

The background of the slide is a blue-tinted aerial photograph of a railway infrastructure project. It shows multiple tracks, some with overhead power lines, and several large rectangular buildings or structures. There are also areas with trees and what appears to be a body of water or a large open space in the lower left. The overall scene is a complex of industrial and transportation infrastructure.

# Cambridge South Infrastructure Enhancements

## Design and Access Statement

April 2021

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# DOCUMENT VERIFICATION

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GLOSSARY

Term	Definition
Department for Transport	The UK Government department responsible for the UK transport network and infrastructure
Design and Access Statement	A document that outlines the principles and objectives that have been applied to the proposed works in terms of design and access
Environmental Impact Assessment	The process by which the anticipated effects on the environment of a proposed development or project are measured
Environmental Statement	The report setting out the process and findings of an Environmental Impact Assessment
Local Plan	A document prepared by the Local Authority that sets out the vision, policies and proposals for the future development and land use of the area.

# ACRONYMS AND ABBREVIATIONS

Acronym	Description
ANPR	Automatic Number Plate Recognition
BGK	Bethnal Green and King's Lynn
CAM	Cambridgeshire Autonomous Metro
CBC	Cambridge Biomedical Campus
CCC	Cambridge City Council
CSET	Cambridge South East Transport
DAS	Design and Access Statement
DfT	Department for Transport
ECML	East Coast Main Line
ES	Environmental Statement
Green Belt	Cambridge Green Belt
GRIP	Governance of Railway Investment Projects
HE	Historic England
MRT	Mass Rapid Transit
NCN	National Cycle Network
NPPF	National Planning Policy Framework
OBC	Outline Business Case
OHLE	Overhead Line Electrification
Proposed Development	The Cambridge South Infrastructure Enhancements Project
SM	Scheduled Monument
SOBC	Strategic Outline Business Case
TWA	Transport and Works Act
TWAO	Transport and Works Act Order
WAML	West Anglia Main Line



# EXECUTIVE SUMMARY

This Design and Access Statement (DAS) is one of the supporting documents submitted as part of the application for a Transport and Works Act Order for a new station south of Cambridge which is part of the Cambridge South Infrastructure Enhancements project (the ‘proposed Development’).

The aim of the proposed Development is to develop plans for a new station in the vicinity of the growing Cambridge Biomedical Campus and Addenbrooke’s and Royal Papworth hospital to sustainably improve connectivity in the Cambridgeshire region. The station will provide direct access to potential routes on the rail network for those in South Cambridgeshire, as well as better connections across the southern fringe of the city.

The proposed Development comprises the following key infrastructure measures:

- Four-tracking a section of the West Anglia Main Line
- A new station at Cambridge South
- Realignment of the existing track at Shepreth Branch Junction
- Track works south of Cambridge Station near Hills Road bridge

The proposals are the result of an iterative design process which has been informed by development of the understanding of the existing context of the route, public and stakeholder consultation and pre-application meetings with the Greater Cambridge Shared Planning (GCSP).

The vision for the Station is that it should form a contemporary, inclusive and functional quality packaged within a suitably scaled architectural envelop that is sustainable throughout its life. Its architecture in concept complements the civil engineering works required to provide the various volumes and spaces that comprise the station design. From the street-level accommodation through to the platform environment, the design responds to engineering and operational requirements. The design vision uses this sequence of spaces to create a rational, uplifting and dramatic environment for passengers using the station and for neighbours on both sides of the railway.

This Design and Access Statement (DAS) sets out the proposals of the permanent spaces, structures and access arrangements to Cambridge South Station with reference to the operational railway and describes how the proposals have been developed, setting out the framework and key principles for the detailed design of the station associated works and should be read alongside the Order Plans, the Planning Statement and the Environmental Statement.

In summary, this statement describes the design context, the design of the proposed Development in terms of layout, access and landscape and illustrates the design intent in terms of scale and appearance to demonstrate how the proposed Development could meet the technical requirements of the project objectives to provide a high quality new station and environment that would improve connectivity for all.

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# 1.0 INTRODUCTION

## 1.1 Purpose of this Document

- 1.1.1 This Design and Access Statement (DAS) for the Cambridge South Infrastructure Enhancements project (the 'proposed Development') describes the proposals for a new station south of Cambridge and its integration into the surrounding Green Belt and the Cambridge Biomedical Campus (CBC) located within the Southern Fringe area of Cambridge. It is one of a series of documents provided to support Network Rail's Request for Deemed Planning Permission which will be submitted simultaneously with an application for a Transport and Works Act Order (TWAO).
- 1.1.2 Enhancements to the existing operational railway and associated ancillary items, such as OHLE, signals and electrical cabinets, that form part of the proposed Development do not form part of this statement however may be referenced such as the widening of the railway corridor and provision of a railway systems compound and substation adjacent to a Scheduled Monument.
- 1.1.3 The proposed development is a proposed expansion of the railway infrastructure to create a new station (Cambridge South) on the West Anglia Main Line and the Cross-Country corridor, also served by services to and from London Kings Cross via the Shepreth Branch and the East Coast Main Line. Thameslink services connect Cambridge (and hence could potentially connect Cambridge South) via Central London to Maidstone East and Brighton.
- 1.1.4 This statement demonstrates why the proposals are a suitable response to the site and its setting, which consider existing and future planned developments, and that it can be adequately and safely accessed. It also sets out the objectives and design principles which have informed the design and should continue to underpin the detailed design. Indicative design intent visualisations and drawings of the station structures are provided to illustrate how the proposals may develop in the future.
- 1.1.5 The DAS is submitted for information to inform the consideration of the application with respect to design and access matters.

## 1.2 Consenting requirements

- 1.2.1 Network Rail will seek powers under the Transport and Works Act 1992 (TWA) to acquire land and rights over land compulsorily as well as powers to construct, operate and maintain the station, track and associated railway infrastructure.
- 1.2.2 These powers will include, but are not limited to:
- compulsory purchase of land and property which is required for the proposed Development;
  - the right to use land temporarily and any permanent rights for the on-going management and maintenance of the proposed Development;
  - provision for temporary alternative routes and permanent diversions;
  - powers for making byelaws and traffic regulation orders;
  - powers to stop up or alter roads and level crossings permanently and temporarily;
  - powers to divert any utilities; and
  - amendments to other legislation.
- 1.2.3 As well as applying to the Secretary of State for a TWAO, Network Rail will also apply to the Secretary of State for Transport for a direction for deemed planning permission for the proposed Development. A brief guide to TWAO procedures can be obtained via the link below:
- [www.gov.uk/government/publications/transport-and-works-act-orders-a-brief-guide-2006/transport-and-works-act-orders-a-brief-guide](http://www.gov.uk/government/publications/transport-and-works-act-orders-a-brief-guide-2006/transport-and-works-act-orders-a-brief-guide)
- 1.2.4 The Request for Deemed Planning Permission will be submitted simultaneously with the application for a TWAO, and sets out the relevant works.
- 1.2.5 Certain details, such as full details of scale and external appearance of the station and landscaping works are 'reserved' for subsequent approval by the local planning authority through planning conditions set out within the Request for Deemed Planning Permission.

## 1.3 Design & Access Statement (DAS) Requirements

- 1.3.1 This Design and Access Statement (DAS) has been provided to accompany a request for deemed planning permission. The DAS is intended to:
- a) explain the design principles and vision of the proposed development;
  - b) demonstrate how the proposed development takes its context into account;
  - c) summarise the policy adopted and show how relevant local development documents have been considered;
  - d) Describe consultation that has been undertaken on issues relating to access to the development and how the feedback has been incorporated into the design; and
  - e) explain how the proposed development will be accessed.

## 1.4 Structure of the DAS

- 1.4.1 This statement is structured in seven sections: Sections 1 and 2 establish the project background and context, Sections 3 to 6 set out the proposals and how they have been influenced by consultation and future context, and Section 7 provides a conclusion.
- 1.4.2 A glossary and list of abbreviations are included at the beginning of this statement.
- 1.4.3 The document contents are as follows:
- Section 1:** Introduction - describes the purpose of the DAS and states the background to the proposed Development
- Section 2:** Context - describes the context of the proposed Development in Social, Economic and Physical terms.
- Section 3:** Design Vision – sets out the overall vision in terms of high-level design principles and objectives.
- Section 4:** Consultation, Engagement and Design Development - sets out the design development process and consultation to date.
- Section 5:** Design - sets out the overall design in terms of layout, amount and use.
- Section 6:** Design Intent – describes the intent of the station design in terms of its scale and appearance.
- Section 7:** Conclusion.

## 1.5 Background to the Project

- 1.5.1 The CBC will house the largest concentration of biomedical expertise in Europe. Over the next four years many new jobs are expected to be created and the Cambridge Southern Fringe will be further developed. This is expected to place significant pressures on an already close-to-capacity transport system. There are local and national stakeholder aspirations for a new station to the south of Cambridge in the vicinity of Addenbrooke’s Hospital.
- 1.5.2 The new station would be located on the West Anglia Main Line and the Cross-Country corridor, as well as being served by services to and from London Kings Cross via the Shepreth Branch and East Coast Main Line. Thameslink services connect Cambridge (and hence could potentially connect Cambridge South) via Central London to Maidstone East and Brighton.

### Interfacing Projects

- 1.5.3 In addition to concurrent railway projects, there are a number of neighbouring projects:
- Additional development to the AstraZeneca site within CBC;
  - Cambridge South East Transport Project - a proposed new public transport route linking the CBC via Great Shelford, Stapleford and Sawston to a new travel hub near the A11/A1307/A505 with connections to Babraham, the Babraham Research Campus and Granta Park; and
  - Sawston Greenway - a proposed route to enable cyclists, walkers and equestrians to travel sustainably from Sawston into Cambridge.
  - These projects are geographically interfacing and also likely to be happening across similar timescales.

### Scheme Objectives

- 1.5.4 The Department for Transport (DfT) has developed the following objectives that the proposed Development is to achieve:
- Increase connectivity between the Biomedical Campus and international gateways;
  - Improve sustainable transport access within the Cambridge Southern Fringe;
  - Minimise highway congestion associated with the Southern Fringe;
  - Reduce reliance on central Cambridge transport infrastructure; and
  - Be capable of integrating with and enhancing the opportunities

presented by Thameslink and East West Rail, to support development of the Biomedical Campus as part of the Golden Triangle life sciences cluster.

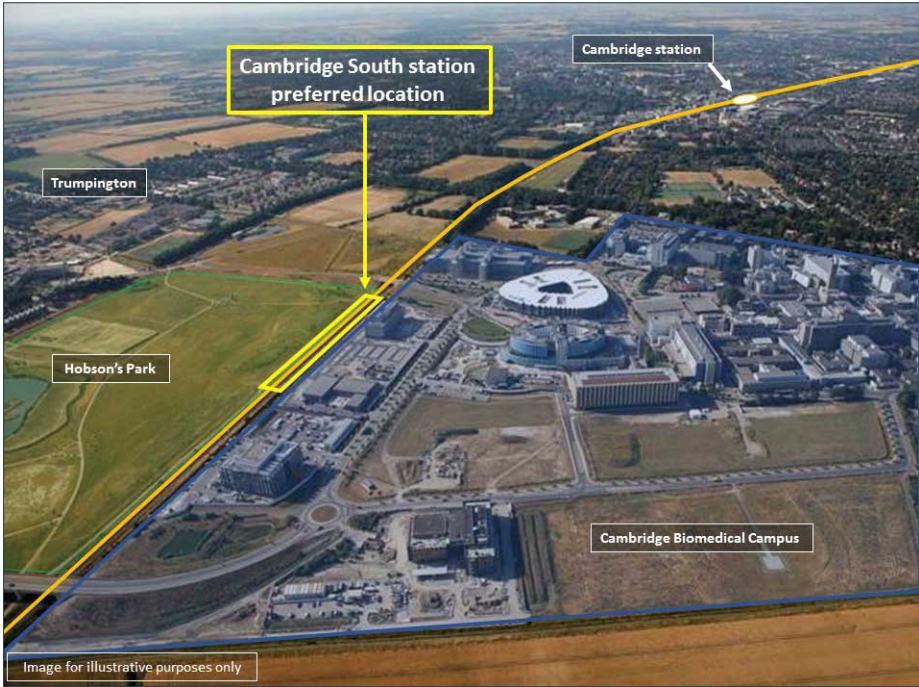


Figure 2-1: Cambridge South Station preferred location



## 2.0 CONTEXT

### 2.1 Site Location and Description

- 2.1.1 The site is located approximately 1.5km south of the centre of Cambridge (Figure 2-1) and runs approximately parallel to Hobson’s Brook (also known as Hobson’s Conduit). Part of the site is an operational railway that carries the Bethnal Green and King’s Lynn (BGK) main line between Shepreth Branch Junction and Cambridge Station to the north. The route alignment runs predominantly at grade, whilst the proposed station site is slightly lower than the existing railway and the AstraZeneca site currently under construction.
- 2.1.2 Land use is mostly residential north and west of the site. The Cambridge Green Belt is predominantly to the south of the site; however, a ‘green corridor’ of the Green Belt extends into the City and abuts the west boundary of the site in the form of Hobson’s Park. The CBC lies to the east of the proposed station area. A Scheduled Monument is situated south west of the site between Addenbrooke’s Road and the Hobson’s Brook Footbridge which is adjacent to Shepreth Branch Junction.
- 2.1.3 The site includes several existing structures including Hobsons Brook, a stream and conduit originating from Nine Wells Nature Reserve supplying Cambridge, Nine Wells Bridge (which carries Addenbrooke’s Road), Addenbrooke’s Bridge (which carries the Cambridge Guided Busway(CGB)) and Long Road Bridge (A1134).
- 2.1.4 Cambridge Station is located beyond the site extents between Hills Road and Mills Road bridges to the north.

