

Network Rail Infrastructure Ltd
Network Rail Intake Substation
Design and Access statement

E100-ARP-REP-AR-000003

01 | 13 Nov 2015

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.


Job number 233394

Ove Arup & Partners International Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

ARUP

Document Verification

ARUP

Job title		Network Rail Intake Substation		Job number 233394	
Document title		Design and Access statement		File reference 04.01	
Document ref		E100-ARP-REP-AR-000003			
Revision	Date	Filename	Design and Access statement.doc		
01	13.11.15	Description	Issued for Planning Application		
			Prepared by	Checked by	Approved by
		Name	Sean Connelly	Constance Ridout	Simon King
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			

Issue Document Verification with Document



0.0 CONTENTS

1.0 INTRODUCTION

2.0 EXISTING SITE ARRANGEMENT

2.1 Site History

2.2 Local Characteristics

2.3 Immediate Surroundings

2.4 The Site

3.0 PROPOSED SITE ARRANGEMENT

3.1 Overall Arrangement

3.2 Functional Arrangement

3.3 Architecture

4.0 ACCESS STATEMENT

4.1 Vehicular and Pedestrian Access around Barnby Street

4.2 Existing Site Access

4.3 Proposed Site Access

APPENDICES

NETWORK RAIL INTAKE SUBSTATION

DESIGN ACCESS STATEMENT

E100-ARP-REP-AR-000003

1.0 INTRODUCTION

Network Rail is seeking planning permission from London Borough of Camden for the development of the Euston new intake substation site, due to the effect of planned works on the Euston existing Network Rail 11kV power supply ring.

Details of the new Euston intake substation electrical system described within this Design and Access Statement document, are aimed to provide the required information to adequately support Network Rail's planning application to the London Borough of Camden.

The Site as described in the following section represents a vital asset to Network Rail. It's direct proximity to railway lands, connected to Euston station, make it an ideal location for such a key infrastructure asset.



2.0 EXISTING SITE ARRANGEMENT

2.1 SITE HISTORY

The site sits within the Amphyll square Estate. The original Amphyll square dates from the late 1800's. Much of the site was at that time part of the central gardens of Amphyll square. The railway lines of Euston Station passed through the square with two bridges spanning it. The most southerly of these connected with the east railway embankment at approximately the same location as the ramps to the current station. The bridge was removed in 1964.

The Amphyll square estate was redeveloped in 1965 to include a number of high rise and mid rise residential blocks for social housing. The three high rise towers are all over twenty storeys in height. This coincided with the redevelopment of Euston Station. As part of this ramp access to platforms (gate G) and up to the Parcel deck (Gate H) was added. These are both accessible from Barnby Street.

2.2 LOCAL CHARACTERISTICS

Barnby Street is accessed from Eversholt Street. The surrounding area is a mixture of architectural styles. Victorian Town-houses and tenements mix with later social housing units. These are predominantly built with traditional London Stock, or similar brick types. In contrast to this is the blue grey brick of the 1960's Euston Station.

