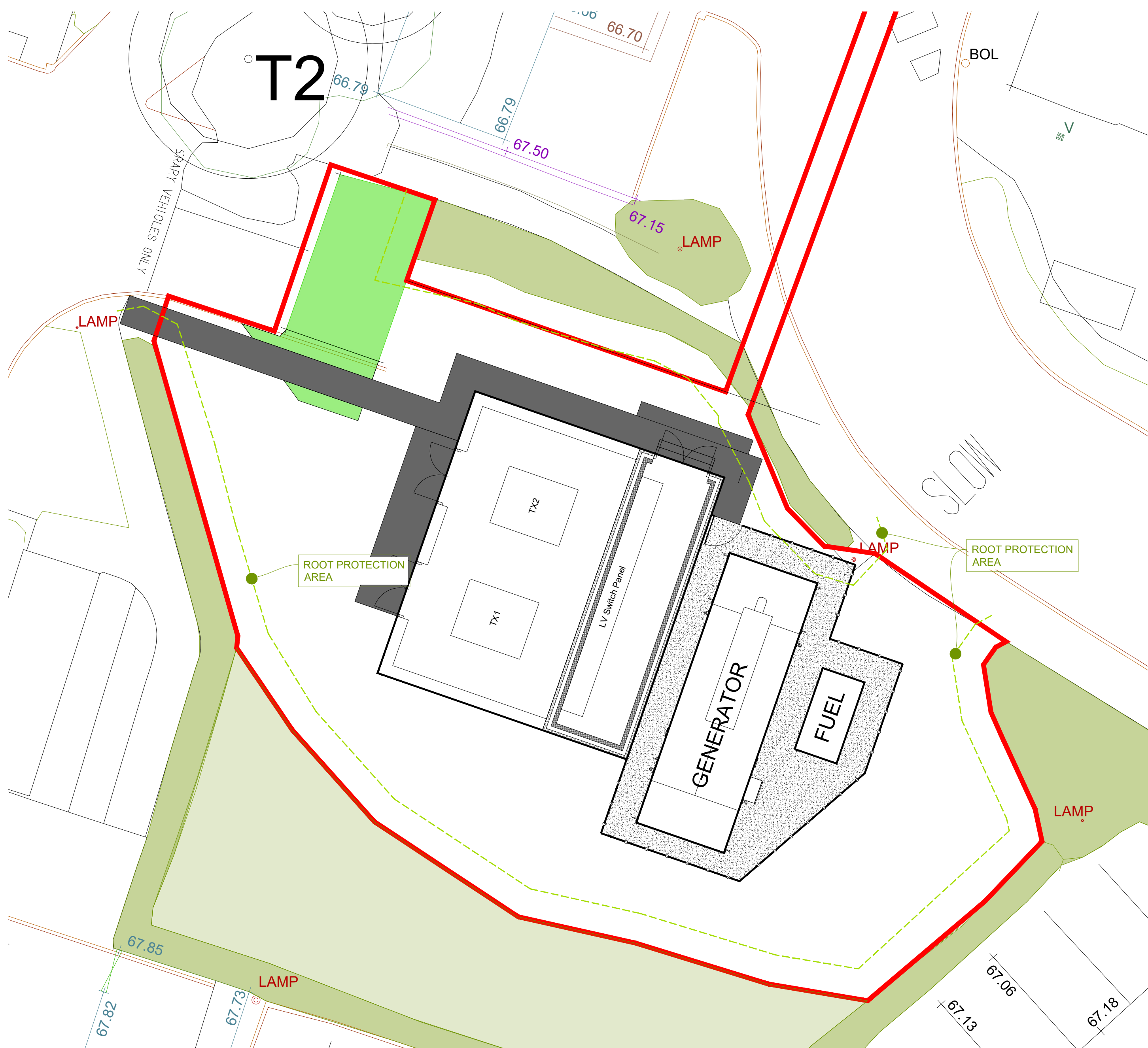


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TVS
 Thames Valley Surveying