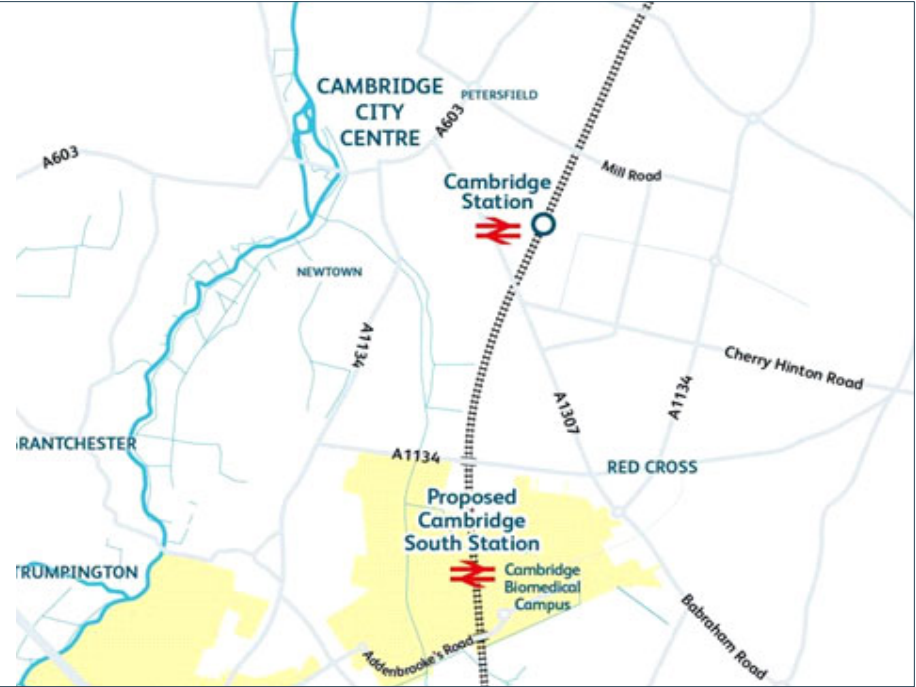


Figure 2-2: Location Plan

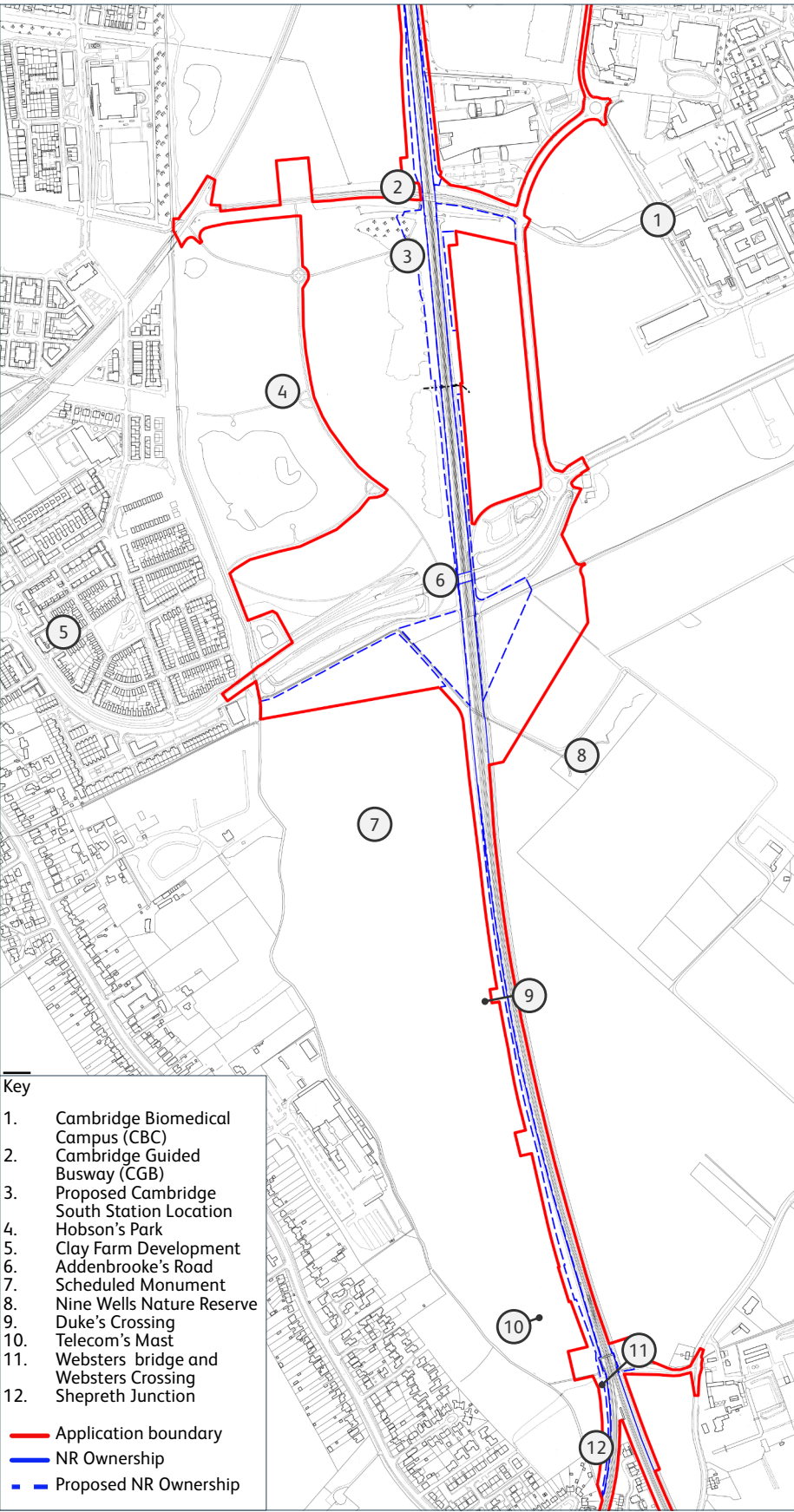


Figure 2-3: Existing site plan

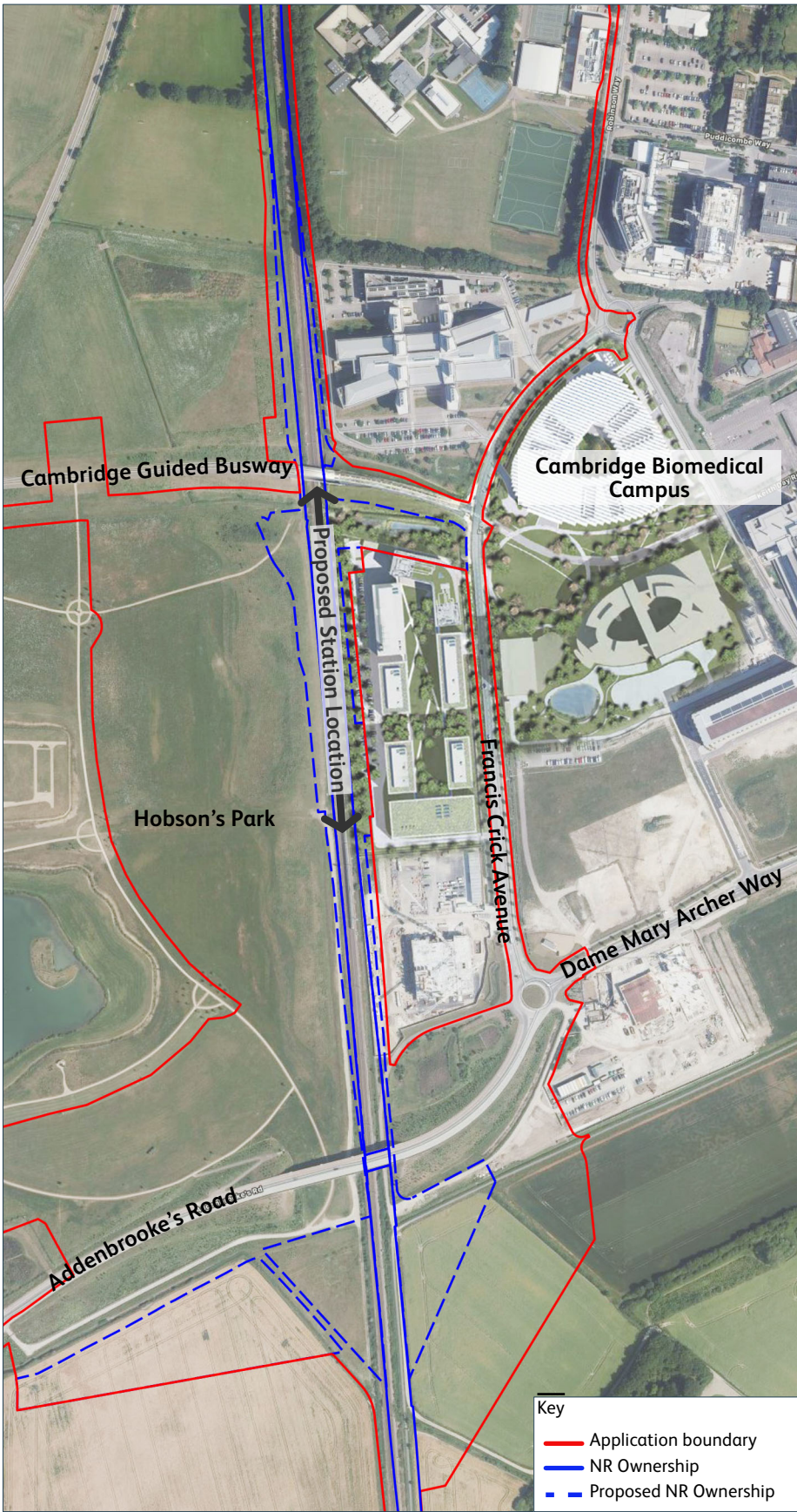


Figure 2-4: Aerial showing existing site plan of station with future CBC shown.



## 2.2 Planning Policy Context

2.2.1 Relevant sections which have been considered in developing the illustrative design, layout and access arrangements as well as the supporting the Design Vision in Section 3 and Design Principles contained within Appendix A are set out below:

### National Planning Policy Framework (02/19)

2.2.2 The National Planning Policy Framework sets out the Government's planning policies and how these should be applied, providing a framework for sustainable development.

2.2.3 Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):

- **an economic objective** (to help build a strong, responsive and competitive economy)
- **a social objective** (to support strong, vibrant and healthy communities)
- **an environmental objective** (to contribute to protecting and enhancing our natural, built and historic environment)

2.2.4 Key Policies relevant to the proposed Development are as follows:

### Sustainable transport

2.2.5 Chapter 9, paragraph 109 sets out the following 5 directions on the interface between applications for development and the existing highway infrastructure:

- give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

### Achieving well-designed places

2.2.6 Chapter 12 of the NPPF describes how the creation of high quality buildings and places is fundamental to what the planning and development process should achieve. It also states why consultation and engagement is fundamental to achieving positive outcomes.

2.2.7 Paragraph 124 states: *“Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities. . . . . So too is effective engagement between applicants, communities, local planning authorities and other interests throughout the process.”*

2.2.8 The chapter includes the following six key points that should be incorporated in developments:

- will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;
- are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
- are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change;
- establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;
- optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and
- create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.

### Green Belt

2.2.9 The fundamental aim of Green Belt policy as set out in paragraph 133 of the National Planning Policy Framework (NPPF) (ref. 01) is to *‘prevent urban sprawl by keeping land permanently open’*. The policy further notes that *‘essential characteristics of Green Belts are their openness and their permanence’*.

2.2.10 The five purposes of the Green Belt set out in NPPF paragraph 134 are as follows:

- to check the unrestricted sprawl of large built-up areas;

- to prevent neighbouring towns merging into one another;
- to assist in safeguarding the countryside from encroachment;
- to preserve the setting and special character of historic towns; and
- to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

2.2.11 Paragraph 146 of the NPPF describes how certain forms of development are *‘not inappropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it.’* An example of such development includes *‘local transport infrastructure which can demonstrate a requirement for a Green Belt location’*.

### Planning Practice Guidance (2019)

2.2.12 Planning Practice Guidance (ref. 02) considers the potential impact of development on the openness of the GB and states that the courts have identified a number of matters which may need to be taken into account in making an assessment of impact. These include but are not limited to:

- *‘openness is capable of having both spatial and visual aspects – in other words, the visual impact of the proposal may be relevant, as could its volume;*
- *the duration of the development, and its remediability – taking into account any provisions to return land to its original state or to an equivalent (or improved) state of openness; and the degree of activity likely to be generated, such as traffic generation.’* (Paragraph: 001 Reference ID: 64-001-20190722)

### Local Planning Policy

#### Cambridge Local Plan, 2018 (CLP)

2.2.13 The local plan sets out the way the development needs of Cambridge to 2031 will be met and delivers a vision for growth that will secure the priorities for Cambridge. The policies set out how important it is that the needs must be accommodated and met, but also how to protect the city's heritage and environmental assets.

2.2.14 The following extracts from the CLP set out its policies relating to sustainable strategic development and in particular in relation to transport and context, providing the sustainable framework for a new station located within and adjacent to the Green Belt to the south of the city.

## Sustainability

2.2.15 Policy 1 (The presumption in favour of sustainable development) states that when considering development proposals, the Council will take a positive approach that reflects the presumption in favour of sustainable development contained within the National Planning Policy Framework) and will always work proactively with applicants to jointly find solutions, so that proposals can be approved wherever possible, and to secure development that improves the economic success and quality of life and place in Cambridge.

2.2.16 Policy 28 (Carbon reduction, community energy networks, sustainable design and construction, and water use) states that in order to ensure that the growth of Cambridge supports the achievement of national carbon reduction targets, and does not exacerbate Cambridge's severe water stress, the development will be required to meet the minimum requirements associated with BREEAM 'excellent'.

## Green Belt

2.2.17 Policy 4 of the CLP (ref. 03) which relates to the Green Belt states that: *'The Green Belt preserves the unique setting and special character of the city and includes green corridors that penetrate deep into the urban and historic heart of Cambridge. It is a key component in providing for active and passive sport and recreation, for amenity and biodiversity. A significant proportion of the Cambridge Green Belt within the city's boundaries is in agricultural use. The Green Belt is one of the key elements that contribute to the symbiotic relationship between high quality of life, place and economic success of Cambridge.'*

2.2.18 Alongside the national Green Belt purposes (outlined in the NPPF), Policy 4 sets out the following Cambridge-specific Green Belt purposes:

- Preserve the unique character of Cambridge as a compact, dynamic city with a thriving historic centre.
- Maintain and enhance the quality of its setting.
- Prevent communities in the environs of Cambridge from merging into one another and with the city.

2.2.19 Paragraph 2.21 states that the transport strategy has been prepared in parallel with the two new local plans (Cambridge Local Plan 2018 and South Cambridgeshire Local Plan 2018) and that sustainable transport capacity needs are "to be provided in the sub-region between the key economic hubs in and around the city and where people live and access services. The strategy plans to further improve the sustainable transport network around the economic

hubs and the hi-tech clusters in and around the city, by making movement between them straightforward and convenient."

2.2.20 Paragraph 2.25 indicates that the sustainable development strategy is *"a considerable challenge for the Cambridge area . . . .The need for jobs and homes has to be considered within the context of a tightly-drawn Green Belt, which aims to protect the unique character of Cambridge as a compact, dynamic city with a thriving historic centre, maintain and enhance the quality of the city's setting, and prevent the city merging with the ring of necklace villages. The Green Belt and its purposes help underpin the quality of life and place in Cambridge, which are fundamental to economic success. Achieving an appropriate balance between these competing arms of sustainable development is a key objective of the development strategy for the new local plans"*.

2.2.21 Policy 8 (Setting of the City) states that development on the urban edge, including sites within and abutting green infrastructure corridors and the Cambridge Green Belt, open spaces and the River Cam corridor, will only be supported where it:

- responds to, conserves and enhances the setting, and special character of the city, in accordance with the Cambridge Landscape Character Assessment 2003, Green Belt assessments, Cambridgeshire Green Infrastructure Strategy and their successor documents;
- promotes access to the surrounding countryside / openspace, where appropriate; and
- safeguards the best and most versatile agricultural land unless sustainable development considerations and the need for development are sufficient to override the need to protect the agricultural value of land; and
- includes landscape improvement proposals that strengthen or re- create the well-defined and vegetated urban edge, improve visual amenity and enhance biodiversity.

## Context

2.2.22 Proposals where the primary objective is to conserve or enhance biodiversity, particularly proposals for landscape-scale enhancement across local authority boundaries, will also be supported. The Council will support proposals which deliver the strategic green infrastructure network and priorities set out in the Cambridgeshire Green Infrastructure Strategy.

2.2.23 The Southern Fringe area, within which the proposed Development is proposed, comprising Clay Farm, Trumpington Meadows, Bell School and Glebe Farm, is proposed to deliver high quality new neighbourhoods for Cambridge. Policy 18

(Southern Fringe Areas of Major Change), states that proposals should:

- retain and enhance the strategic green corridor that extends from the Chalk Hills to Long Road along the Vicar's Brook/Hobson's Brook corridor and retain the nature and character of the two watercourses;
- create a distinctive gateway to the city and a high quality urban edge as approached by road from the south and respect key views;
- be fully permeated by pedestrian and cycle routes (incorporating access for all), both within and between the development areas, improving links to the Cambridge Biomedical Campus (including Addenbrooke's Hospital);

2.2.24 Policy 34 (Light pollution control) states that development proposals that include new external lighting or changes to existing external lighting will be permitted where it can be demonstrated that:

- it is the minimum required to undertake the task, taking into account public safety and crime prevention;
- upwards or intrusive light spillage is minimised;
- it minimises impact to local residential amenity; and
- it minimises impact to wildlife and landscape character, particularly at sites on the edge of Cambridge.

2.2.25 Developers of major sites will be required to submit an assessment of the impact on any sensitive residential premises both on- and off-site.

2.2.26 Development will be supported where it is demonstrated that it responds positively to its context (Policy 55) and has drawn inspiration from the key characteristics of its surroundings to help create distinctive and high quality places. Development will:

- identify and respond positively to existing features of natural, historic or local importance on and close to the proposed development site; be well connected to, and integrated with, the immediate locality and wider city; and
- use appropriate local characteristics to help inform the use, siting, massing, scale, form, materials and landscape design of new development.