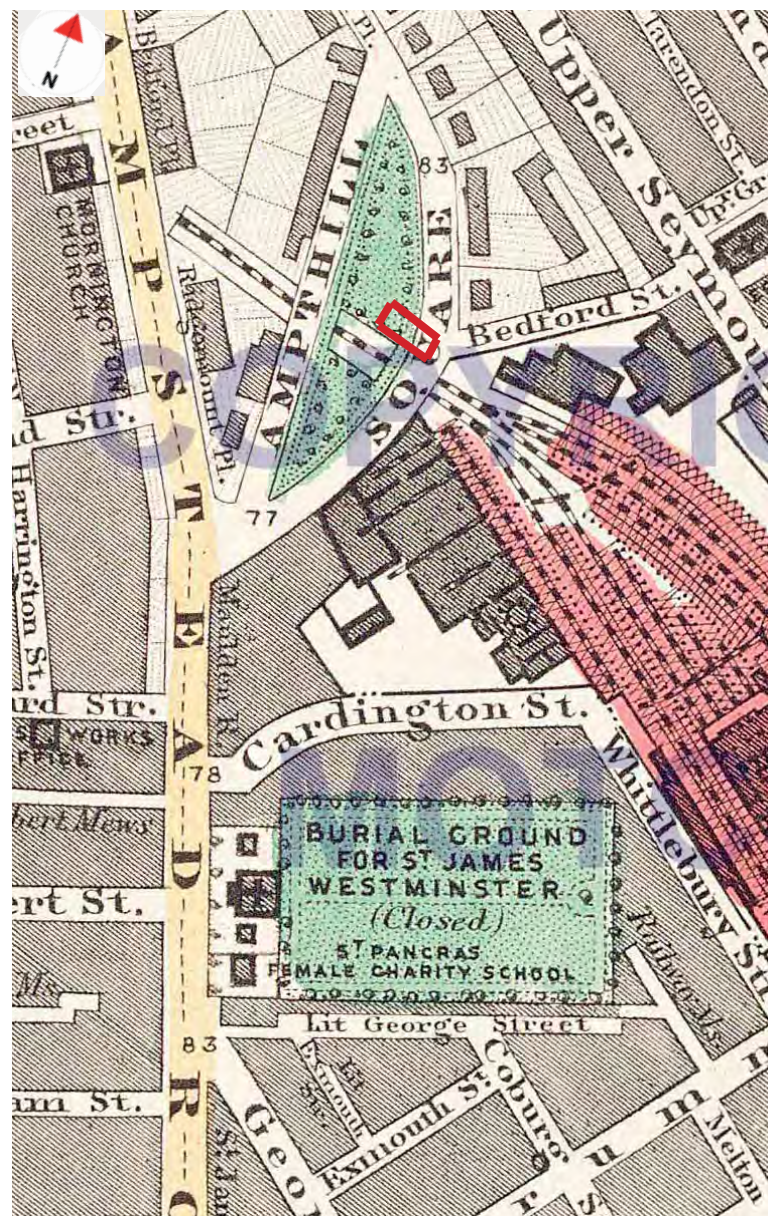


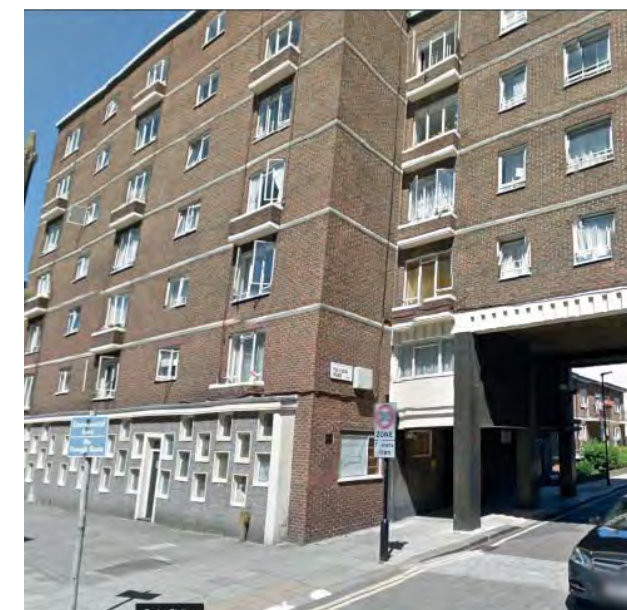
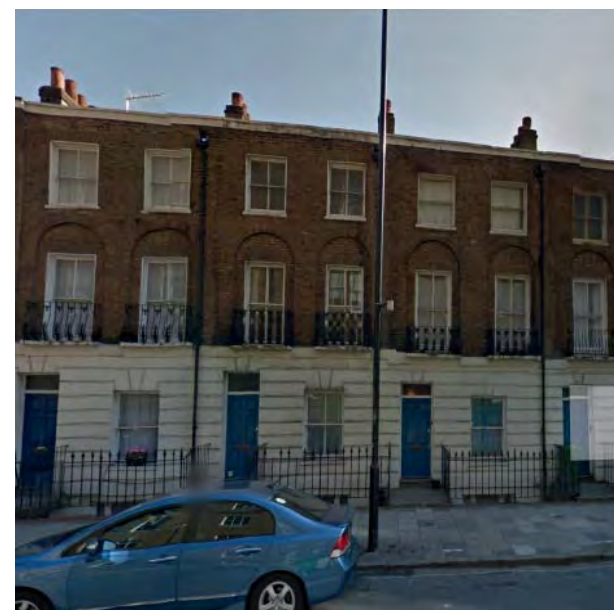
Fig 2: The site in 1862, then called Bedford Street. Approximate location of site shown in red



Fig 3: 1964 Drawing detailing closure of Amphyll square bridge. Approximate site location shown in red



Fig 4: Reference Buildings on Eversholt Street.



2.3 IMMEDIATE SURROUNDINGS

Closest to the site are the mid-rise blocks, all of around six storeys high, built with a concrete frame and a brick facing. The brick colour is similar to the older London stock type of brick used in the earlier buildings seen on Eversholt Street. Also adjacent to the site are the Royal Mail Buildings, which are characterised by a grey-blue brick facing with corrugated iron façade cladding at higher level. The approach to the site down Barnby street is lined with trees. Further into the Amphill Estate there are large green areas with many mature trees with large canopies.