Building	W123 Substation (Park House)			
Project	New Substation and Generator			
Title	Site Plan 2 - Buried Services Scan			
Rev	A Red line amended, drawing changed to A2 sheet			Date 9/7/25
Drawn	JAW	Date 11/6/25	Scale 1:100@A2	
Project (WREN No. Originator Volume Level Type Role Classification Number)				Suitability Rev.
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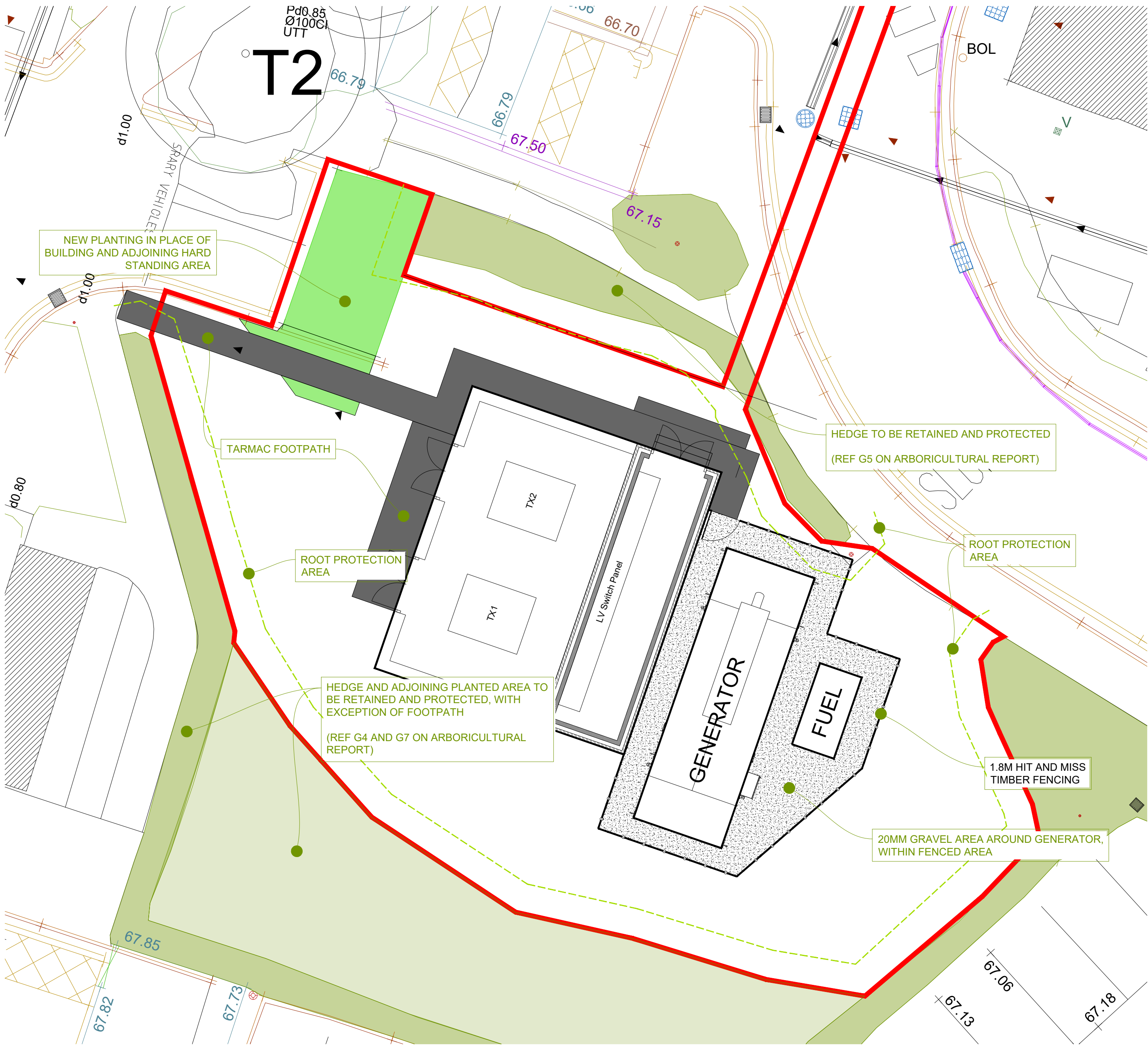
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Building				
W123 Substation (Park House)	A	Red line amended, drawing changed to A2 sheet		9/7/25
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New Substation and Generator	Drawn JAW	Date 11/6/25	Scale 1:100@A2	
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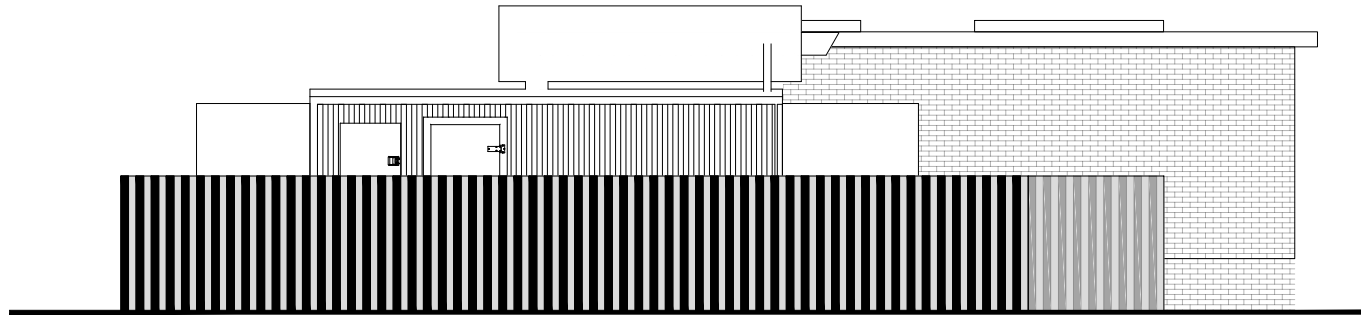