2.2.27 The Supporting Notes state: *An understanding of and appropriate response to context will ensure that the special character of Cambridge is protected and enhanced. . . . Proposals for new development should create a scale and form that is appropriate to existing buildings, the public realm and open spaces, which complement the local identity of an area.*

2.2.28 Policy 56 (Creating successful places) states that development designed to be attractive, high quality, accessible, inclusive and safe should:

- provide a comprehensive design approach that achieves the successful integration of buildings, the routes and spaces between buildings, topography and landscape;
- create streets that respond to their levels of use while not allowing vehicular traffic to dominate;
- create attractive and appropriately-scaled built frontages to positively enhance the townscape where development adjoins streets and/or public spaces;
- ensure that buildings are orientated to provide natural surveillance;
- create active edges on to public space by locating appropriate uses, as well as entrances and windows of habitable rooms next to the street;
- create clearly defined public and private amenity spaces that are designed to be inclusive, usable, safe and enjoyable;
- be designed to remove the threat or perceived threat of crime and improve community safety;
- use materials, finishes and street furniture suitable to the location and context;
- create and improve public realm, open space and landscaped areas that respond to their context and development as a whole and are designed as an integral part of the scheme;
- embed public art as an integral part of the proposals as identified through the Council's Public Art Supplementary Planning Document; and
- ensure that proposals meet the principles of inclusive design, and in particular meet the needs of disabled people, the elderly and those with young children.

2.2.29 High quality new buildings (Policy 57) will be supported where it can be demonstrated that they:

- have a positive impact on their setting in terms of location on the site, height, scale and form, materials and detailing, ground floor activity, wider townscape and landscape impacts and available views;
- are convenient, safe and accessible for all users;
- are constructed in a sustainable manner and are easily adaptable;
- successfully integrate functional needs such as refuse and

recycling, bicycles and car parking;

- design measures to reduce the environmental impact of the buildings, such as renewable energy systems and other rooftop plant and services, in an architecturally integrated way;
- successfully integrate features such as meter boxes in an unobtrusive manner; and
- include an appropriate scale of features and facilities to maintain and increase levels of biodiversity in the built environment.

2.2.30 Policy 59 (Designing landscape and the public realm) states that external spaces, landscape, public realm, and boundary treatments must be designed as an integral part of new development proposals and coordinated with adjacent sites and phases. High quality development will be supported where it is demonstrated that:

- the design relates to the character and intended function of the spaces and surrounding buildings;
- existing features including trees, natural habitats, boundary treatments and historic street furniture and/or surfaces that positively contribute to the quality and character of an area are retained and protected;
- microclimate is factored into design proposals and that public spaces receive adequate sunlight;
- materials are of a high quality and respond to the context to help create local distinctiveness;
- an integrated approach is taken to surface water management as part of the overall design;
- a coordinated approach is taken to the design and siting of street furniture, boundary treatments, lighting, signage and public art;
- trees and other planting is incorporated, appropriate to both the scale of buildings and the space available;
- species are selected to enhance biodiversity through the use of native planting and/or species capable of adapting to our changing climate; and
- the design considers the needs of all users and adopts the principles of inclusive design.

2.2.31 Development will be supported where it demonstrates that prioritisation of access is by walking, cycling and public transport, and is accessible for all (Policy 80) by:

- giving priority to these modes where there is conflict with cars;
- conveniently linking the development with the surrounding

walking, cycling and public transport networks;

- prioritising networks of public transport, pedestrian and cycle movement so these are the best and safest means of moving around Cambridge. Areas where public transport, pedestrian and cycle movement is difficult or dangerous will be improved and, where possible, have further capacity for these sustainable modes provided;
- ensuring accessibility for those with impaired mobility;
- ensuring that any development requiring a new road or road access accords with the following:
- it is designed to give high priority to the needs of pedestrians and cyclists, including their safety;

### South Cambridgeshire Local Plan, 2018 (SCLP)

2.2.32 As detailed earlier, this statement focuses on the design of the proposed new station. Whilst the proposed new station will be situated within CCiC's administration area, as elements of the wider project are located within South Cambridgeshire District Council (SCDC), a summary of the South Cambridgeshire Local Plan (SCLP) and relevant policies are provided for wider context.

2.2.33 The Local Plan contains policies and proposals which will shape the future direction of change in South Cambridgeshire over the years to 2031.

2.2.34 Planning decisions will be made in accordance with the Local Plan and will affect the future well-being of people living and working in the district as well as others who visit and invest in South Cambridgeshire. This future direction is captured in the Council's vision, which has been drawn upon as the vision for the SCLP. Key relevant policies are referenced below:

### Sustainable Development

2.2.35 Policy S/3 (Presumption in Favour of Sustainable Development) states that when considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. . . .to secure development that improves the economic, social and environmental conditions in the area unless material considerations indicate otherwise.

### Cambridge Green Belt

2.2.36 Policy S/4 'Cambridge Green Belt' of the SCLP (ref. 04) confirms that new development in the GB will only be approved 'in accordance with Green Belt policy' in the NPPF. The policy's supporting text lists among the established purposes of the GB the preservation of the



‘unique character of Cambridge as a compact, dynamic city with a thriving historic centre’ and the maintenance and enhancement of its ‘quality setting.’

2.2.37 The factors the SCLP lists as defining the special character of the GB include:

- key views of Cambridge from the surrounding countryside;
- a soft green edge to the city;
- a distinctive urban edge;
- green corridors penetrating into the city;
- designated sites and other features contributing positively to the character of the landscape setting;
- the distribution, physical separation, setting, scale and character of Green Belt villages; and
- a landscape that retains a strong rural character.

### **Sustainable Drainage Systems**

2.2.38 Policy CC/8 states that development proposals must incorporate appropriate sustainable surface water drainage systems (SuDS) appropriate to the nature of the site and demonstrate that:

- Surface water drainage schemes comply with the Sustainable Drainage Systems: Non-statutory technical standards for sustainable drainage systems and the Cambridgeshire Flood and Water Supplementary Planning Document or successor documents;
- Opportunities have been taken to integrate sustainable drainage with the development, create amenity, enhance biodiversity, and contribute to a network of green (and blue) open space;
- Maximum use has been made of low land take drainage measures, such as rain water recycling, green roofs, permeable surfaces and water butts;

### **Protecting and Enhancing Landscape Character**

2.2.39 Development will only be permitted where it respects and retains, or enhances the local character and distinctiveness of the local landscape and of the individual National Character Area in which it is located (Policy NH/2).

### **Biodiversity**

2.2.40 Policy NH/4 states that new development must aim to maintain, enhance, restore or add to biodiversity.

2.2.41 The Policy also states that the built environment should be viewed as an opportunity to fully integrate biodiversity within new development through innovation.

2.2.42 Previously developed land (brownfield sites) will not be considered to be devoid of biodiversity. The reuse of such sites must be undertaken carefully with regard to existing features of biodiversity interest. Development proposals on such sites will be expected to include measures that maintain and enhance important features and appropriately incorporate them within any development of the site.

2.2.43 Climate change poses a serious threat to biodiversity and initiatives to reduce its impact need to be considered.

### **Artificial Lighting**

2.2.44 Policy SC/9 states that development proposals which include new external lighting will only be permitted where it can be demonstrated that:

- The proposed lighting scheme and levels are the minimum required for reasons of public safety, crime prevention / security, and living, working and recreational purposes;
- Light spillage and glare are minimised;
- There is no unacceptable adverse impact on the local amenity of neighbouring or nearby properties, or on the surrounding countryside;
- There is no dazzling or distraction to road users including cyclists, equestrians and pedestrians;
- Road and footway lighting meets the County Council’s adopted standards.

### **Securing High Quality Design**

2.2.45 Policy HQ/1 (Design Principles) states that all new development must be of high quality design, with a clear vision as to the positive contribution the development will make to its local and wider context. As appropriate to the scale and nature of the development, proposals must:

- Preserve or enhance the character of the local urban and rural area and respond to its context in the wider landscape;
- Conserve or enhance important natural and historic assets and their setting;
- Include variety and interest within a coherent, place-responsive design, which is legible and creates a positive sense of place and identity whilst also responding to the local context and respecting local distinctiveness;

- Be compatible with its location and appropriate in terms of scale, density, mass, form, siting, design, proportion, materials, texture and colour in relation to the surrounding area;
- Deliver a strong visual relationship between buildings that comfortably define and enclose streets, squares and public places, creating interesting vistas, skylines, focal points and appropriately scaled landmarks along routes and around spaces;
- Achieve a permeable development with ease of movement and access for all users and abilities, with user friendly and conveniently accessible streets and other routes both within the development and linking with its surroundings and existing and proposed facilities and services, focusing on delivering attractive and safe opportunities for walking, cycling, public transport and, where appropriate, horse riding;
- Provide safe and convenient access for all users and abilities to public buildings and spaces, including those with limited mobility or those with other impairment such as of sight or hearing;
- Ensure that car parking is integrated into the development in a convenient, accessible manner and does not dominate the development and its surroundings or cause safety issues;
- Provide safe, secure, convenient and accessible provision for cycle parking and storage, facilities for waste management, recycling and collection in a manner that is appropriately integrated within the overall development;
- Provide a harmonious integrated mix of uses both within the site and with its surroundings that contributes to the creation of inclusive communities providing the facilities and services to meet the needs of the community;
- Ensure developments deliver flexibility that allows for future changes in needs and lifestyles, and adaptation to climate change;
- Mitigate and adapt to the impacts of climate change on development through location, form, orientation, materials and design of buildings and spaces;
- Include high quality landscaping and public spaces that integrate the development with its surroundings, having a clear definition between public and private space which provide opportunities for recreation, social interaction as well as support healthy lifestyles, biodiversity, sustainable drainage and climate change mitigation;
- Protect the health and amenity of occupiers and surrounding uses from development that is overlooking, overbearing or results in a loss of daylight or development which would create unacceptable impacts such as noise, vibration, odour, emissions and dust;
- Design-out crime and create an environment that is created for people that is and feels safe, and has a strong community focus.

2.3 Transport Context

Existing Walking and Cycling Infrastructure

- 2.3.1 The area around the proposed station benefits from good existing pedestrian and cycle infrastructure connections. Many of the routes approaching the site have shared footway/cycleway surfaces or mandatory on-street cycle lanes.
- 2.3.2 The site and the surrounding area enjoy an extensive cycle network. Figure 2-3 identifies existing on-road and off-road cycle routes in the vicinity of the site.
- 2.3.3 Some of the key elements of the existing walking and cycling infrastructure in the vicinity of the site are as follows:
  - Francis Crick Avenue includes 1.5 m wide on-road mandatory cycle lanes and a 2m wide pedestrian footway on both sides. The cycle lanes form part of National Cycle Network (NCN) Route 11, which provides a connection to central and south Cambridge, including Cambridge Station, through a traffic-free route adjacent to the CGB, north west of the site.
  - Long Road and Queen Edith’s Way have shared cycleway/footways on either side of the carriageway.
  - Hills Road has two slightly raised cycle lanes (also known as ‘hybrid cycle tracks’) between the main carriageway and the footway.
  - On Hills Road between Long Road and the Addenbrooke’s roundabout in addition to hybrid cycle tracks there is an extra provision for southbound cyclists entering the CBC site.
  - There is extensive off-road cycle infrastructure both alongside Addenbrooke’s Road and the Green Belt.
  - The segregated route alongside the CGB connects with Trumpington Park and Ride, Cambridge Station, the western end of Long Road and residential areas of Trumpington.
  - Shelford Cycleway provides a direct, traffic-free route to Great Shelford.
  - A Dutch-style roundabout is in operation at Fendon Road/Queen Edith’s Way/Mowbray Road.
  - Babraham Road has off-road shared provision on the eastern side of the carriageway and a footway on the western side.
  - This provision is now connected with the CBC site via an improved link from Red Cross Lane and a new link via the Ninewells development.
  - Shared pedestrian and cycle paths within Hobson’s Park.
  - Public right of way footpath 198/1, Level Crossing and Hobsons Brook Footbridge in the South Cambridgeshire Parish of Great Shelford.

National Cycle Network (NCN) Route 11

- 2.3.4 NCN Route 11 connects Harlow in Essex with Wigginhall St Germans in Norfolk via Cambridge and Ely using a mixture of on-road and traffic-free routes. More locally, it provides a connection to central and south Cambridge, including Cambridge Station.
- 2.3.5 The route is off-road on the approach to the Addenbrooke’s Road/ Francis Crick Avenue/Dame Mary Archer Way roundabout from the south, and then follows an on-carriageway mandatory cycle lane along Francis Crick Avenue. After that, it again becomes a traffic-free route, in the form of a 3m-wide shared-use path beside the CGB and connects into Cambridge city centre.

Shepreth Junction

- 2.3.6 NCN Route 11 runs alongside the east side of the railway at Shepreth Junction and is heavily used by both cyclists and pedestrians. The proposed Sawstons Greenway scheme will widen this shared use path to from 2m to 3m. Footpath 198/1 links Granham Road with the A1301 Cambridge Road to the north of Great Shelford and crosses the railway just north of Shepreth Junction via a footbridge. This footbridge will be retained as part of the scheme.

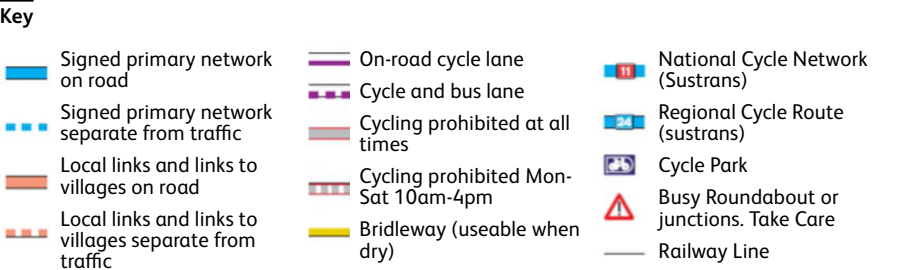
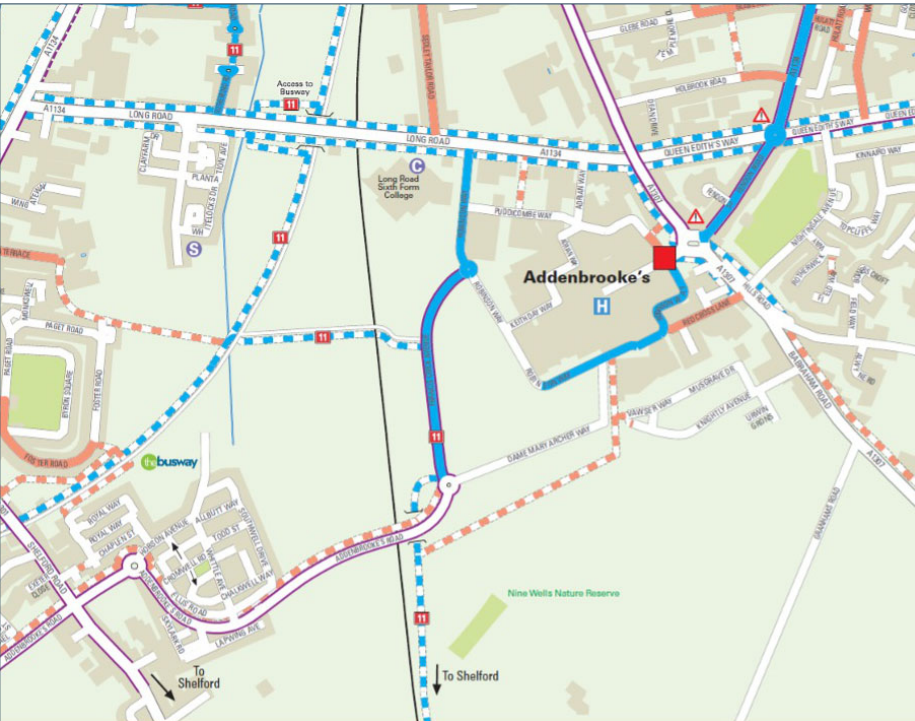


Figure 2-5: Existing Cycle Routes. (Source: Cambridgeshire County Council)