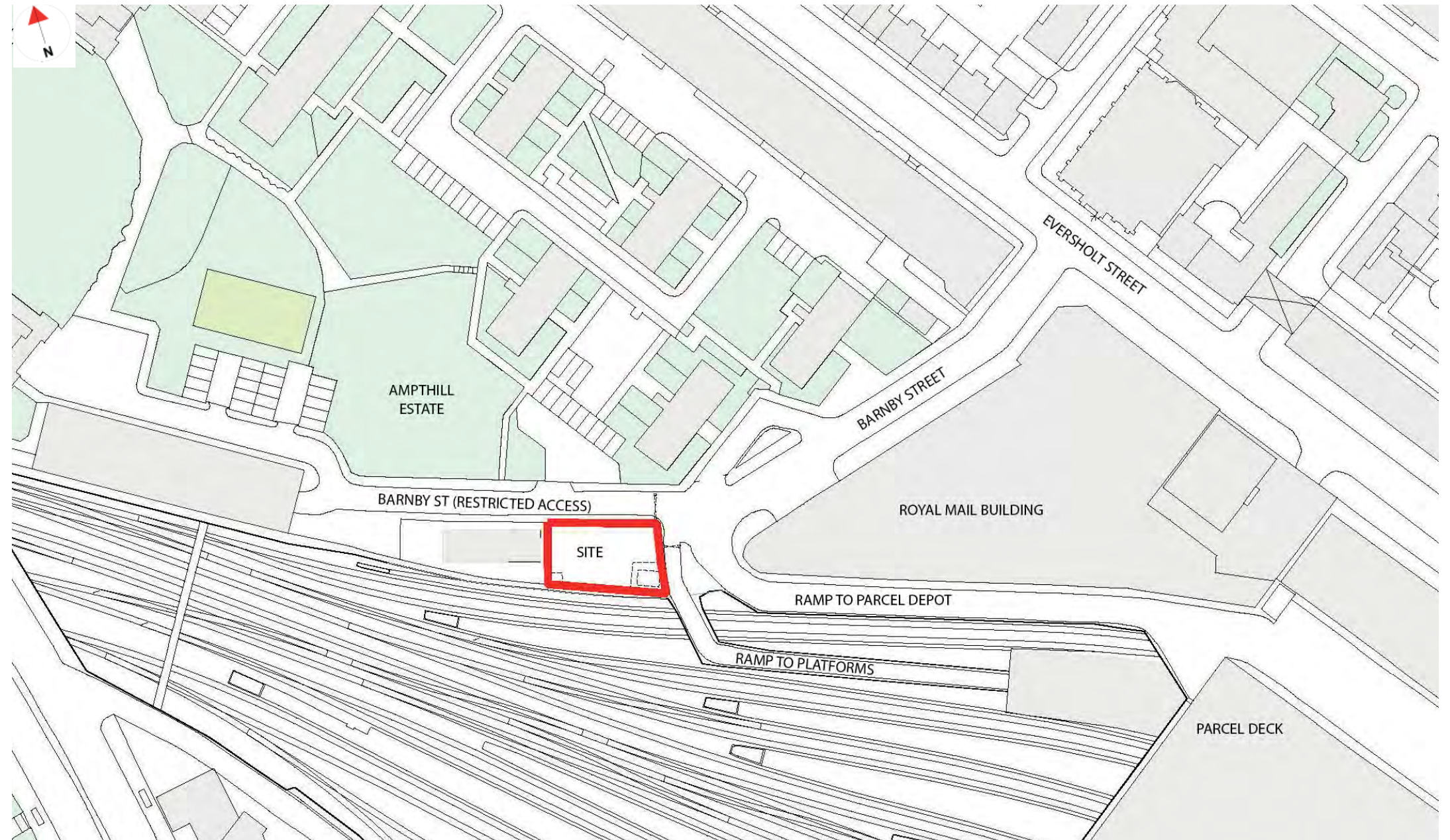


Fig 5: Site Plan.



Fig 6: Mid rise residential blocks adjacent to the site



Fig 7: Royal Mail Buildings on Barnby Street



Fig 8: Street view of the site and entrance to the Amphill Estate. Source – Google Maps

2.4 THE SITE

The site proposed was previously used as a playground suitable for preschool children. It has been abandoned and left derelict for many years. New playground facilities are located within 100m of the location for the substation.

Network Rail have been unsuccessful in making contact with representatives of the community centre which sits next to the abandoned playground.

It's general condition is poor being overgrown with vegetation and trees. There is also evidence of drug use. A painted wire metal fence encloses the site. There is a timber entrance pergola and a number of free-standing timber structures within. There are entrances to the site from Barnby Street as well as directly from the community centre grounds. It is assumed that the access from the community centre would be closed up.

The site area totals 390 m². It is rectilinear in shape with dimensions of 27m long and 16m deep.

At the south east of the site is an existing Substation building. A separate chain link fence encloses this. The building and fence are in poor condition with evidence of Japanese knotweed.

The Ampthill estate currently has restricted access to both vehicular and pedestrian traffic. This is controlled by a post mounted key pad access. The gated arrangement sits at the corner of the site and all access to it is from within the restricted area.

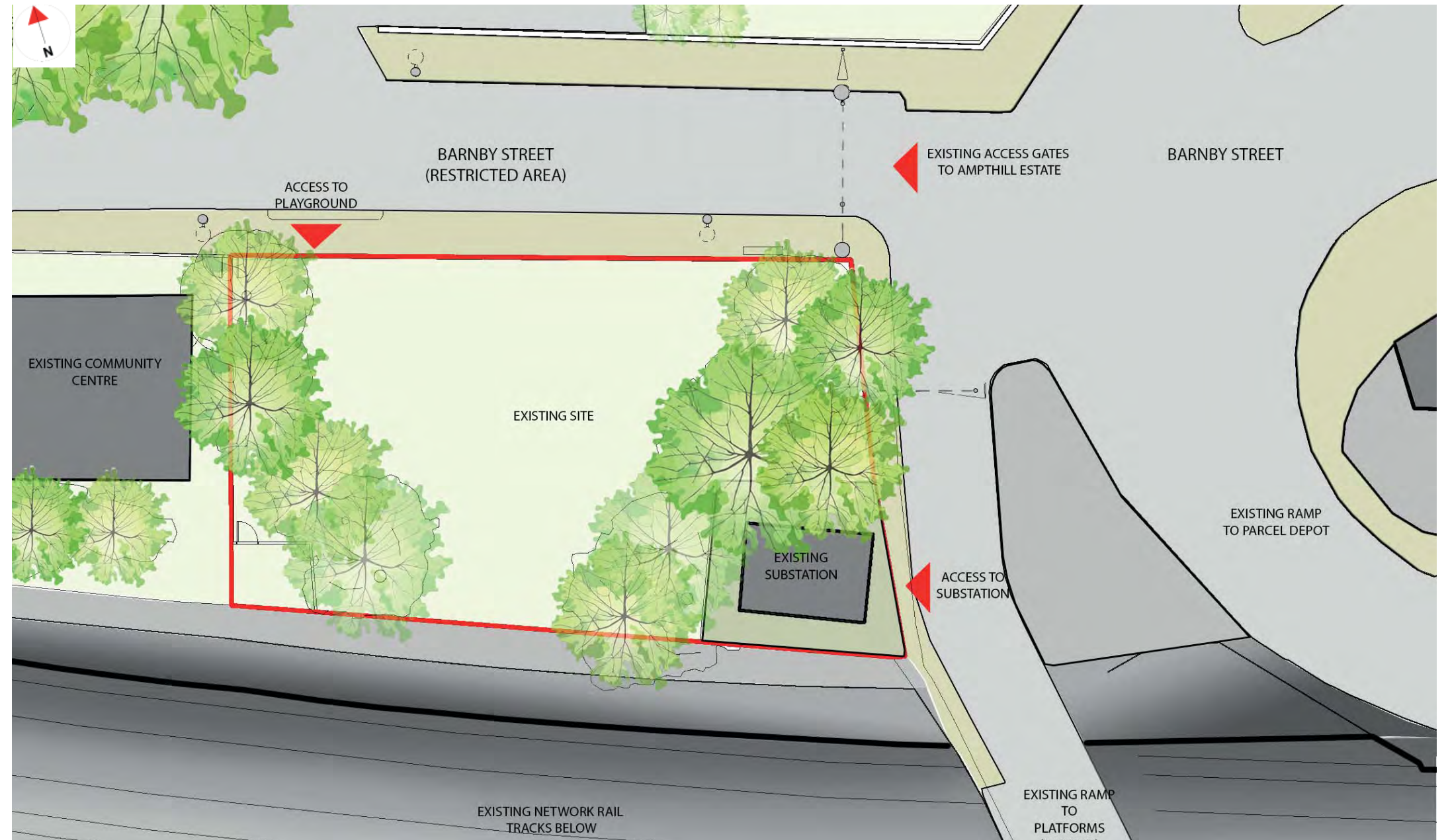


Fig 9: Existing site plan.