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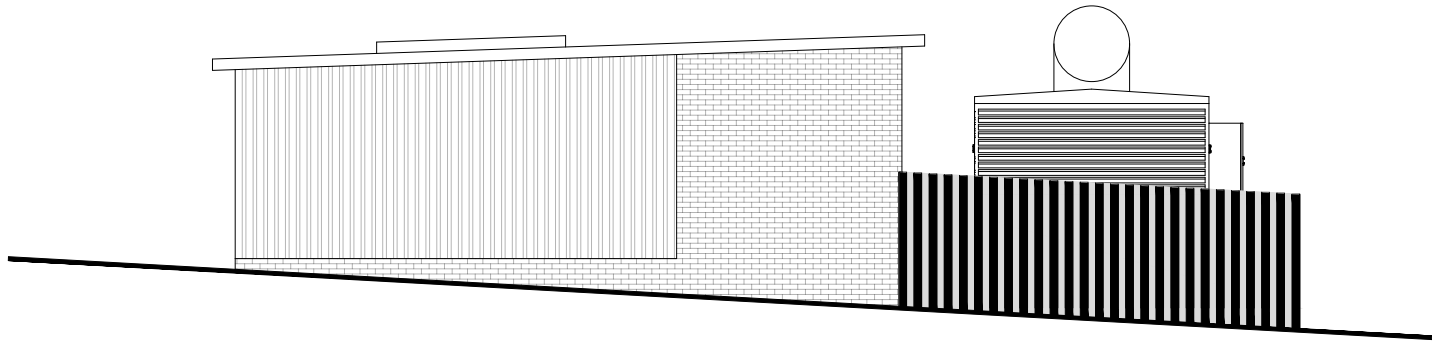
TVS
Thames Valley Surveying