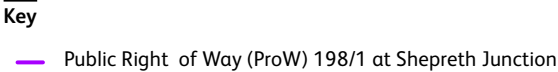
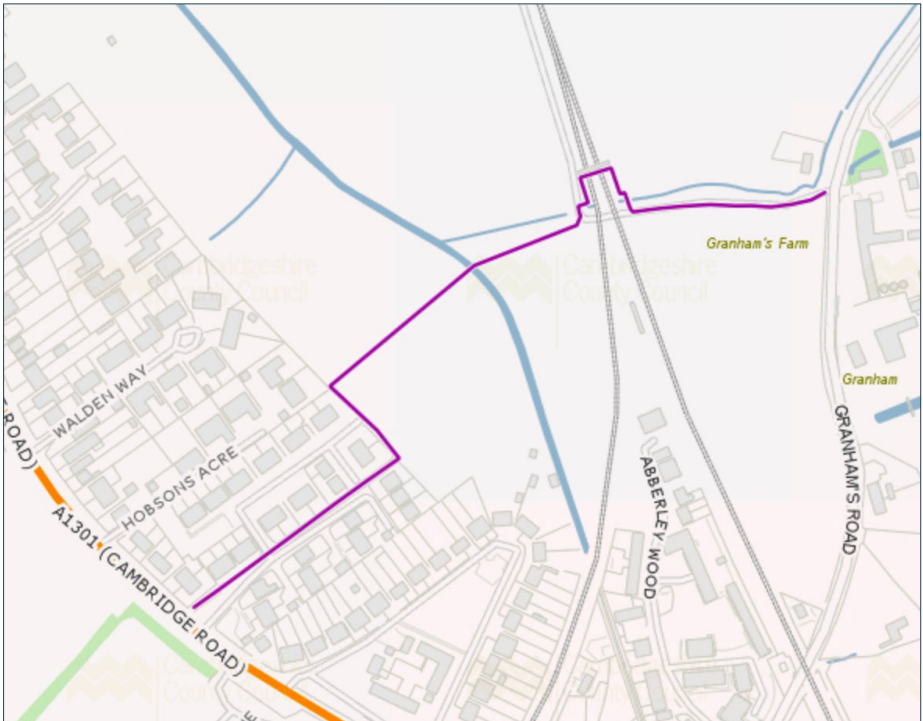


Figure 2-6: Websters footbridge at Shepreth Junction (PRoW198/1). (Source: cambridgeshire.gov.uk)

Public Transport

Bus Services

- 2.3.7
- A number of bus routes serve the area surrounding the site. These services vary in terms of route depending on day and time of service. Several local bus services operated by Stagecoach and Whippet Coaches stop or route close to the site, providing potential connections to the city centre and other areas within Cambridge.
- 2.3.8
- In addition, Addenbrooke’s Hospital Bus Station is approximately a 10-minute walk from the site and is served by about 60 buses per hour to and from Cambridge and the surrounding areas.

Rail Services

- 2.3.9
- The nearest rail station is Cambridge Station, located 2.6 km north of the site. The station is managed by Greater Anglia and served by:
  - Cross Country Services - including connections to Birmingham New Street, Leicester, Peterborough and Stansted Airport;
  - Great Northern Services - including connections to London Kings Cross, King’s Lynn, Ely, Letchworth Garden City, Hitchin and Stevenage. Great Northern services offer a mix of express, semi-fast and local stopping services;
  - Greater Anglia Services - including connections to London Liverpool Street via West Anglia Main Line, Norwich via the Breckland Line and Ipswich; and
  - Thameslink Services - including connections to Royston, Letchworth Garden City, Central London, Gatwick Airport, Maidstone East and Brighton.

Travel Hubs

- 2.3.10
- There are a number of Travel Hubs<sup>1</sup> including rail stations and park-and-ride facilities, and features that may be provided at these hubs include bike rental schemes to reduce the need for users to travel by car for all or part of their journey. There are currently five park and ride locations around Cambridge city centre with some routes connecting directly to the CBC, Royal Papworth Hospital and Addenbrooke’s Hospital:
  - Milton Park and Ride;
  - Newmarket Road Park and Ride;
  - Babraham Road Park and Ride;
  - Trumpington Park and Ride; and
  - Madingley Road Park and Ride.

Highways

Francis Crick Avenue

- 2.3.11
- Francis Crick Avenue is a single-carriageway private road providing access to locations within the CBC. The road is lit, subject to a 20mph speed limit, and has footways on both sides. There are mandatory cycle lanes along both sides of the carriageway. Because of the mandatory cycle lanes on both side of the carriageway, parking and loading are prohibited along its entire length.
- 2.3.12
- During site investigation it was observed that the road is relatively low-trafficked, and that the existing junctions operate significantly under capacity.

Francis Crick Avenue/CGB junction

- 2.3.13
- The Francis Crick Avenue/CGB junction is a four-arm signal-controlled junction with pedestrian and cycle crossings on all arms. Movements on the CGB arms are restricted to buses, with no general traffic allowed. The CGB has a shared pedestrian and cycle path on the south side. The traffic signal junction operates under a 3-stage method of control with separate phases for general traffic on Francis Crick Avenue, bus movements on the CGB and all-round green phase for pedestrians and cycle crossings across all arms of the junction.

Francis Crick Avenue/Dame Mary Archer Way Roundabout Junction

- 2.3.14
- The Addenbrooke’s Road/Francis Crick Avenue/Dame Mary Archer Way Roundabout junction is a three-arm roundabout with an approximately 40 m inscribed circle diameter. The roundabout has a centre island which is approximately 27 m diameter, including a 1.5 – 2.0 m wide overrun area around its circumference.
- 2.3.15
- NCN Route 11 joins the roundabout from the west, connecting its users to pedestrian and cycle facilities at the roundabout and along Francis Crick Avenue and Dame Mary Archer Way. There are uncontrolled crossings in the form of dropped kerbs, tactile pavement and splitter island on all approaches to the roundabout.
- 2.3.16
- A gated maintenance track, which is proposed for access to the main eastern construction compound, is located between the Addenbrooke’s Road and Dame Mary Archer Way arms of the roundabout.

Addenbrooke’s Road

- 2.3.17
- Addenbrooke’s Road is a single carriageway public highway providing a direct route between the CBC and, via Hauxton Road, the M11 Junction 11. The road links the Addenbrooke’s Road/Francis

Crick Avenue/Dame Mary Archer Way roundabout to the east and the junction with Hauxton Road to the west.

- 2.3.18
- On the approach to the Addenbrooke’s Road/Francis Crick Avenue/Dame Mary Archer Way roundabout, the road is lit, subject to a 30mph speed limit, and has a footway and a raised segregated cycle track on the northern side only. There are also mandatory cycle lanes along both sides of the carriageway, though those are faded and it is not clear if they are still in use.

Dame Mary Archer Way

- 2.3.19
- Dame Mary Archer Way is a single-carriageway private road connecting the Addenbrooke’s Road/Francis Crick Avenue/Dame Mary Archer Way roundabout and Robinson Way within the CBC.
- 2.3.20
- On the approach to the Addenbrooke’s Road/Francis Crick Avenue/Dame Mary Archer Way roundabout, the road is lit, subject to a 20mph speed limit, and has footways and mandatory cycle lanes along both sides of the carriageway.

Adopted Highways

- 2.3.21
- Cambridge Medipark Ltd is the developer of the Phase 1 and 2 expansion of CBC and is responsible for the CBC highway network. Whilst the roads within the CBC, including Francis Crick Avenue, are not adopted by Cambridgeshire County Council (CCoC), Cambridgeshire Constabulary is responsible for automated enforcement using Automatic Number Plate Recognition (ANPR) cameras which are in operation to prevent rat-running through this area.

Hobson’s Park

- 2.3.22
- Hobson’s Park contains several east-west and north-south aligned tracks. Whilst these are primarily intended for the pedestrian and cycle users of this public open space they are also used by park-maintenance vehicles.
- 2.3.23
- In addition to these, dedicated maintenance / emergency vehicle tracks have been created along the east and western edges of the park. Both tracks are accessed off the public highway from Addenbrooke’s Road at OS grid-reference TL 45561 54268.
- 2.3.24
- As shown on Figure 2-4 the eastern path initially heads south from Addenbrooke’s Road, before turning eastwards, parallel with Hobson’s Conduit, and then turning north under Nine Wells Bridge before running north along the edge of the railway until it reaches Addenbrooke’s Bridge and the site of the proposed station.

<sup>1</sup> A Travel Hub is a location for interchange between modes e.g. car or cycle to bus/rail.



- 2.3.25 The western maintenance path heads northwards along Hobson’s Brook before turning east and parallel with the CGB spur into the CBC until it reaches the site of the proposed station.
- 2.3.26 Both tracks currently then join and head under Addenbrooke’s Bridge in order to provide access to the Hobson’s Park ‘Active Recreation Area’ to the north of the CGB spur.

Key

Railway

1.

Francis Crick Avenue / Guided Busway Junction

2.

Francis Crick Avenue / Dame Mary Archer Way Roundabout Junction

3.

Francis Crick Avenue

4.

Addenbrooke’s Road

5.

Dame Mary Archer Way

6.

Park access track

7.

Hobson’s Park western maintenance access track

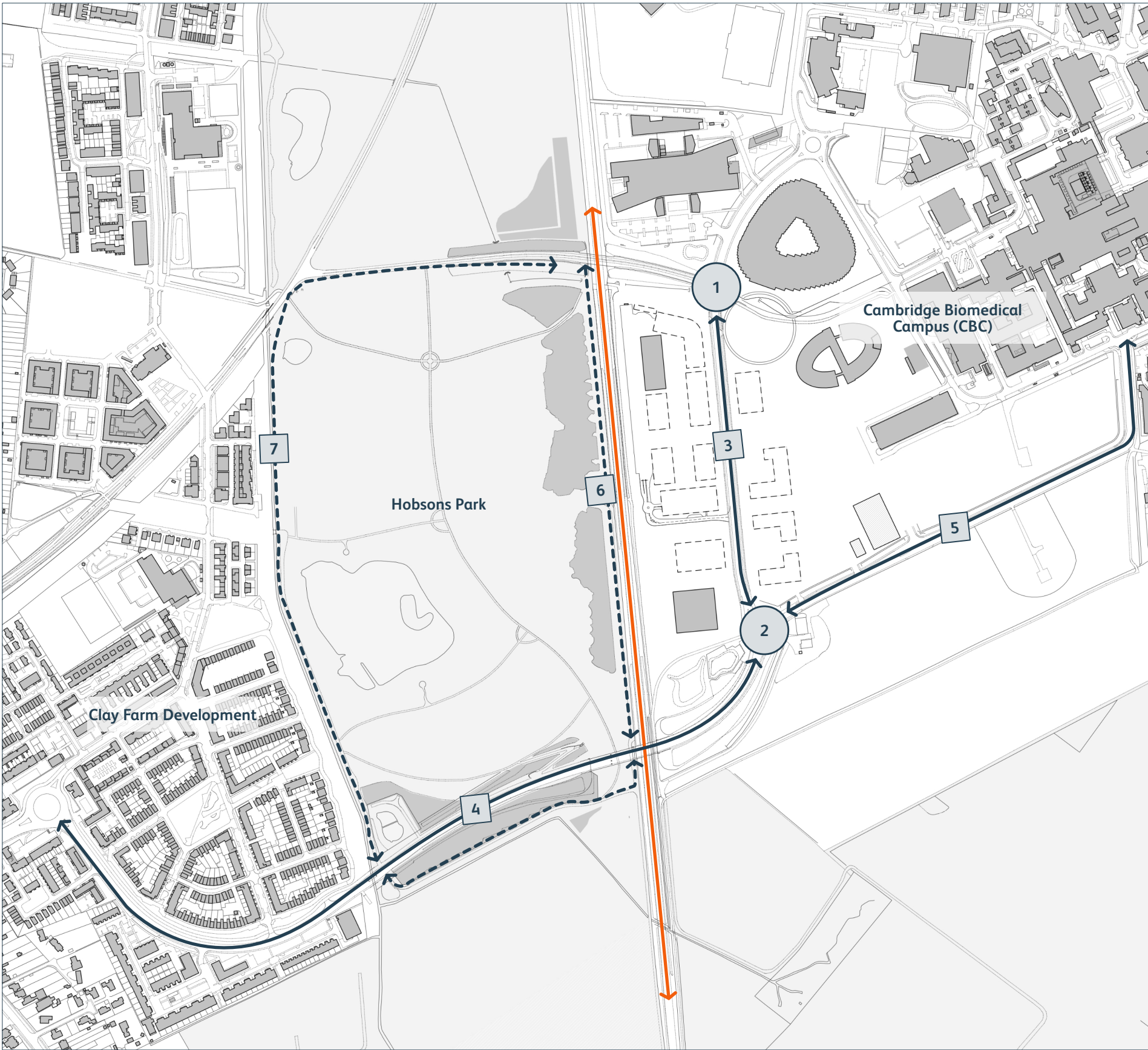


Figure 2-7: Highways Key Plan



## Interfacing Transport proposed Developments

2.3.27 Proposed and aspirational transport infrastructure improvement schemes in Cambridge and South Cambridgeshire have been identified and reviewed to establish whether they are likely to have an impact on the proposed Development. The Cambridge South East Transport (CSET) and Sawston Greenway scheme have a direct impact on station location and accessibility.

2.3.28 CSET aims to provide better public transport, walking and cycling options for those who travel in the A1307 and A1301 area, improving journey times and linking communities and employment sites in the area south east of Cambridge. Phase 2 of the project includes a new dedicated Mass Rapid Transit (MRT) route between the A11 and the CBC via Sawston, Stapleford, Great Shelford with onward connection to the City centre. The scheme includes a segregated public transport route along Francis Crick Avenue to form part of the wider Phase 2 route linking the CBC with the A11.

2.3.29 The CSET scheme would be part of the emerging Cambridgeshire Autonomous Metro (CAM). The future CAM network proposes electric, rubber-tyred tram-like vehicles using dedicated off-road routes to bypass congestion.

2.3.30 The Sawston Greenway proposal overlaps with and forms part of the CSET Phase 2 project on Francis Crick Avenue. The proposals include the creation of an off-road segregated walking and cycling route on the west side of Francis Crick Avenue, replacing the on-road cycle lanes.

2.3.31 A series of project interface meetings have taken place during the design development of the station. The CSET scheme and associated Sawston Greenway scheme has recently been revised as key stakeholder engagement is ongoing.

2.3.32 Key interface issues with the proposed Development are as follows:

- The CSET proposals require a left-in/left-out priority junction for the station access due to the proximity of the general traffic northbound stop-line. Vehicles entering the station access from the north will U-turn at the Addenbrookes Road roundabout whilst vehicles exiting the station to the south will U-turn at the Robinson Way roundabout. Vehicles leaving and entering the station will have to give priority to pedestrians and cyclists using Sawston Greenway.
- The station access in the CSET scheme is not aligned with the proposed (station) Development's proposed access, which is approximately 10m to the north.

- The CSET scheme extends the highway boundary about 8m further west. Again, this would reduce the available space for the station site.
- CSET bus stops are proposed on Francis Crick Avenue just south of the station access, which will provide good public transport interchange with station.
- The Sawston Greenway proposals improve pedestrian and cycle access to the station from the south.
- Rail replacement bus stops will possibly need to be relocated to the north of the CGB.
- The CSET proposals would provide a widened pedestrian/cycle crossing across the southern arm of Francis Crick Avenue which will be beneficial to pedestrians and cyclists using the station. A diagonal crossing is also proposed which will improve pedestrian connection between the AstraZeneca buildings.
- CSET are currently undertaking LinSig traffic modelling of their proposals. No details have been provided of the proposed method of traffic signal control for the CSET scheme.
- The current CSET programme indicates a TWAO application being submitted in summer 2021, and a potential construction period of 2023 to 2025.