Fig 10: Street view of the ramps to Parcel Deck and platforms from Barnby Street.



Fig 11: Street view of Substation building.



Fig 12: Street view of site.

3.0 PROPOSED SITE ARRANGEMENT.

3.1 OVERALL ARRANGEMENT

The building form is L shaped sitting to the south and West of the site. It has a built area of 188 m². It is 23m in length and a maximum of 15m wide.

3.2 FUNCTIONAL ARRANGEMENT

The proposed substation is required to replace ageing Network Rail infrastructure currently serving Euston Station. The existing substation is located at track level and is currently supplied from Network Rail's traction power system. Network Rail's policy for substation renewal requires station supplies to be derived from a District Network Operator's (DNO) supply, in this case United Kingdom Power Networks (UKPN).

The proposed location has been primarily driven to suit access and maintenance requirements for both UKPN and Network Rail as direct 24 hours access is required from street level. To achieve this the rooms are located on the most accessible corner of the proposed site. The security gates into the Amphill estate would be moved further north, to allow full access to site for both maintenance vehicles as well as personal. The gate will be of the lockable sliding type so as not to hinder access to and from the Amphill estate.

The size and shape of the building has been driven primarily to suit equipment requirements, as well as the area of the plot. The L shaped building provides clear demarcation between the UKPN and Network Rail assets, as well as lessening the impact on the streetscape.

Double doors to the rooms at the front of the site have been provided for both access and maintenance into the rooms. Due to the nature of the rooms and equipment within, escape doors have been provided at the rear, combined with a designated escape route.

At the front of the site is a Principle Supply Point (PSP) this is a large container-like structure, that would be craned into place from a flatbed lorry, which would be for initial installation and replacement purposes only. In this instance, access would be required to the restricted area of the Amphill estate. The flat bed lorry, would need to off load adjacent to the location of the PSP. To facilitate the installation a section of the substation fence would be demountable.

The foundations of the retaining wall has impacted on certain design elements. Extra height required within the rooms to route cabling and containment as it is not possible to provide a adequately sized cable trench to accommodate the cabling. In addition due the age and condition of the retaining wall all cable will be passing over the retaining wall rather than passing through it.

The transformer will generate an ambient noise level of less than 40dba at the boundary of the site. The generator will only be positioned and operational on site during exceptional circumstance, as the PSP is provided with resilient dual power which is supplied from separate sources. External lighting will be provided on the site for security reasons, the level will achieve an average of 15 LUX.