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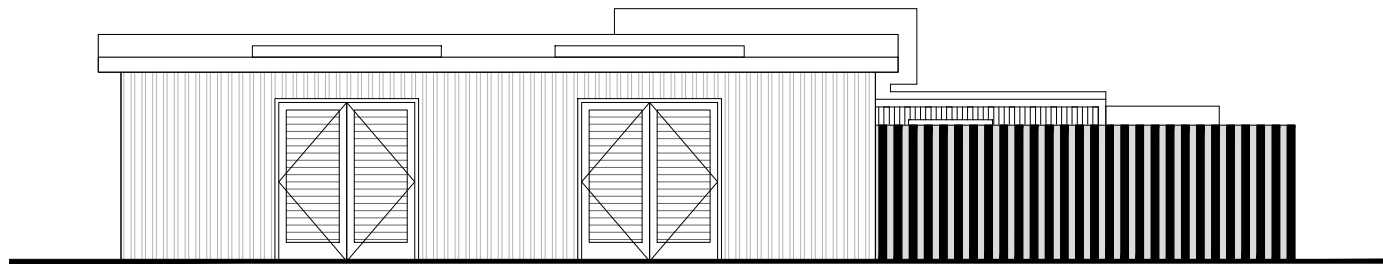
Elevation 1

1:100@A3



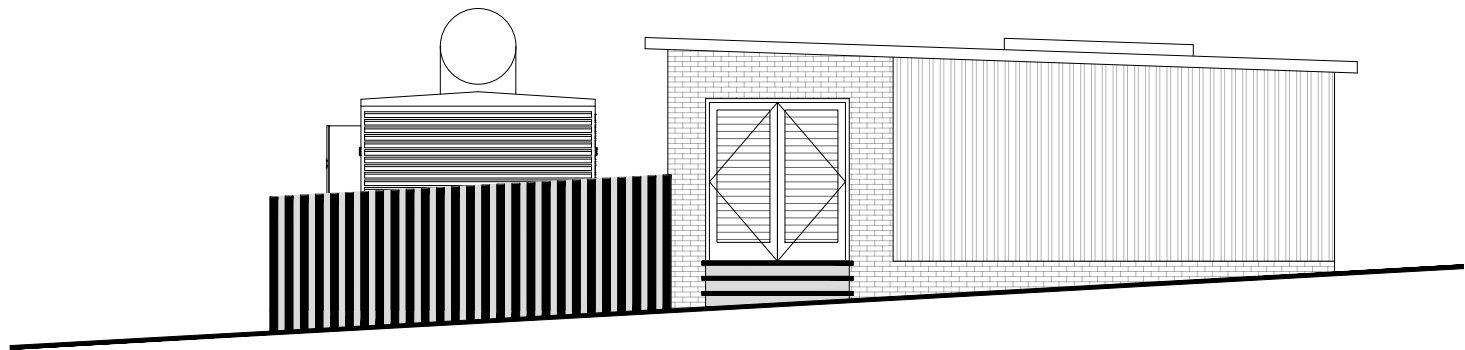
Elevation 2

1:100@A3



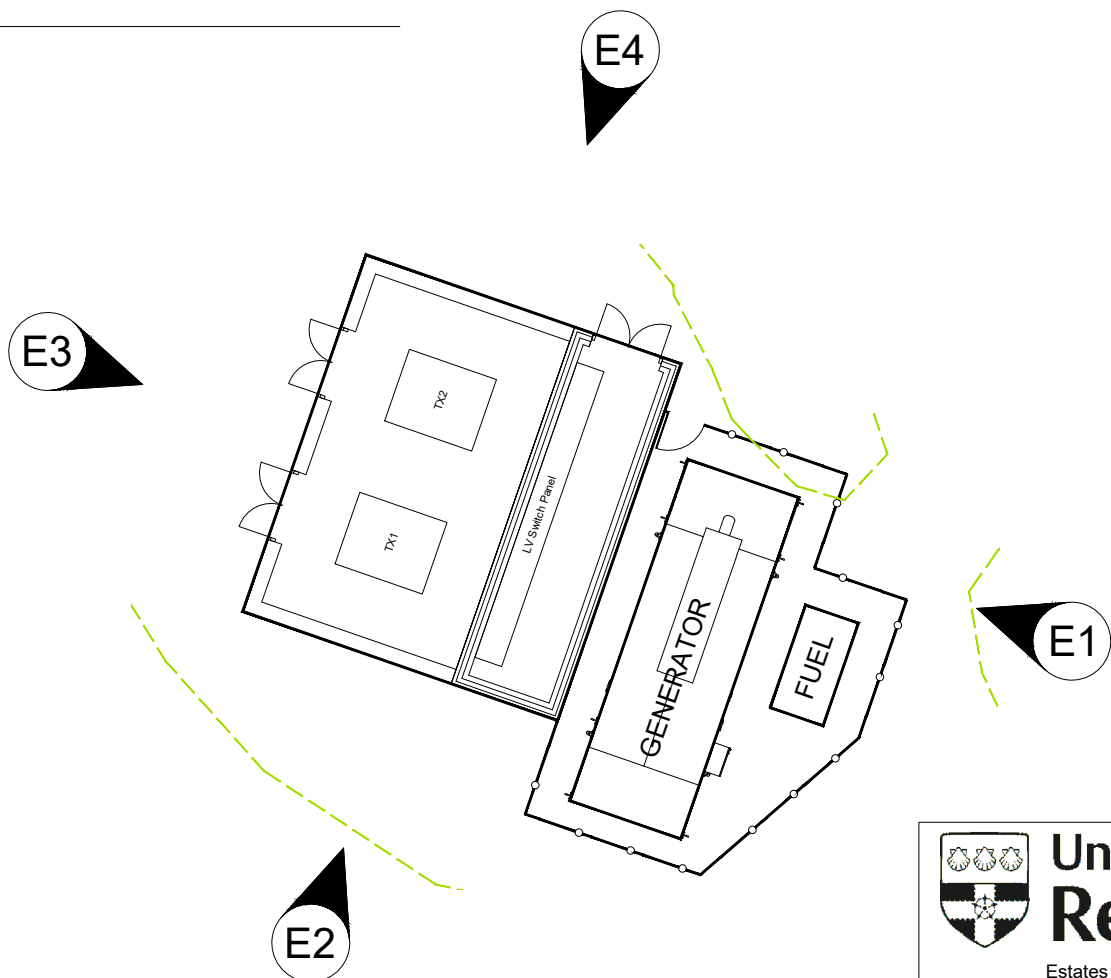
Elevation 3

1:100@A3



Elevation 4

1:100@A3



Estates and Facilities
The information shown on this drawing is given without obligation or warranty. The accuracy therefore cannot be guaranteed and it must never be used for calculation or setting out of works.
General Changes
The accuracy of these drawings relies on feedback from the users. If any anomalies are discovered, please immediately inform the CAD Manager. Telephone ext 6807.



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V

S

Thames Valley Surveying

Building W123 Substation (Park House)	A		Red line amended, drawing changed to A2 sheet ground levels adjusted		9/7/25
Project New Substation and Generator	Rev	Description			Date
Title Hard and Soft Landscaping	Drawn JAW	Date 11/6/25	Scale 1:100@A3		
	Project (WREN No.-Originator-Volume-Level-Type-Role-Classification-Number)				Suitability-Rev.
	XXXXXXX-TV-S-XX-XX-DR-B-XXXX-21001				A

Appendix 2

BNG Metric

Project Name: Parkhouse and Library Substation

Map Reference:

A-1 On-Site Habitat Baseline

Condense / Show Columns

Condense / Show Rows

Main Menu

Area habitat summary	
Total Net Unit Change	0.05
Total Net % Change	26.41%
Trading Rules Satisfied	Yes ✓

Existing area habitats					Distinctiveness		Condition		Strategic significance			Required Action to Meet Trading Rules	Ecological baseline
Ref	Broad Habitat	Habitat Type	Irreplaceable habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier		Total habitat units
1	Grassland	Other neutral grassland	No	0.043	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (≥)	0.17
2	Urban	Developed land; sealed surface	No	0.002	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
3	Urban	Developed land; sealed surface	No	0.016	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
4	Urban	Developed land; sealed surface	No	0.001	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
5													
6													
7													
8													
9													
				Total habitat area									0.17
				Site Area (Excluding area of individual trees, green walls, intertidal hard structures)									

M² to hectares conversion tool:

Select a unit

Hectares

M²

						Bespoke compensation agreed for losses of VHDH or irreplaceable habitat	Comments		
Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost		User comments	Planning authority comments	Habitat reference number
	0.03	0.00	0.12	0.01	0.05				EPR 1
		0.00	0.00	0.00	0.00				EPR 2, EPR 5
0.016		0.00	0.00	0.00	0.00				EPR 3
		0.00	0.00	0.00	0.00				EPR 4
0.02	0.03	0.00	0.12	0.02	0.05				

Total area lost (excluding area of individual trees, green walls and intertidal hard structures)	0.02
--	------

Project Name: Parkhouse and Library Substation

Map Reference:

A-2 On-Site Habitat Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Area habitat summary	
Total Net Unit Change	0.05
Total Net % Change	26.41%
Trading Rules Satisfied	Yes ✓
Area Check	Area Acceptable ✓

Ref	Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness		Condition		Strategic significance		
				Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier
1	Urban	Developed land; sealed surface	0.018	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1
2	Grassland	Other neutral grassland	0.002	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1
3										
4										
5										
6										
7										
Total habitat area			0.02							
Site Area (Excluding area of individual trees, green walls, intertidal hard structures)			0.02							
M² to hectares conversion tool:				Select a unit	Hectares	M²				

Post intervention habitats										
Temporal multiplier						Difficulty multipliers				Habitat units delivered
Standard time to target condition (years)	Habitat created in advance (years)	Delay in starting habitat creation (years)	Standard or adjusted time to target condition	Final time to target condition (years)	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	
0			Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Low	1	0.00
5			Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	0.01
									Total Units	0.01

[illegible]

Project Name: Parkhouse and Library Substation Map Reference:

A-3 On-Site Habitat Enhancement

Condense / Show Columns

Condense / Show Rows

Main Menu

[illegible]

Area habitat summary	
Total Net Unit Change	0.05
Total Net % Change	26.41%
Trading Rules Satisfied	Yes ✓

Proposed Habitat (Broad habitat pre-populated but can be overridden)		Change in distinctiveness and condition		Area (hectares)	Distinctiveness	Score	Condition	Score
Proposed Broad Habitat	Proposed habitat	Distinctiveness change	Condition change					
Grassland	Other neutral grassland	Medium - Medium	Poor - Moderate	0.03	Medium	4	Moderate	2
Total habitat area				0.03				

Post intervention habitats													Habitat units delivered
Strategic significance			Temporal risk multiplier						Difficulty risk multipliers				
Strategic significance	Strategic significance	Strategic significance multiplier	Standard time to target condition (years)	Habitat enhanced in advance (years)	Delay in starting habitat enhancement (years)	Standard or adjusted time to target condition	Final time to target condition (years)	Final time to target multiplier	Standard difficulty of enhancement	Applied difficulty multiplier	Final difficulty of enhancement	Difficulty multiplier applied	
Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10			Standard time to target condition applied	10	0.700	Low	Standard difficulty applied	Low	1	0.20
													0.20

Comments		
User comments	Planning authority comments	Habitat reference number