Figure 2-8: CSET emerging proposal along Francis Crick Avenue



- Key
- Existing Railway
  - Key Destination Nodes within adjacent Development
  - Existing shared pedestrian / cycle paths
  - National Cycle Network Route 11
  - Guided Busway
  - Park access track



Figure 2-9: Access and Movement context plan



## 2.4 Townscape and Landscape Context

- 2.4.1 The site is situated within the ‘Southern Fringe’ of Cambridge. This term is applied to the area that was contained with the Area Development Framework (ADF) document prepared by CCiC in January 2006 in order to provide a ‘non-statutory form of planning guidance to help direct the preparation of future planning applications and the planning of services and infrastructure by local authorities’.
- 2.4.2 The area stretches from Trumpington Meadows in the west to Babraham Road in the east, with the proposed Station site at its centre.
- 2.4.3 Development in this area allows for the expanding needs of the city to be accommodated whilst sensitive historical sites in other parts of Cambridge are conserved.
- 2.4.4 Many of the major developments that prompted the preparation of the ADF have now been constructed. These include the residential area of Clay Farm (sometimes referred to as Great Kneighton) and the expansion of the CBC.
- 2.4.5 The creation of the Clay Farm residential neighbourhood redefined the boundaries of the Cambridge Green Belt (GB) in this area of the city. It also spawned the creation of the major new public open space of Hobson’s Park upon the remaining area of GB between the housing and the CBC.
- 2.4.6 Between the edge of the city and the CGB spur to the CBC, Hobson’s Park displays an open informal character – acting as a transition between the countryside to the south and the city centre to the north. Within this area is a network of winding crushed stone paths between areas of wildflower meadow and species rich grassland. The area also contains a lake with bird hides – the Hobson’s Park Bird Reserve, allotments, and the watercourses of Hobson’s brook and North Ditch. A belt of young native trees and shrubs have been planted on gently sculpted low earth mounds along the western edge of the Park to help reduce the visual dominance on the Park of the buildings of the CBC. The proposed station site would lie between these tree belts and the railway.
- 2.4.7 To the north of the CGB spur the ‘Active Recreation Area’ is a recently created public space of timber boardwalks, informal recreational land and a conical earth viewing mound. To the west of this is a newly developed skate park.
- 2.4.8 The remainder of the ‘green corridor’, which extends from the city’s edge to the southern extents of its historic core, contains a mixture of school/college playing fields, tree belts and routeways. These later group include NCN Route 11, the CGB between the city centre and Trumpington, the London-Cambridge railway, and a number of strategic east-west vehicular routes.



Figure 2-10: View towards Addenbrooke's Bridge embankment and the MRC building beyond



Figure 2-13: View over the Park towards the Cambridge University Building and Nine Wells bridge



Figure 2-11: Hobson's Park Saplings



Figure 2-14: View towards the Clay Farm residential over Hobsons Brook



Figure 2-12: Addenbrooke's Bridge and embankment carrying the CGB



Figure 2-15: Existing access track along the east side of Hobson's Park runs along the railway corridor



2.4.9 The proposed station would sit between two such east-west routes: the CGB spur and Addenbrooke's Road. These two routes rise in elevation in order to cross over the railway (at Addenbrooke's Bridge and Nine Wells Bridge – respectively). The bridges' embankments and heavily engineered structures, when combined with the visually arresting nature of the CBC buildings to the east of the park, alter the otherwise informal and country-park character of Hobson's Park to one that is markedly more suburban in character.

2.4.10 In contrast to the visual dominance that the multi-storey metal and glass-clad CBC buildings have in views eastwards across Hobson's Park, those of the Clay Farm residential neighbourhood appear more integrated to this setting. In addition to being only 3-4 storeys high, the use of timber cladding and brick, with variances in roof profile and building line creates a character that appears more, permeable settled and cohesive with that of the Park and the city's edge.

2.4.11 As well as housing the Clay Farm neighbourhood, the area to the west of the Park, also includes a number of community assets:

- Trumpington Park Primary School
- Trumpington Community College
- Clay Farm Community Centre

2.4.12 The existing character and form of Hobson's Park and its surrounds, in which the west side of the station would be sited, can be summarised as follows:

- Clear sense of openness through the Park created by broad, uncluttered spaces.
- Buildings and railway crossing embankments create clear edges to the space.
- Occasional views to the higher landforms of the countryside to the south of the city.
- The edge of Clay Farm creates a settled, domesticated character.
- The buildings of the CBC are visually dominant, despite the belts of native planting along the Park's east edge.
- Timber bird hides, and informally surfaced paths, create semi-pastoral character.
- Mixture of gentle and pronounced landforms.
- Buildings are 3-4 storeys (12 - 15m) high.

2.4.13 The townscape character of the CBC is markedly different from that of Hobson's Park and the Clay Farm neighbourhood. In contrast to



Figure 2-16: Northern location station site option between AstraZeneca's southern campus and the CGB/Addenbrooke's Bridge



Figure 2-19: Northern location option viewed from the CGB



Figure 2-17: Central location option viewed from Francis Crick Avenue



Figure 2-20: Central location option between University of Cambridge building and AstraZeneca campus



Figure 2-18: Southern location option viewed from Addenbrooke's Road



Figure 2-21: Southern location option to east of the railway viewed from Addenbrooke's Road / Nine Wells bridge



their relatively submissive and settled form, the character of CBC imposes itself upon its setting.

- 2.4.14 A masterplan of plots containing 7-9 storey office buildings/research establishments and health establishments, separated by broad tree lined avenues is taking shape.
- 2.4.15 The buildings that are already constructed, under construction or with planning permission have been designed individually within the parameter of the masterplan, but display common characteristics such as strong horizontal and vertical forms, metal and glass cladding, extensive roof-top plant which is often interwoven into the architectural design.
- 2.4.16 The intervening landscape is a mosaic of neatly planned road verges, shared cycle/pedestrian footways and paths, single-species hedges, Gabion edged ditches and carparks.
- 2.4.17 The buildings within the CBC closest to the proposed station site are:
- Royal Papworth Hospital
  - Addenbrooke's Hospital
  - University of Cambridge Research Building
  - AstraZeneca Research and Development Centre.
  - AstraZeneca South Campus
- 2.4.18 Whilst the current context is weighted to the north, there are long-term plans to expand the CBC over the coming 20 years. When complete and operational, there is expected to be a much larger number of people visiting the campus, and the weighting will be more evenly distributed across the CBC.
- 2.4.19 The southern AstraZeneca campus is currently being developed. There are key interfaces at the northern and eastern boundary with the proposed Development in terms of boundary treatment, and coordination of assets to the rear of platform 1 will be required.
- 2.4.20 Whilst this southern area may be summarised as being of a densely built-up character with strong urban form, the building designs are varied with some unifying characteristics:
- Recessed plinth at base
  - Façades contain predominantly vertical forms, and display recessed metal panel cladding
  - Plant on roof contributes to architectural design
  - Interwoven landscape structure
  - Buildings are 26 - 30m high
- 2.4.21 South of Addenbrooke's Road and Nine Wells Bridge the open countryside bounding Cambridge's southern edge begins. This is an

area of predominantly open, low-lying arable farmland punctuated by occasional tree belts, hedgerows and farmsteads. The horizon is formed by the gently rising Gog Magog hills to the south east and by vegetative edge of the linear settlement along the A1301 between Cambridge and Great Shelford to the south west.

- 2.4.22 The arable land immediately south of Addenbrooke's Road / Nine Wells Bridge has been split by the railway to smaller angular parcels. This area also contains the Local Nature Reserve of Nine Wells in which Hobsons Conduit springs. In addition, the White Hills Farm Scheduled Monument is located within the southern field to the west of the railway track, just south of a proposed line-side rail systems enclosure and substation. Nine Wells Monument is located to the east of the railway within Nine Wells nature reserve (Fig. 2-6)



Figure 2-22: CBC 'Circus': Looking from the station site towards the AZ R&D and HQ building



Figure 2-23: View towards site from Francis Crick Avenue



Figure 2-24: Addenbrooke's bridge from the CGB footpath



Figure 2-25: Nine Wells bridge (Addenbrooke's Road)



Figure 2-26: View of Hobson's Park from Nine Wells bridge/Addenbrooke's Road



- Key**
- Existing Railway
  - Key views as identified in the Southern Fringe Area Development Framework
  - Key 'Gateways' identified in the Southern Fringe Area Development Framework
  - Key structural vegetation
  - Watercourse/bodies
  - Scheduled Monument
  - Cambridge Green Belt
  - Protected Open Space (CCC Local Plan 2018)

**Key Surrounding Buildings and Destinations**

- A. Long Road 6th Form College
- B. Trumpington Community College
- C. Clay Farm Community Centre
- D. Trumpington Park Primary School

**Cambridge Biomedical Campus**

- 1. Future development and expansion land
- 2. Royal Papworth Hospital (height AGL: 29m)
- 3. Addenbrooke's Hospital
- 4. Medical Research Council Laboratory (height AGL: 26m, 31m to top of roof towers)
- 5. AstraZeneca Research and Development (height AGL: 19m)
- 6. AstraZeneca Energy Centre and Research and Development enabling building (height AGL 20m, 24m to top of roof plant)
- 7. University of Cambridge Research Facility (height AGL:25.6m, 29m to top of roof plant)
- 8. Heart and Lung Research Institute
- 9. Abcam Plc
- 10. Outline planning permission for office development
- 11. SCDC Employment Allocationa



Figure 2-27: Townscape context plan



## 2.5 Structures Context

2.5.1 Existing structures present within the site extents are detailed in the adjacent figure. The following structures have been identified as constraints or requiring modification:

- Long Road Bridge (carrying Long Road over the railway)
- Unknown culvert between Addenbrooke's Bridge and Long Road Bridge
- Addenbrooke's Bridge (carrying the CGB over the railway)
- Tibbets Culvert, south of Addenbrooke's Bridge/embankment and associated irrigation mains
- Nine Wells Bridge (carrying Addenbrooke's Road over the railway)
- Bridge over Hobson's Brook/Conduit carrying NCN Route 11
- Hobson's Brook (Conduit) Underbridge
- Websters footbridge
- Websters Culvert

### Addenbrooke's Bridge and embankments

2.5.2 Addenbrooke's Bridge defines the northern boundary of the station location and forms a significant constraint that has influenced the railway infrastructure design, and as a result, the station location. On the east, its embankment could impact on the overall footprint of the station building and the associated forecourt footprint.

2.5.3 The bridge has reinforced earth abutments. Therefore, understanding the extent of the reinforced earth is key to avoid impacts when positioning the station and forecourt. The proposed design has been developed around the structural constraints set by the existing bridge.

### Culverts

2.5.4 The overall drainage design for the rail corridor will require detailed consideration and could result in many changes and additions of minor culvert and headwall structures. In particular, Tibbets Culvert will be impacted by the proposed station location in two ways:

2.5.5 The width of the station. The existing culvert will need to be lengthened below the additional tracks, the station buildings and the immediate station forecourt areas to the east and west.

2.5.6 Flood Risk. The extension of the Hospital Culvert Structure to replace North Ditch across the station forecourt area to the east of the railway creates space for cycle storage, but would create a risk of blockage at the change of section between the circular pipe and the rectangular culvert.

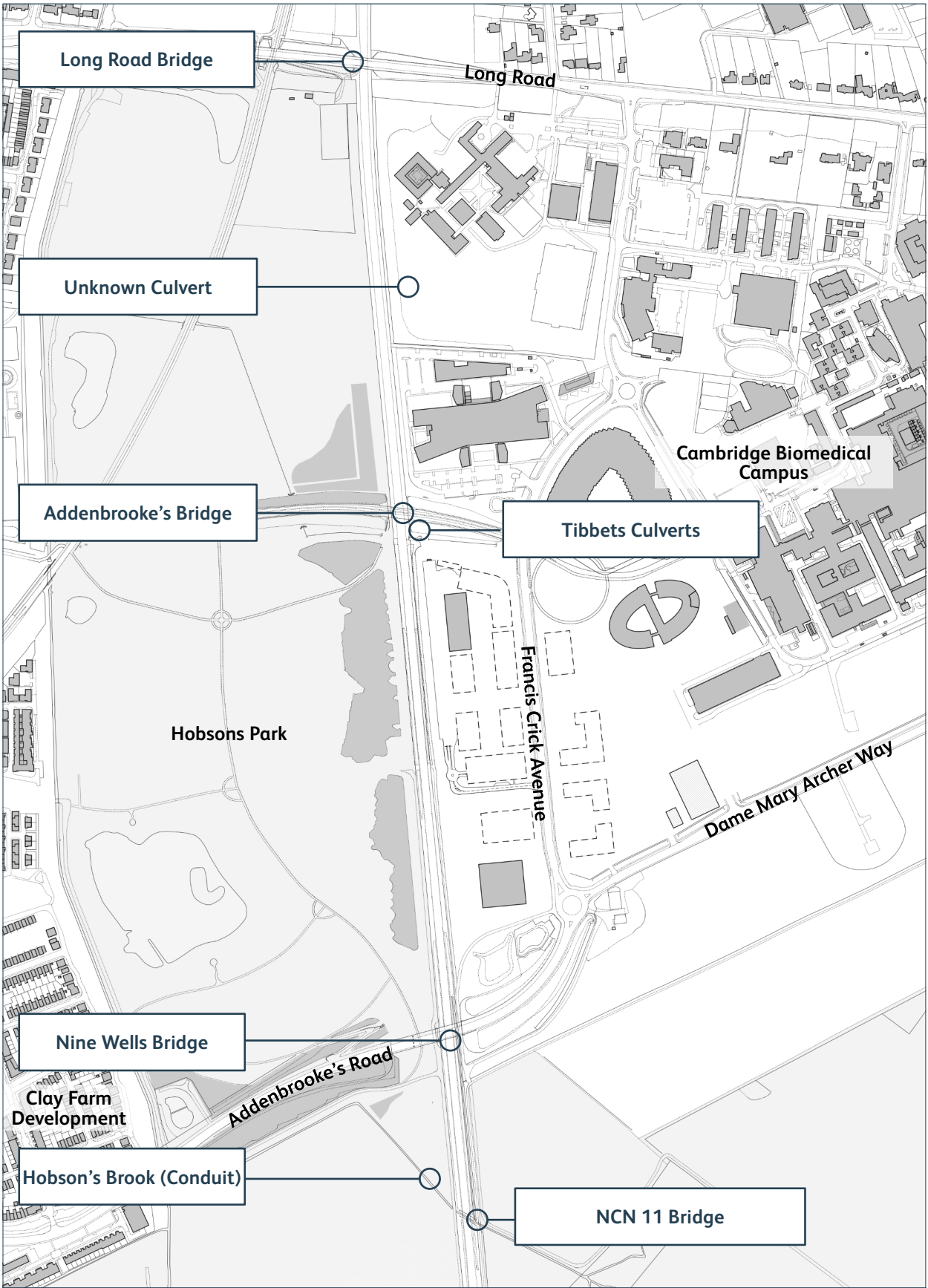


Figure 2-28: Existing Structures location plan

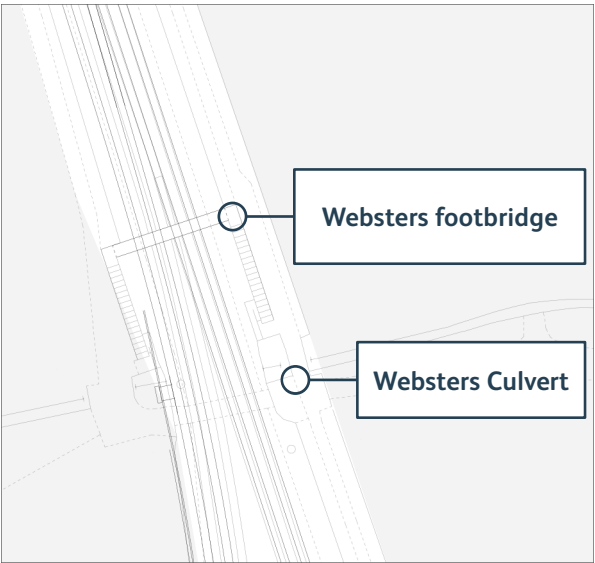


Figure 2-29: Websters footbridge and culvert



2.6 Services and Utilities Context

2.6.1 A number of existing utilities within the proposed Development boundary which have been identified and are summarised in the adjacent Utilities context plan. Utilities that cause a significant constraint or may require diversion are noted below.

High Pressure Gas Main

2.6.2 A High-Pressure gas main crosses the tracks midway between Addenbrooke’s and Nine Wells bridges. This main supplies Cambridge and the CBC. A 20m easement has been allowed for within the development of the design, impacting the possible locations for platforms and associated structures such as the footbridge at the southern end of the platforms.

Low Pressure Gas Main

2.6.3 AstraZeneca’s low-pressure gas main is located Xm to the east of the existing railway boundary. This impacts on the construction of the platforms and the position of the OHLE structures.