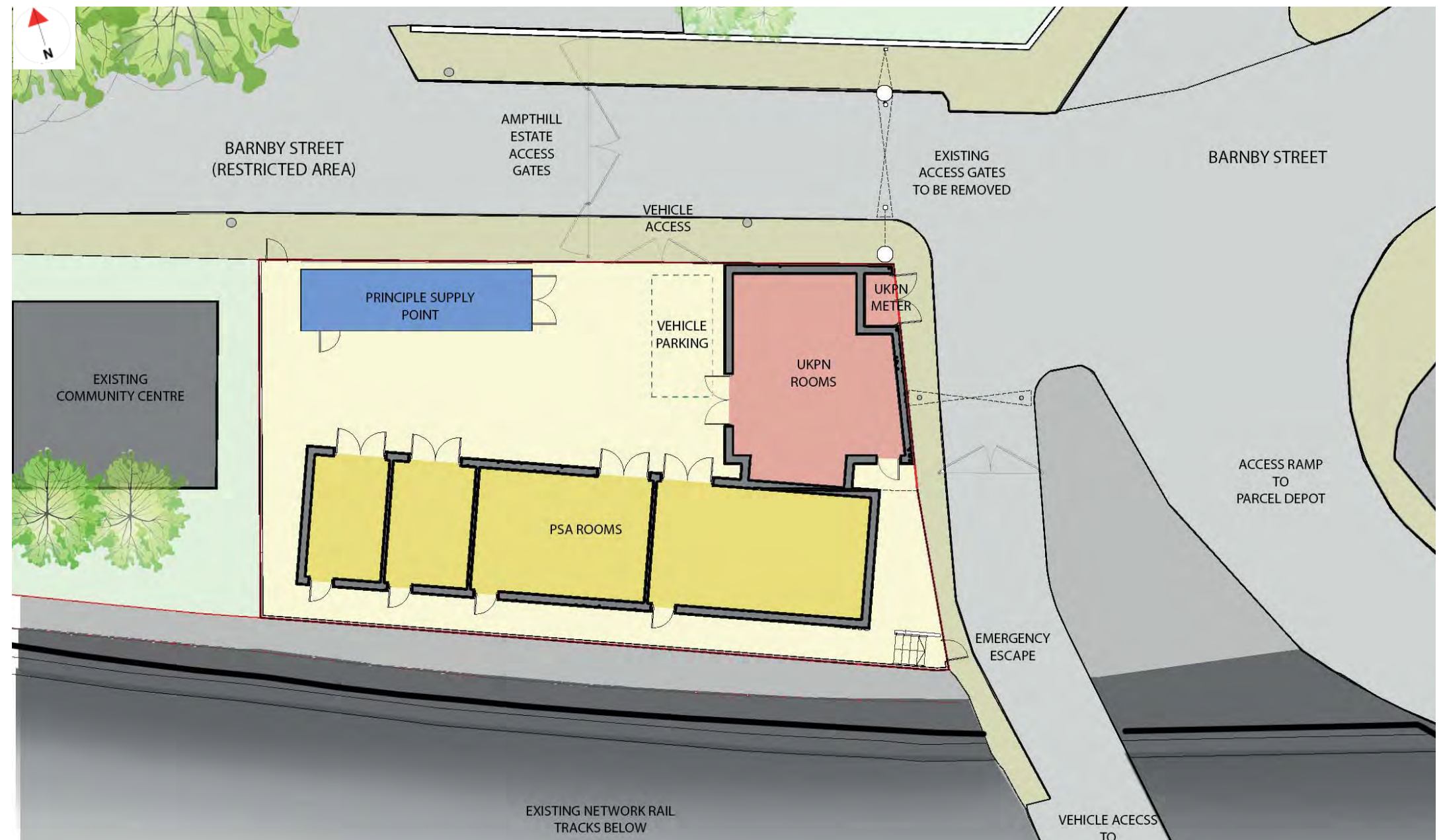


Fig 13: Proposed general arrangement plan of Substation



Fig 14: Proposed general arrangement Elevation of Substation from Barnby Street

3.3 ARCHITECTURE

The L shaped building form helps to lessen the impact on the street-scape with the main body of rooms being to the rear of the site. Further to this the building mass is broken into two parts to add interest and reduce the monolithic nature associated with this kind of building typology.

Brick is the chosen material reflecting the characteristics of the surrounding buildings. To the rear is a brownish brick type similar to the surrounding residential, while the front building is a darker tone to relate more to the station beyond. The connector between the two elements is to be clad with a metal standing seam finish.

A slatted metal fence encloses the site on two of its sides. This is 2.5m high to discourage any unauthorised access. All Metalwork will be of grey Polyester Powder coated Galvanised steel construction. All Doors match the colour of this.

Roof Access is from within the Substation site. A roof ladder rises to provide access to both roof areas. The taller of the two has a parapet around its edge while the building to the rear will be supplied with a mansafe system.

External areas will be finished in block paving. Please also refer to drawing E100-ARP-DRG-AR-000012 for further details of materials to be used.



Fig 15: Visualisation of proposed Substation from Amphill Estate



Fig 16: General arrangement Elevation of proposed Substation from Barnby Street



Fig 17: Visualisation of proposed Substation from Barnby Street

4.0 ACCESS STATEMENT

4.1 VEHICULAR AND PEDESTRIAN ACCESS AROUND BARNBY STREET

Eversholt Street currently serves as a primary north south vehicular route to the east of Euston station. The stations location blocks movement to the West meaning increased traffic on Eversholt street.

Barnby Street is a secondary two way road. Public Access is limited only to the Eastern part. Some Vehicles do access the Parcel Depot. This route is also used for vehicles serving Euston Station. There is access control and a gated arrangement to the beginning of the ramp to restrict access.

The northern part of Barnby street falls within the Amphill Estate and is restricted access. This is controlled via a key pad system.