Water Main

2.6.4 A 400mm water main runs along the western side of the railway from Nine Wells Bridge and crosses the railway approximately centrally between Addenbrooke’s and Nine Wells bridges. This is in the same location where the high-pressure gas main crosses under the railway.

2.6.5 It then runs across the railway along the eastern boundary of the railway toward Addenbrooke’s Bridge and is diverted to pass through the embankment. It is assumed that this diversion was part of the construction of Addenbrooke’s Bridge.

2.6.6 A minor diversion will be required to accommodate the proposed station platforms, forecourt and building on the west side. Additionally, a diversion will be required on the north side of Addenbrooke’s Bridge to the west of the railway to accommodate the position of OLE structures.

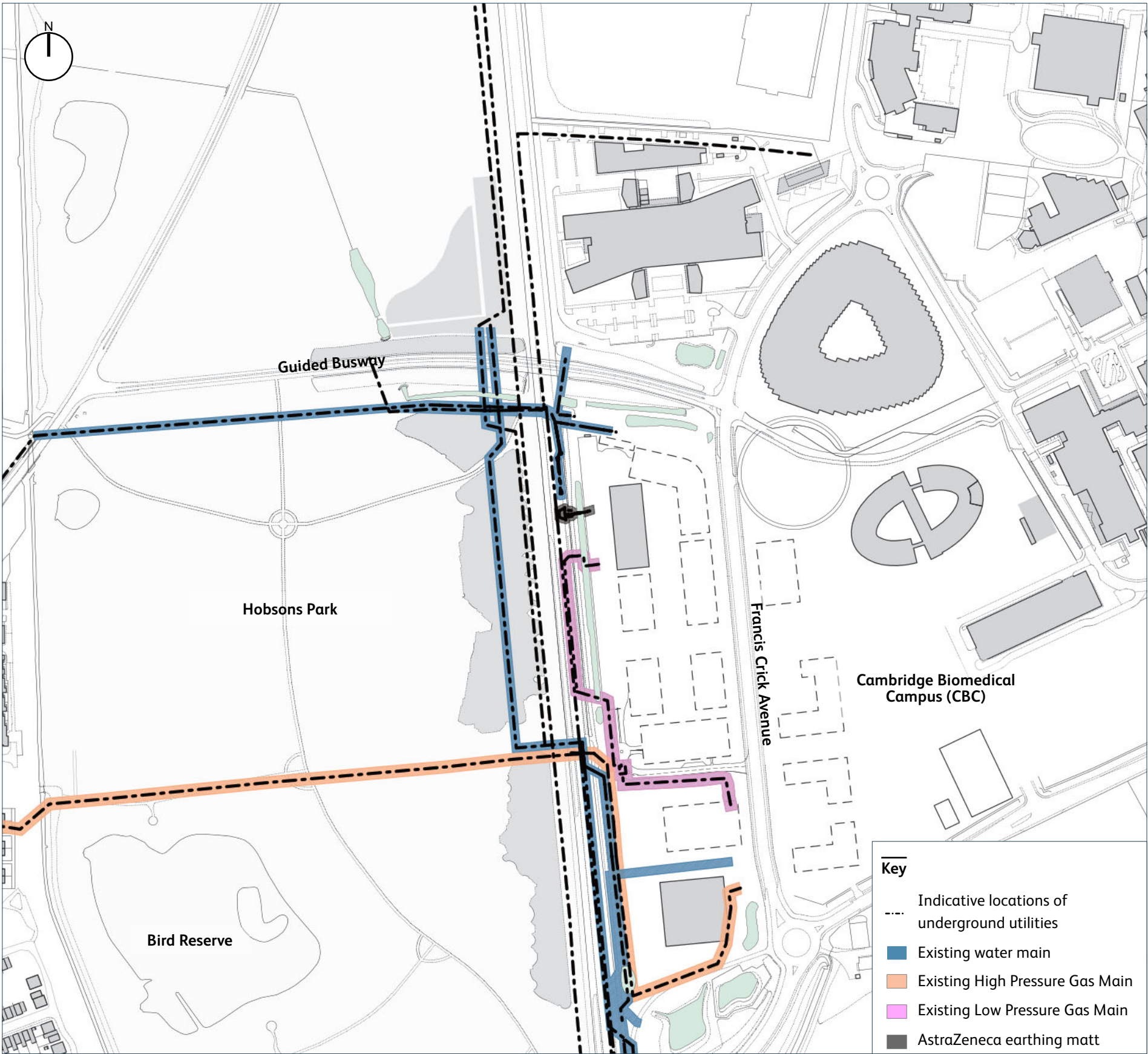


Figure 2-30: Utilities Context Plan



2.7 Drainage Context

- 2.7.1 Surface water drainage in the area of the station is primarily via attenuation ponds and swales feeding to two primary watercourses, these being North Ditch to the north of the station area and Hobson’s Brook or Conduit to the south.
- 2.7.2 The water in Hobson’s Conduit is supplied from the Nine Wells Nature Reserve (fig 2-24), south of Addenbrookes Road and was originally devised to provide clean water for Cambridge. The stream passes under the railway and to the west of Hobsons Park, run north under Long Road and continues towards the city terminating at the Conduit Head. From here the water runs along the Trumpington Street runnels and in underground channels into two College ponds.
- 2.7.3 Hospital Culvert drains the area to the east and falls towards the station site, crossing Francis Crick Avenue before it becomes North Ditch.
- 2.7.4 Surface water within the AstraZeneca South Campus is managed by a combination of a swale to the east of the railway and tanks to attenuate the discharge to North Ditch. The proposals will have a minor impact on the swale which will need to be adjusted towards the southern end of the adjacent platform.
- 2.7.5 Surface water runoff from Mid Boulevard is stored in the Mid Attenuation Basin in the proposed station site to attenuate the discharge to North Ditch. Current proposals include the re-location of the Mid Attenuation Basin within the site.
- 2.7.6 There is a ditch on the east side of the railway boundary that connects directly to Hobson’s Brook. This ditch lies within the footprint of the new Up loop and will be replaced by track drainage connected to a new attenuation basin south of Addenbrooke’s Road.



Figure 2-31: Drainage Context Plan

2.8 Social and Economic Context

- 2.8.1 Cambridge is one of the UK’s most successful and fastest growing cities. The CBC is an internationally significant health and life sciences cluster and is expected to accommodate 27,000 jobs by 2031. Over the next four years, 3750 new jobs are expected to be created. It is envisaged that by 2031 new housing developments across the Cambridge Southern Fringe comprising an estimated 4000 new homes will have been built. This future growth in Cambridge is expected to place significant pressures on the railway system which is already running at full capacity
- 2.8.2 The CLP identifies the CBC and the Cambridge Southern Fringe as an area of major change in Cambridge.
- 2.8.3 Achieving a modal shift to public transport is also likely to improve the wider Cambridge South area as a place to live and work, helping to avoid problems of highway congestion and the associated impacts seen over the last few years.
- 2.8.4 The DfT published a Strategic Outline Business Case (SOBC) in November 2017 for a new railway station in the south of Cambridge, setting out the case for the new station explaining how it would contribute to the long term success of the Cambridge South area advancing economic growth and contributing to local and national Government policy objectives.
- 2.8.5 The Strategic Case at Outline Business Case (OBC) stage was published in February 2021 and builds on the SOBC, setting out the need for the scheme and the ‘case for change’ in the context of three years further of more detailed study by Network Rail and by Mott MacDonald, and in the midst of the current COVID-19 pandemic.
- 2.8.6 Connectivity across the city and its surrounds has allowed wide networks to develop and facilitated a culture of collaboration between entrepreneurs, businesses, and academia. The new station would connect the CBC with potential destinations such as central London, London Stansted Airport, Ely, Birmingham and Europe.
- 2.8.7 The station would also provide access to a growing area of high-quality employment and also help relieve congestion in the local area by supporting the development of environmentally sustainable transport in Cambridge. In the future, East West Rail services from Oxford to Cambridge could serve the new station.
- 2.8.8 CBC is key to economic growth in Cambridge and the wider region, is already an internationally recognised centre of excellence and is expected to continue to grow as companies such as Astra Zeneca develop the site and the region’s hospitals are consolidated in the area.
- 2.8.9 Congestion in the local and wider area is recognised as a key issue that needs a sustainable solution. The new station will help ease congestion and provide better public transport links to stimulate economic growth and support future developments.
- 2.8.10 The CBC currently has good road connections to the wider network through two roads leading to and from the M11 motorway (Addenbrooke’s Road and Francis Crick Avenue) however a new

station would provide a more sustainable mode of transport and interchange with other sustainable forms of transport such as cycling.

- 2.8.11 The proposed Development will improve connectivity across Cambridgeshire and provide more sustainable travel options for patients, visitors and employees when travelling to and from the CBC. Improving connectivity to the campus and the local area will support growth by improving access to a growing area of high-quality employment.
- 2.8.12 The proposed Development has engaged with key residents, business, community groups and recreational users and site operators within the local area as part of the TWAO public and statutory consultation process. Resultant mitigation and enhancement measures that have been identified by the project team have been incorporated into the mitigation plan as described in the Environmental Impact Assessment and included within the design development.
- 2.8.13 Further details of how the social context influenced the development of the proposed Development can be found in the Environmental Statement and the Consultation Report.



Figure 2-32: Route map with the new station, Cambridge South indicated



Figure 2-33: Project Southern Fringe area

## 3.0 DESIGN VISION

- 3.0.1 Stations add value to the local areas they serve and should be inclusive, connecting people and places in a way which can be used by anyone.
- 3.0.2 Cambridge South Station will be a high quality, low carbon building that sits comfortably within its landscape setting whilst meeting the needs of all users within a sustainable architectural envelope.

### 3.1 Design Principles

- 3.1.1 The project team have been guided to date by the design principles set out in **Appendix A** which provide the detailed design framework for a design response based on a contextual approach.
- 3.1.2 These are aligned with Network Rail's Principles of Good Design which are analysed, defined and responded to as part of the design process to ensure proposals are connected to the communities they serve by seeking out opportunities that maximise the overall benefit provided by the proposed Development.
- 3.1.3 The key themes are:

**Identity:** Proposals developed in a way which provides delight, value for money and a high-quality experience to the user;

**Passengers:** Facilitate the safe and efficient flow of passengers at peak hours;

**Community:** Proposals are developed in a way which elevates local people's quality of experience;

**Collaborative:** Proposals are developed through an iterative design process that creates an inclusive and contextually responsive building;

**Inclusive:** Proposals are to be designed in a manner which ensures the overall journey experience from forecourt to train is intuitive and enjoyable to all;

**Connected:** The success of transport infrastructure relies on simplifying journeys, connecting one mode of transport to another, putting passenger experience at the forefront of design considerations;

**Contextual:** Proposals are to be in proportion and sympathetic to the local character, enhancing the civic quality and character of the existing environment; and

**Innovative:** Assets should be designed in a way which considers the whole life cycle of the project to minimise waste and provide future flexibility.

**Sustainable:** Applying "good design" should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction, matched by an appearance that demonstrates good aesthetics as far as possible.

### 3.2 Objectives

- 3.2.1 In demonstrating compatibility with relevant local planning policy frameworks the CLP and wider national policy and guidance, to develop a proposal that responds to the site, the following objectives were established and form a key narrative to support the development of the proposed Development:

#### Building Design

**The station should 'front' the east and work symbiotically with the emerging CBC masterplan.** Reason: to be consistent with improved accessibility to jobs on the CBC and services at the hospitals are a key justification for the station location.

**The station should have a secondary (subservient) entrance to the west which is sympathetic to the landscape setting of the country park.** Reason: economically and socially provides the greatest benefit from the proposals.

**There needs to be an overall coherence to the architecture.** Reason: to create a building that has a confidence and identity and which celebrates the site characteristics and legacy of great railway buildings.

**The station should provide the international gateway to the CBC.** Reason: to support the SBC and access to the CGB and emerging CSET proposals.

#### Movement and Access

**Improve pedestrian and cycle access from the west.** Reason: The existing shared use path is often congested at peak times so an improved access providing direct access to the station from the west would be provided through Hobson's Park.

**Primary vehicular access to the east side only.** Reason: Given the recreational and wildlife value of the Green Belt/Hobson's Park, over provision of vehicular access is not warranted.

**Maximise cycle and pedestrian access from both east and west (with cycle parking provided both sides of the railway).** Reason: to avoid cyclists and pedestrians having to travel on a circuitous route to access the station from surrounding developments and to maximise benefit of the station for the local community.

**Provide safe and good pedestrian and cycle connections.** Reason: the public would access the station at night and would require a direct and safe route that is clearly navigable and free of obstacles. This means that a robust, level and well-lit and signposted access route would be required.

**Rail replacement services do not need to stop at the station**

**entrance to the east where vehicular access is limited.** Reason: the distance to Francis Crick Avenue is short and could safely be navigated by all user groups.

**The east side of the station will not have direct bus connectivity. A short walk to bus services on Francis Crick Avenue is acceptable where vehicular access is limited.** Reason: the distance to Francis Crick Avenue is short and could safely be navigated by all user groups.

**The station entrance and access must ensure direct access to key nodes.** Reason: integration of the station within the existing urban environment with good access to local population and services.

**Reduced facilities (drop-off/pick-up, no general parking) on the east side of the station.** Reason: the provision of a station on the CBC would see a modal shift from cars to rail in line with predictions from the Department for Transport..

**Improve access to hospitals where possible.** Reason: the station would play a key role in improving access to the hospitals.

**Improve access to the biomedical campus.** Reason: the station would play a key role in serving the CBC and increased number of jobs.

#### Landscape and Public Realm

**Minimise impact on the green belt.** Reason: Principle to this is the preservation of the green corridor as an area of permanent openness from the city's edge towards its historic core.

**Minimise land-take within Open Space.** Reason: planning policy status, recognition as a 'green corridor' which contributes to the important characteristics of the city and is a key component for providing passive sport and recreation for amenity and biodiversity'.

**Minimise impact on Hobson's Park.** Reason: negative effect on green infrastructure.

**Minimise impact on Hobson's Conduit and its tributaries.** Reason: constructed between 1614 and 1620, and is a valued historic and wildlife resource.

**Manage rainwater and run off in an environmentally sensitive way.** Reason: local wildlife value and impact and minimise impact on existing watercourses, attenuation and ponds

**Minimise land take for construction and operation.** Reason: reduce impact on local community.

**Minimise impact on the Scheduled Monument.** Reason: the site of White Hill Farm revealed by aerial photography showed crop marks which have been interpreted as an Iron Age to Roman period settlement is a valued and protected resource.



### 3.3 Challenges and Opportunities

- 3.3.1 There are a number of challenges and opportunities presented by the site and its context as described in Section 2: Context. One of the key challenges in developing the design vision is the need to recognise, respect and respond appropriately to the existing context whilst developing a well designed station that meets the future growth needs at CBC and in the wider Southern Fringe whilst integrating well into the Green Belt and wider landscape setting.
- 3.3.2 Besides supporting the Project Objectives, the design vision and philosophy of approach for the proposed Development in developing the station concept has been to transform challenges into opportunities that demonstrate how the station could better serve those who work, live in and visit the area immediately surrounding it and beyond.



Figure 2-34: Cambridge Biomedical Campus aerial view

### 3.4 A Contextual Response

#### Landscape and the environment

- 3.4.1 Conservation of the character and form of the green corridor, Hobson’s Park and the open countryside to the south has been key in influencing the station’s location, external layout and form.
- 3.4.2 Principal to this is the preservation of the green corridor (forming part of Cambridge’s Green Belt) as an area of permanent openness from the city’s edge towards its historic core, achieved by placing the station tight up to the railway and by minimising its footprint and that of its associated infrastructure.
- 3.4.3 In addition, conservation and reinforcement of elements of the character of Hobson’s Park have shaped the how the station is integrated into its setting:
- 3.4.4 The station is situated behind the tree belt that runs on gently sculpted low mounds along the Park’s east edge.
- 3.4.5 As with the park’s existing gently sculptured earth mounds and the embankments of the bridges that cross the railway, the station and its infrastructure appear to rise from the Park.
- 3.4.6 The development’s external form, roofscapes and materiality reflect the semi-naturalised character of the park and appear to connect across the railway to the purposeful visual, and green, gaps between the CBC western buildings.
- 3.4.7 The layout of the station embraces the connection of the landscape with its watercourses by creating visually and biodiversity enriching swales and wetlands.
- 3.4.8 Promoting the station’s legibility through reinforcement of the series of ‘visual nodes’ that already exist through Hobson’s Park, Clay Farm and the green corridor.
- 3.4.9 To the south of Nine Wells Bridge the character of the open arable farmland predominates, and is used to shape the development:
- 3.4.10 Extensive new built form is avoided. Small scale buildings are set back from sensitive edges and are visually mitigated.
- 3.4.11 The existing field boundaries are retained and bolstered with new native hedgerows and tree belts.
- 3.4.12 Opportunities are taken to soften the existing visual detracting elements of the CBC and Nine Well Bridge
- 3.4.13 Hobson’s Conduit is conserved and its margins enhanced.
- 3.4.14 The setting of Nine Wells local nature reserve, its listed monument, and the Scheduled (site of White Hill Farm) monument are preserved.