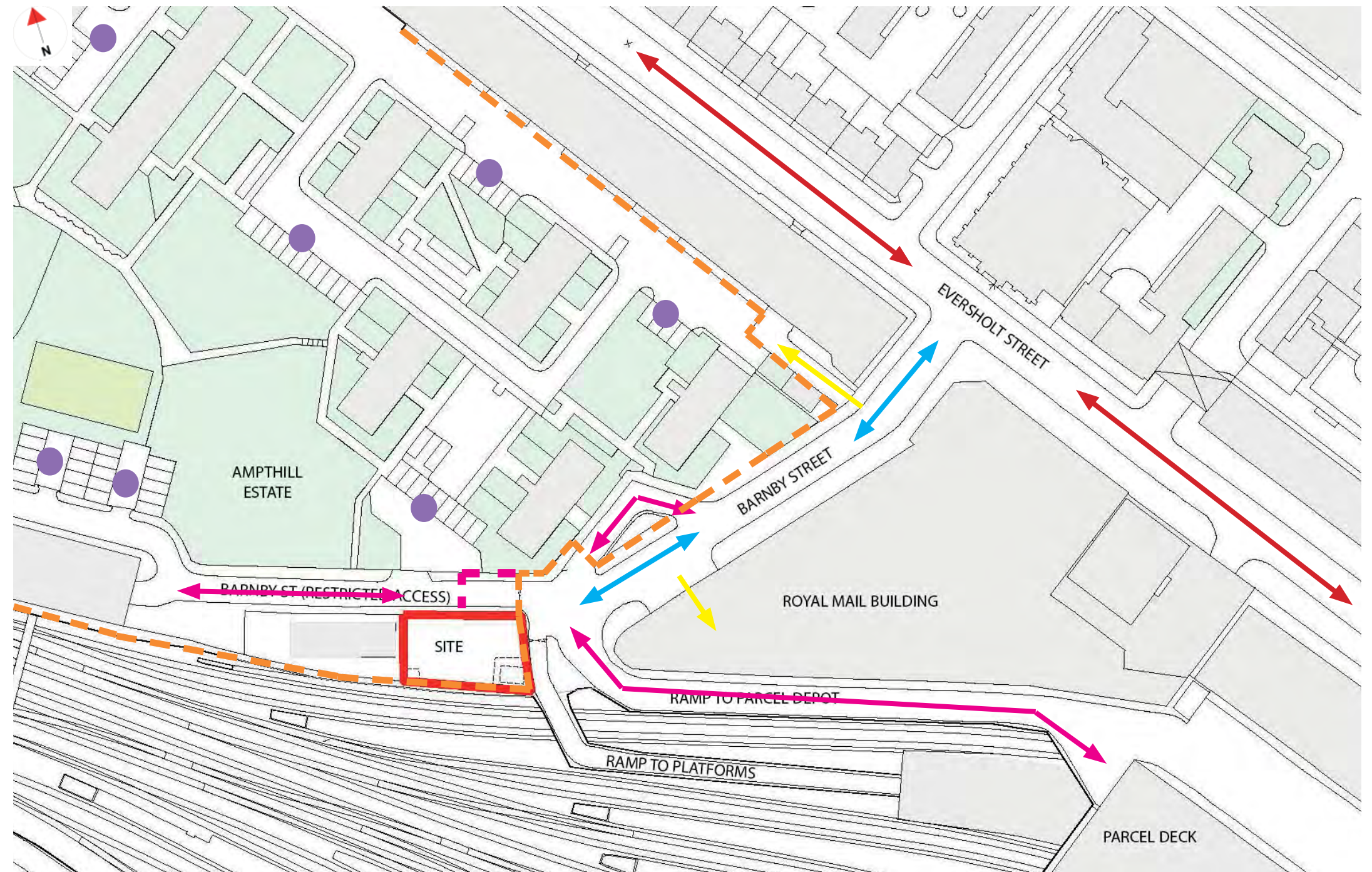
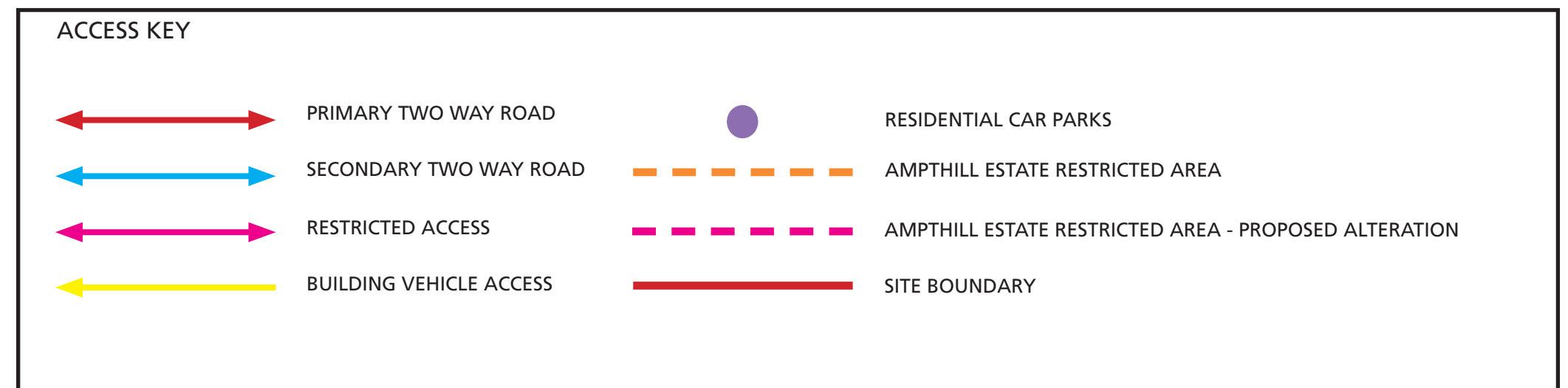


Fig 18: Existing vehicular access to Barnby Street



4.2 EXISTING SITE ACCESS

The site currently has no public access. There are a number of access points available to authorised persons.

- The existing UKPN substation is accessed through a locked chain link fence gate. Beyond this the enclosure itself is also secured with a padlock
- The main body of the site can be accessed through a full height gate secured with a padlock.
- Access from the community centre is to the north west of the site.