#### Built environment

- 3.4.15 Good design is a key aspect of sustainable development, indivisible from good planning, and should contribute positively to making the station and its public realm a place for its neighbours, passengers and staff.
- 3.4.16 Located between the CBC and the Clay Farm residential development, the design of the station should aim to be of high quality whilst contributing as a visual amenity to the emerging urban context on both sides of Hobson’s Park.
- 3.4.17 This approach, sympathetic to its natural context and emerging modern neighbours, has been embedded with the concept of the station, ensuring it will have a high standard of design positively contributing to the Southern Fringe area and the Green Belt as a whole.
- 3.4.18 Within this Green Belt context, the station seeks to be an integral part of the natural landscape and support a connecting green network, enabling species migration and providing diverse habitats.
- 3.4.19 As such, the prevailing consideration in developing the station concept has been one that both maintains and enhances the quality of its important landscape setting whilst acknowledging the material palette of Clay Farm to the west, and that of the emerging CBC masterplan to the east.
- 3.4.20 Fully accessible to all users from street-level through to the platform environment, its architecture needs to be permeable within its context, formed as a contemporary, inclusive and functional quality packaged within a suitably scaled architectural envelop with complementing engineering required to provide the various volumes and spaces that comprise the station design.
- 3.4.21 The design concept uses this sequence of spaces to create a rational, uplifting and dramatic environment for everyone using the station and its neighbours on both sides of the railway, ensuring the station is connected to the communities it serves, providing a sense of place for passengers arriving and waiting at the station entrances which blend with the open public space it serves.
- 3.4.22 Maximising opportunities for urban greening whilst providing a high-quality place, the station will also provide suitable amenities such cycle parking, lifts, way-finding and connected spaces that are intuitive with careful consideration of desire lines both within and beyond the station.



# 4.0 CONSULTATION, ENGAGEMENT AND DESIGN DEVELOPMENT

## 4.1 Introduction

- 4.1.1 This section of the DAS sets out how the design process was conducted and evolved, forming options for station location which were then further developed to take into account of all project and stakeholder requirements prior to the final option selection sift.
- 4.1.2 Optioneering for the operational railway is included for information as a background to the chosen station location.

## 4.2 Consultation

- 4.2.1 The NPPF recognises the importance of early engagement with stakeholders and local communities in the preparation of development proposals, including design. NPPF paragraph 39 highlights the advantages of pre-application engagement and front loading. It states that ‘Good quality pre-application discussion enables better coordination between public and private resources and improved outcomes for the community’.
- 4.2.2 Network Rail undertook two rounds of consultation with a range of statutory consultees and non-statutory stakeholders, potential landowners and members of the public.
- 4.2.3 The Consultation Report provides a full account of the consultation undertaken for the proposed Development.

## 4.3 Design development

- 4.3.1 Design development has been undertaken in two phases; an initial concept design study undertaken over a wider geographical area to identify strategic layout options and interventions ensuring that the design adopts a holistic approach to the wider transport needs; an option selection phase to support the proposed Development’s consultation process to provide a single option for submission with this request for deemed planning permission and TWAO application.
- 4.3.2 Engineering solutions were developed for the preferred operational railway layouts which considered different station locations for a range of track layouts and geometry and were developed to ensure full alignment with the project objectives.
- 4.3.3 After a long list of options, three preferred station location options were selected and explored in the area between Addenbrooke’s Bridge and Nine Wells Bridge. With only about 600m separation between the two bridges, choosing a location for the station between them has very little impact to the operation of the railway or the railway infrastructure required.
- 4.3.4 Far more relevant to this proposed Development are the implications for the local area arising from access, the suitability of location for best serving key local destinations, key interfaces and

environmental impacts. The station options exercise considered locations in the following positions:

- North, near Addenbrooke’s Bridge;
- Central, mid way between the two bridges; and
- South, near Nine Wells Bridge

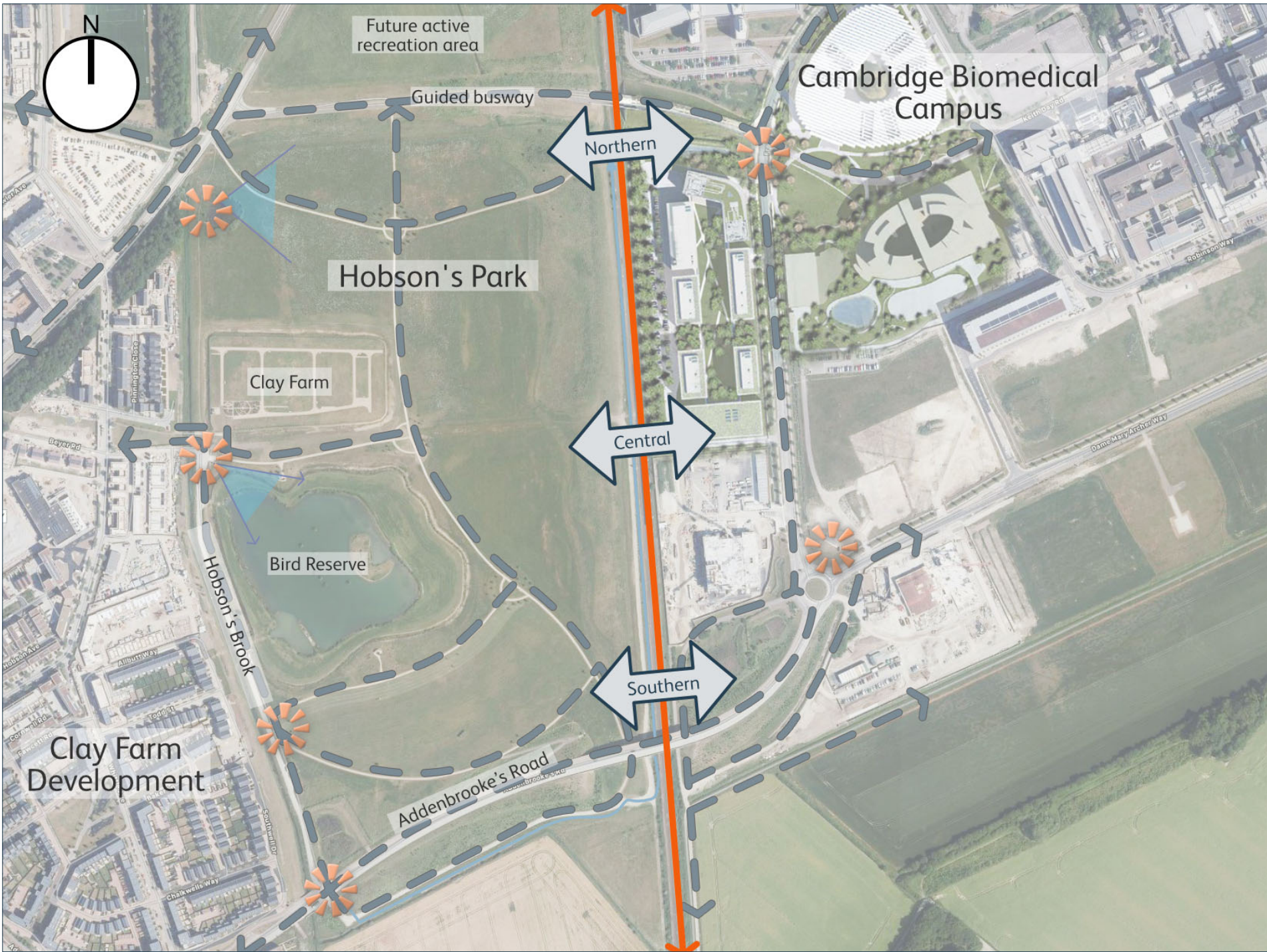


Figure 4-1: Location options



- 4.3.5 A first round of consultation was held between 20th January and the 2nd March 2020 which included information regarding the station location options and access arrangements. Whilst overarching funder and stakeholder considerations, in particular the amount of land used and potential construction disruption were considered when designing and selecting an appropriate track option, consultation did not seek stakeholder feedback on the track layout as this was deemed a technical-led selection process.
- 4.3.6 The benefits and disadvantages of the three options are summarised in Table 4 1.
- 4.3.7 Consultation with stakeholders and the public demonstrated a general preference for the northern station location. Of the three location options, it was the preferred location of 55% of those who responded, and many statutory stakeholders also expressed a preference for the northern station location for a variety of reasons.
- 4.3.8 Feedback from the University of Cambridge sums up the North Option preference well:  
  
*‘The University remains firmly of the belief that the northern option presents the best possible outcome for the campus, given:*
  - its ability to connect most directly into the heart of the established campus, to which the vast of staff and visitors will continue their journeys;*
  - the ability to co-ordinate and integrate most completely with the existing and proposed transport projects that interface with the campus; and*
  - that this option, in our view, presents the least impact upon the adjoining country park and green belt.’*
- 4.3.9 Concept proposals were then developed for the northern station location with further focused engagement with key stakeholders and potentially affected landowners to develop access arrangements to the station in greater detail. Once an illustrated concept had been developed, a second round of public consultation between 19 October and 29 November 2020 was held before the proposed Development consulted on the station proposals with the Cambridgeshire Quality Panel on the 10th December 2020.
- 4.3.10 The Panel had not previously reviewed the proposals, however, they had knowledge of the general proposal as a result of reviewing the adjacent AstraZeneca and Cambridge South East Transport (CSET) schemes. The advice and recommendations of the Panel reflect the issues associated with each of the four ‘C’s’ in the Cambridgeshire Quality Charter:
  - Community** : Places where people live out of choice and not necessity, creating healthy communities with a good quality of life;

- Connectivity** : Places that are well-connected enable easy access for all to jobs and services using sustainable modes;
- Character** : Places with distinctive neighbourhoods and where people create ‘pride of place’;
- Climate** : Places that anticipate climate change in ways that enhance the desirability of development and minimise environmental impact.

4.3.11 Network Rail is committed to working with GCSP and the Cambridgeshire Quality Panel to deliver a sustainable design solution which adheres to the four ‘C’s’ in the Cambridgeshire Quality Charter for Growth (Community, Connectivity, Character and Climate) and as such will seek the opportunity for ongoing engagement and a further presentation as the proposals develop in more detail.

Station option	Key Pros	Key Cons
North with road access from the east	<ul style="list-style-type: none"><li>Preferred by most stakeholders and public</li><li>Closest to key destinations/greatest passenger journey time benefit</li><li>DfT/funder preference</li><li>Smaller land requirement than southern</li><li>Avoids High-Pressure gas main</li></ul>	<ul style="list-style-type: none"><li>Site is most constrained (adjacent to AstraZeneca and drainage structures)</li><li>Marginal journey time impact (c. 2 seconds) for some non-stopping trains</li><li>Possible need for Temporary Speed Restrictions during construction (c.2 seconds of journey time impact)</li><li>Involves a more complex and slightly longer construction programme</li><li>Possible archaeological remains</li><li>Complexity of integration with busway extension (CSET)</li></ul>
Central with road access from the east	<ul style="list-style-type: none"><li>More space on eastern side</li><li>No marginal journey time impact for some non-stopping trains</li></ul>	<ul style="list-style-type: none"><li>Conflict with land to the east identified for future laboratory development.</li><li>Traverses High-Pressure gas main</li><li>Significant landowner security concerns over sharing access roads</li><li>Concerns around visual and access impact on park</li><li>Least popular at public consultation</li></ul>
South with road access from the west	<ul style="list-style-type: none"><li>No marginal journey time impact for some non-stopping trains</li><li>Sufficient space for bus turnaround facilities etc.</li><li>Avoids High-Pressure gas main</li><li>Less constrained option for construction and future growth</li></ul>	<ul style="list-style-type: none"><li>Strong stakeholder objections to western road access (including council planning department)</li><li>Greatest use of green belt land</li><li>Furthest away from campus destinations so smallest journey time benefit.</li></ul>

Table 4-1: Three preferred options



### 4.4 Development of illustrative proposal

- 4.4.1
- Whilst the environment, planning policy, site constraints, railway operational requirements, standards and guidelines establish the framework and principles for the development of the illustrative proposal, engagement and feedback from consultees and stakeholders have influenced key decisions regarding station footprint, facilities, form, layout, access arrangements and materials.
- 4.4.2
- Key stakeholder comments therefore that have impacted the footprint are noted in Table 4-2.
- 4.4.3
- In summary, the proposal provides public vehicular access from the east, pedestrian and bicycle connections from both sides of the railway and access arrangements within the station to the platforms.
- 4.4.4
- The resultant concept proposals are illustrated in Figure 4 2, Figure 4 3 and Figure 4 4.

Key

Pedestrian

Cyclist

Blue Badge Parking

Taxi/Drop Off

Bus

Emergency Vehicle

Maintenance Vehicle

Guided Busway Stop

Key Movement Node

Proposed/ Upgraded access routes

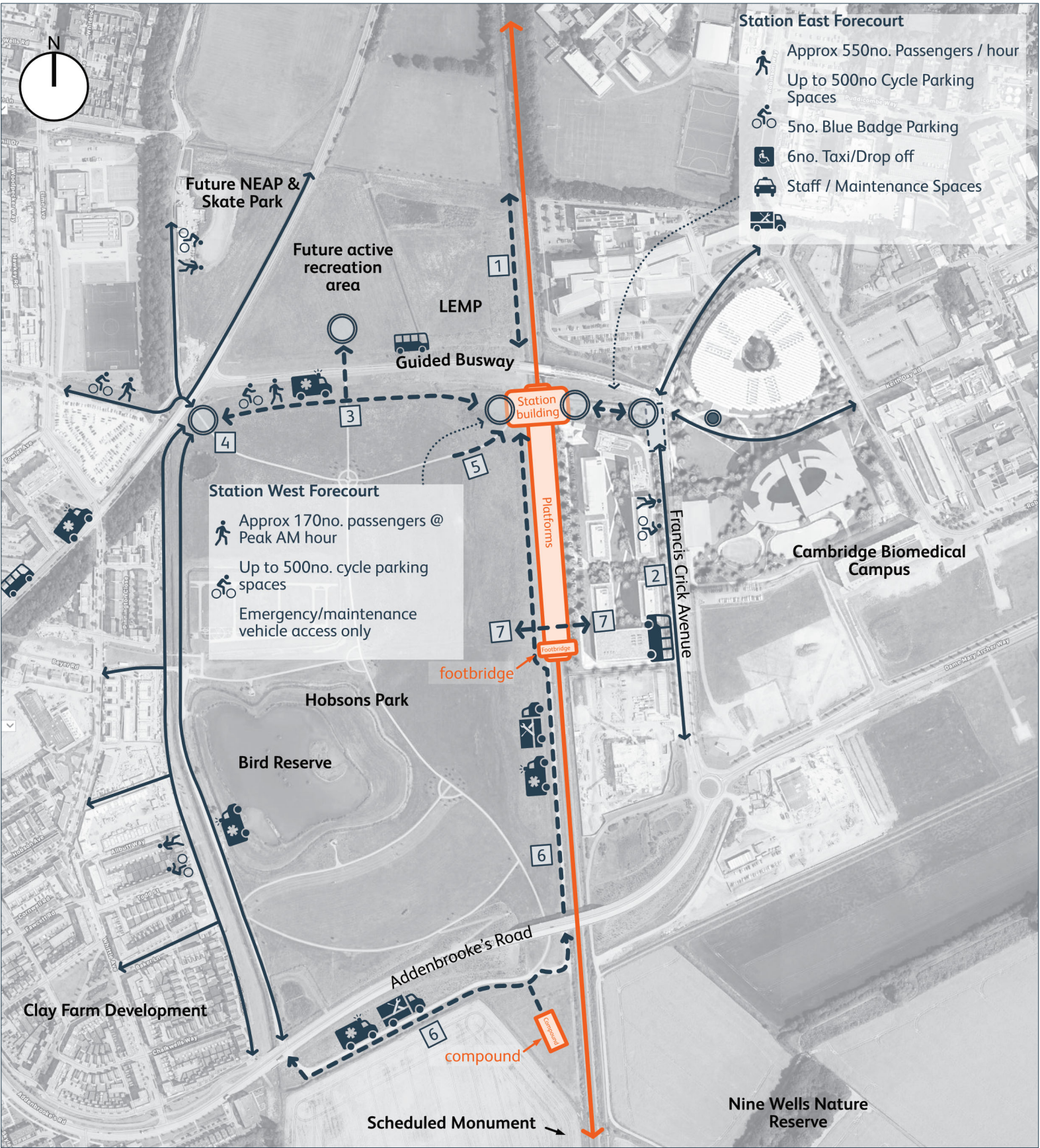
Existing access route likely to be used by station users