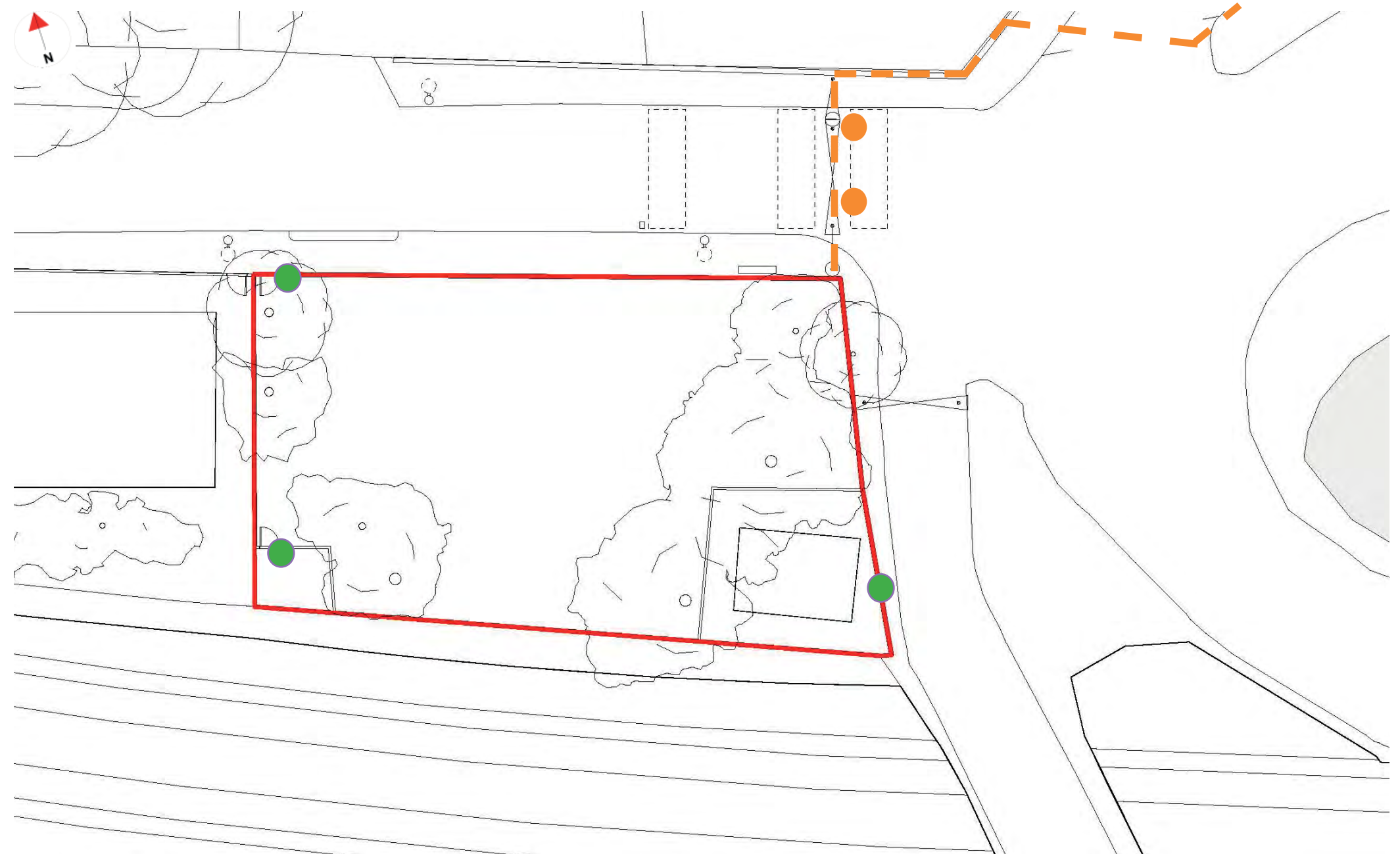
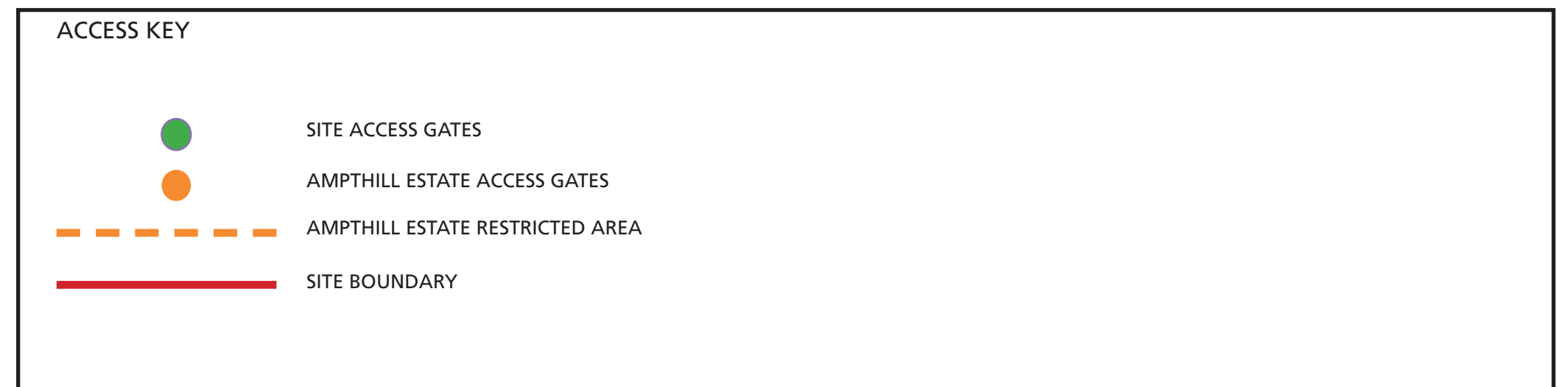


Fig 19: Existing access to Barnby Street and the site



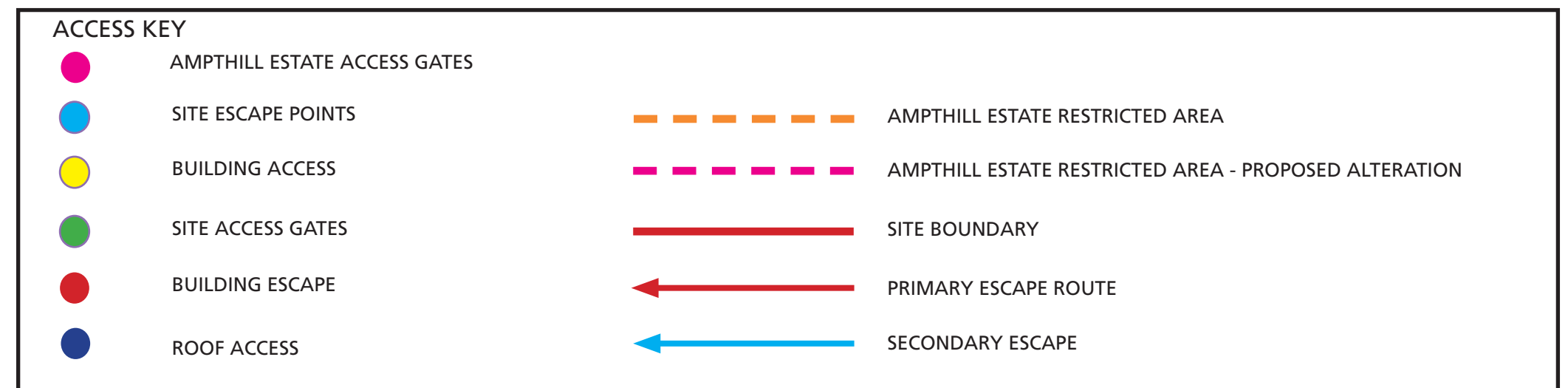
4.3 PROPOSED SITE ACCESS

The proposed site has a number of new access points

- The existing Restricted gates for vehicular and pedestrian access will be moved back to allow 24hr unrestricted access to within the site for authorised persons
- A full height gate arrangement allows vehicles and persons to enter the site
- Access to the individual rooms is from the courtyard of the site.
- Escape from rooms is provided to the rear of the rooms
- There are two escape routes out from the site.

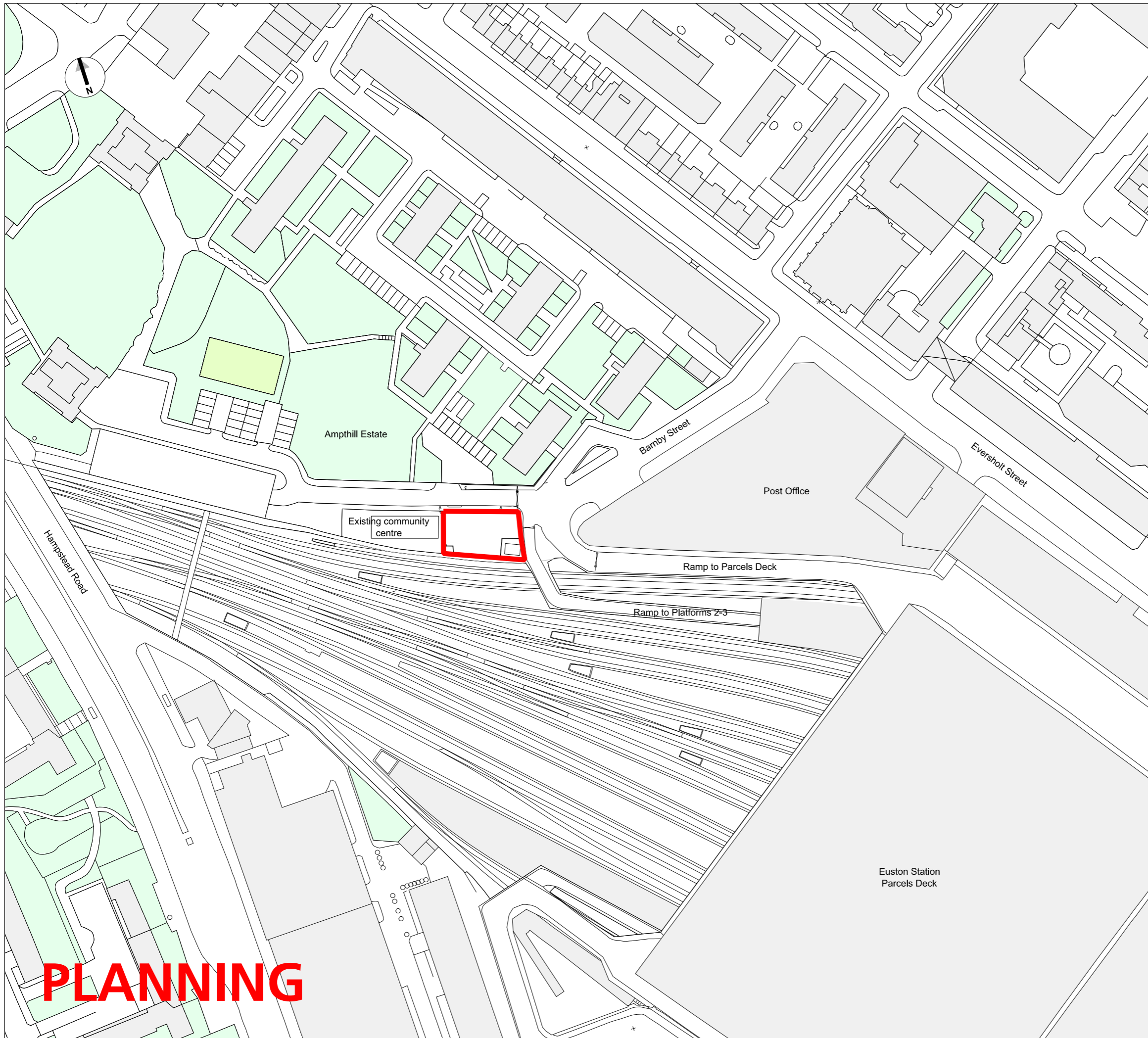


Fig 20: Proposed access to Barnby Street and the site



APPENDICES

- A DRAWINGS
- B MATERIALS SAMPLE BOARD
- C LIGHTING ASSESSMENT REPORT
Reference No E100-ARP-REP-EG-000006
- D NOISE AND VIBRATION ASSESSMENT
Reference No E100-ARP-ASS-EG-000001



PLANNING

Legend/Notes
General Notes:
 1 - All drawings have been compiled using the latest available survey information and are correct to the best of the designers knowledge.
 2 - All designs are based on site boundaries as agreed with Network Rail.
 3 - All doors are louvred in accordance with plant ventilation requirements.

References:
 Euston Substation - Lighting Assessment Report Reference No E100-ARP-REP-EG-000006 for details of the external lighting within the compound.
 Euston Substation - Noise and Vibration Assessment Reference No E100-ARP-ASS-EG-000001 for details of associated contributing plant and equipment within the compound.
 Euston Substation - Design and Access Statement Reference No E100-ARP-REP-AR-000003 rev 01.
 Materials samples board Reference No E100-ARP-DRG-000012.

This drawing is the property of Network Rail. It shall not be reproduced in whole or in part, nor disclosed to a third party, without the written permission of the Programme Director, On Network Works, 1 Eversholt Street, London, NW1 2DN.

Copyright 2015 Network Rail.

Rev	Date	Description of Revisions	Drawn	Chkd	Appr

On Network Works
 1 Eversholt Street
 London
 NW1 2DN
 Tel: 020 7904 7185

Contractor(s)

Ove Arup & Partners International Ltd.
 13 Fitzroy Street
 London
 W1T 4BQ
 www.arup.com

Project
 Network Rail Intake Substation

Drawing Title
 Site Location Plan
 E100-ARP-DRG-AR-000001
 1:1250 @ A3

Designed	SK	Signed	Date	13.11.15
Drawn	CH	Signed	Date	13.11.15
Checked	SC	Signed	Date	13.11.15
Approved	CR	Signed	Date	13.11.15

Scale(s) 1:1250 @ A3 ELR & Mileage

Alternative Reference Sheet 1 of 1

Drawing Number E100-ARP-DRG-AR-000001 Revision -