Interface with CSET & Sawston Greenway

Railway

1.
- Replacement maintenance and emergency access to active recreation area
2.
- Local bus and rail replacement stops on Francis Crick Avenue
3.
- Existing reinforced grass path realigned and upgraded to provide main pedestrian and cycle access and to be suitable for emergency vehicles.
4.
- New junction node to provide gathering point for station
5.
- Existing path slightly realigned and regraded to provide secondary pedestrian access to the station
6.
- Existing park access adjusted and resurfaced to provide station maintenance and emergency access
7.
- Emergency escape route from platforms

Figure 4-2: Access and movement concept masterplan





- Key**
- Structural Vegetation
  - Native tree and scrub planting
  - Watercourse
  - Enhance east-west ecological connectivity
  - Tree-lined rain garden collects surface run-off from station forecourt.
  - Railway
  - 1. Mid-attenuation basin re profiled, and sections tanked to allow formation of station forecourt.
  - 2. North Ditch culverted through station forecourt.
  - 3. North Ditch re-profiled for habitat diversity.
  - 4. Swales collect run-off from platforms and track.
  - 5. Surface water drainage basin collecting run-off from track.
  - 6. Enhanced riverine habitat along Hobson's Conduit
  - 7. Exchange open space land

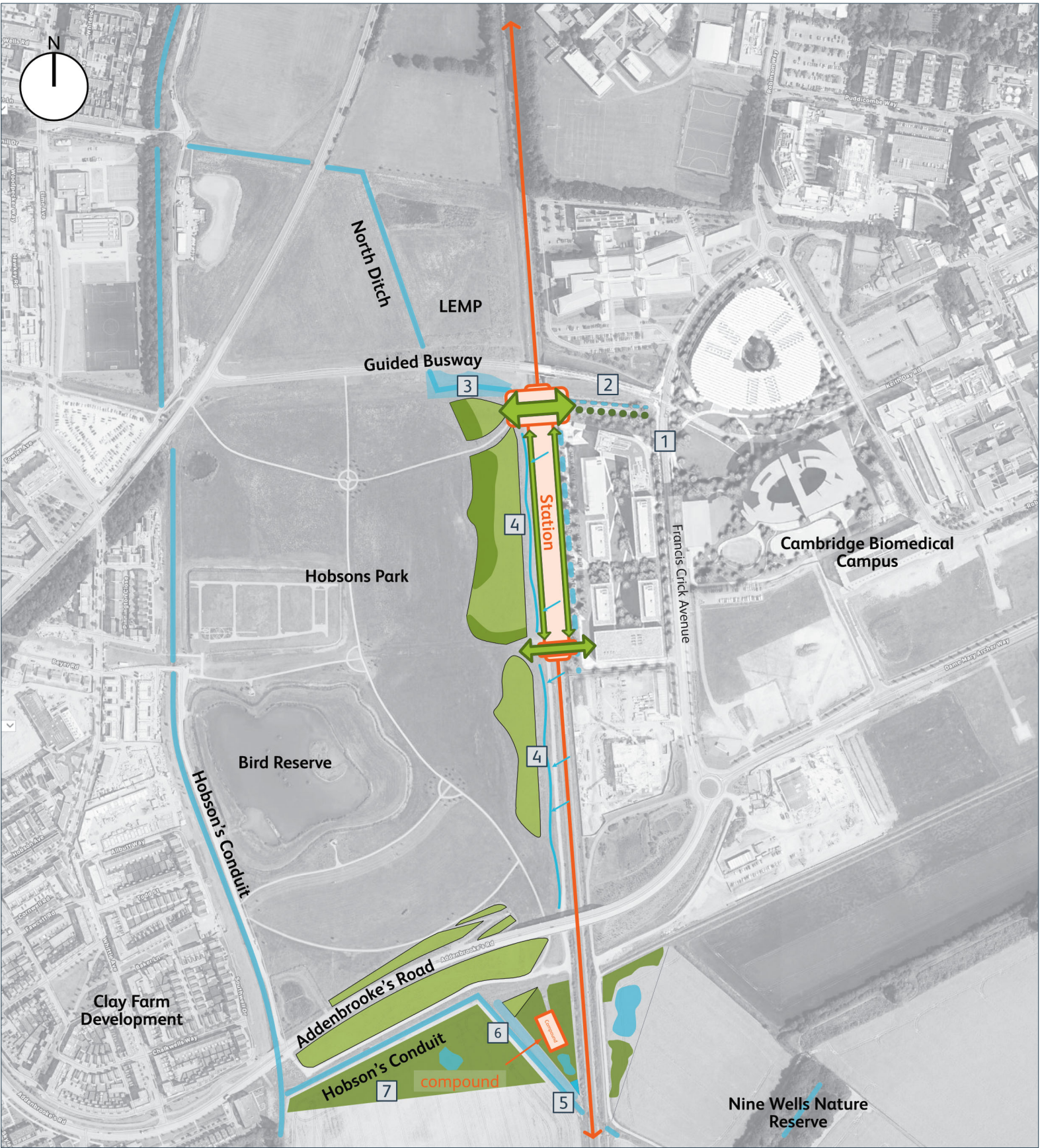
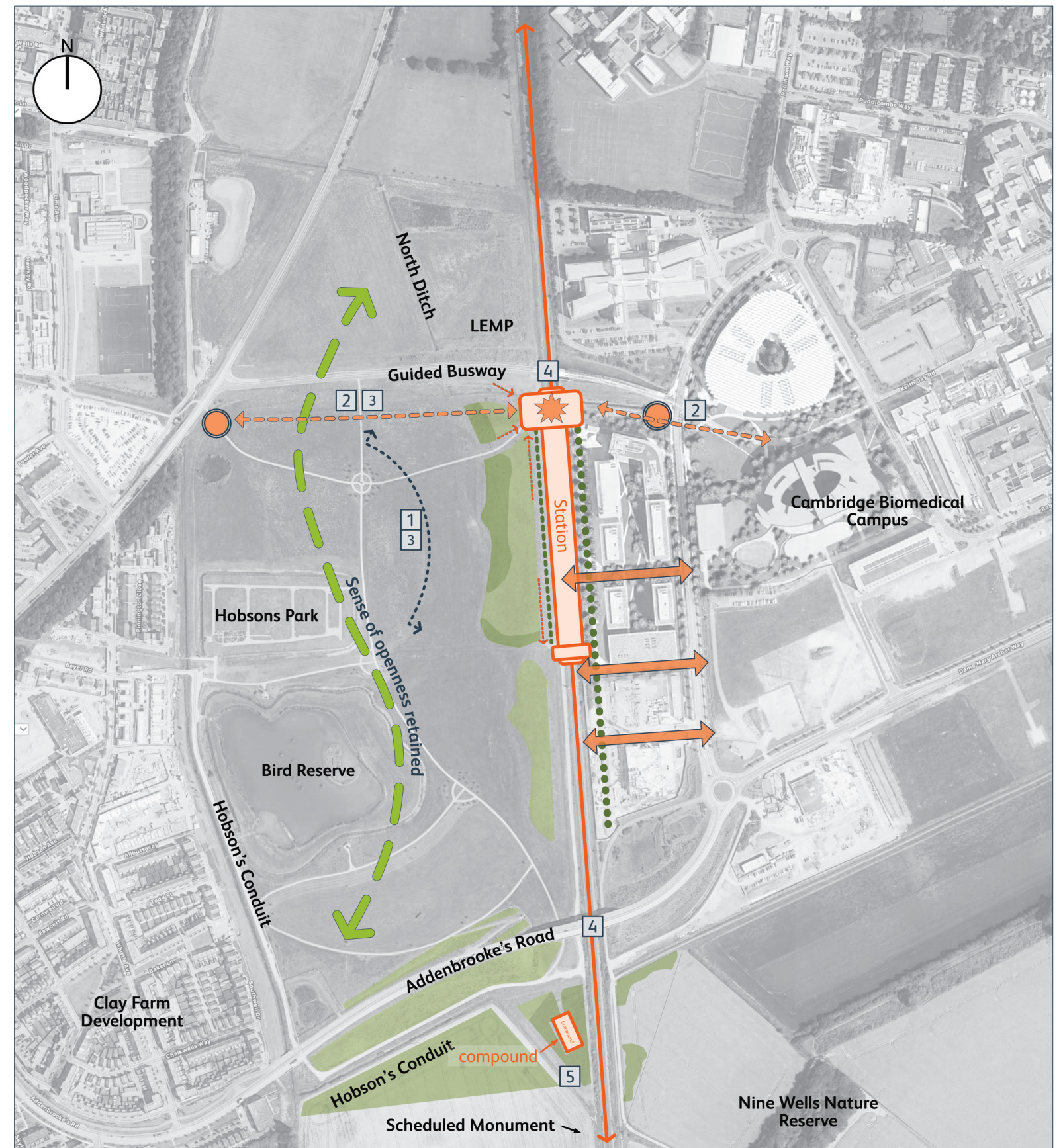
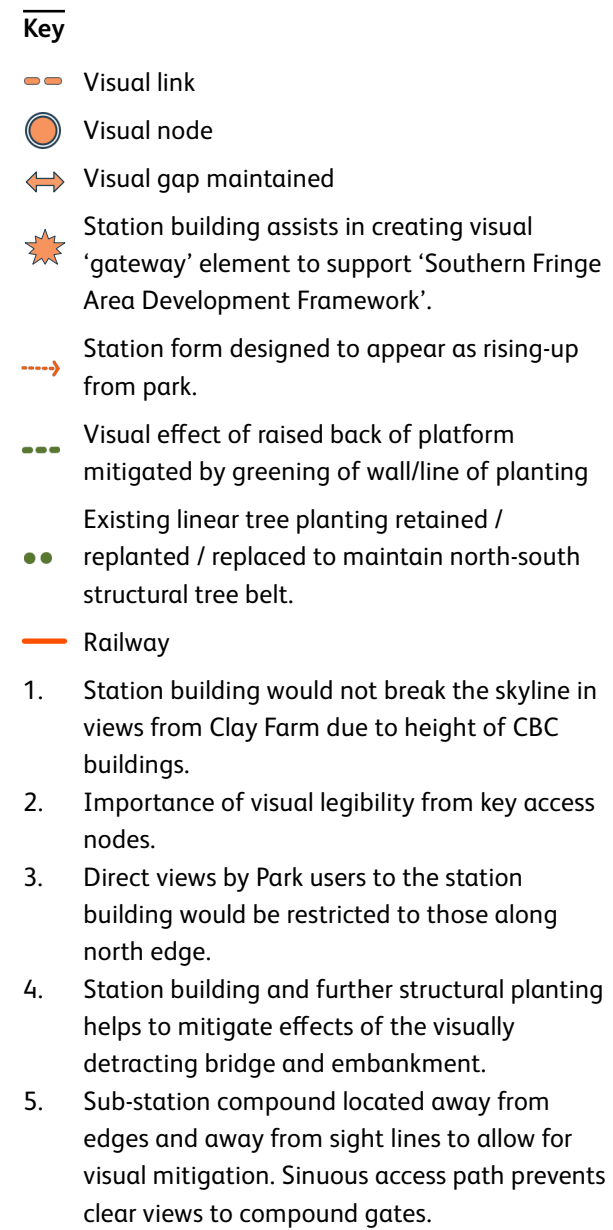


Figure 4-3: Townscape concept masterplan





**Figure 4-4: Station Masterplan Strategy**

**Table 4-2: Key Stakeholder comments that have influenced the station design**

Stakeholder	Detail
Cambridge University Hospitals	Centre of Campus will shift towards the South in the future due to future development planned for hospitals
Campus stakeholders	Cambridge Autonomous Metro proposed route abuts east of railway south of Nine Wells Bridge and onto Francis Crick Avenue - consider this interface
Campus stakeholders	Consider presence of attenuation pond, surface water drainage, high pressure gas main which supplies Cambridge and CBC
University of Cambridge	Effects of construction on Anne McLaren building - SE corner is very sensitive to vibration. Understand NR's intended construction methods for the proposed new station and additional rail lines, so that they can advise potential effects requiring mitigation.
Campus stakeholders	30m landscape corridor to maintain views to/from Hobson's Park; car parking can be located within this corridor, but no built structures allowed
Cambridgeshire County Council LLFA	Possibility of a by-law concerning Hobson's Brook. A 5m access strip may be required for maintenance.
Accessibility stakeholders Disability Cambridgeshire University of Cambridge Cambridge Hospitals Trust	Station toilets - Changing Places toilet provided, given profile of passengers accessing the station to reach hospital services
Sustrans	Would like to retain NCN 11 to the west under Nine Wells Bridge – segregated from vehicles, accessing directly onto Francis Crick Avenue existing cycle path
Trumpington Residents Association	Option B: We do not support the second southernmost cycle path in the option, strongly preferring sole reliance on the northernmost path immediately adjacent to the busway path which achieves minimal intrusion.
Councils - Highways	Request all options fully explored to retain NCN Route 11 under the bridge.
Astrazeneca	The South Plot Office Building/Enabling Building will require a clear 5m space around the building for cleaning and maintenance as well as HV cable (2m) and foul pipe route.
Astrazeneca	The AZ site is open for anybody to walk through. Will there be a buffer between the station and the AZ South Plot parking and loading areas which are considered back of house?
British Transport Police	Consolidate cycle storage, e.g. in a fenced cycle compound - minimise maintenance and maximises security, less thefts
Cambridge City Council	Option B: The mouth of the North path closest to Guided Busway is too wide, not needed, keep same width where it joins. Start at the west end of Guided Busway where it's more level.
Built Environment Access Panel	Feedback from panel to consider two lifts per platform instead of one lift. Contingency against lift breakdown.
Built Environment Access Panel	Site and station location situated in an exposed area subject to harsh weather conditions, consideration for passenger and station user well-being.
CTC, Sustrans, cycling officers	Provide secure cycle parking on both sides of the railway
Cambridgeshire County Council, cycling team	Spaces for handcycles, recumbents and trikes – These have different requirements to regular cycles. No distinction is drawn between the types, as they are all outsize bikes and all require more space. Almost universally they have integral stands, and so the best method to accommodate them is a secure hoop buried in the floor to which a chain can be secured. See photos of the Cambridge Queen Anne car park - attached. Use of hoops mean that the space will not be taken by regular cycles which are not easy to secure to a ground anchor point.
Cambridgeshire County Council, cycling team	Spaces for cargo bikes, trailers etc – As above. Use ground anchorage points. In terms of numbers, I guess about 30 is appropriate looking at the level of use in the main Cambridge Cyclepoint. There will be use by folk dropping children off at the nearby nursery and making an onward train journey so maybe additional provision for these customers should be considered.



**Table 4-2(cont.): Key Stakeholder comments that have influenced the station design**

Stakeholder	Detail
Cambridgeshire County Council, cycling team	Types of secure storage facilities – There needs to be a mixture. Security is an issue and so a proportion (40 % ?) could be enclosed in a fob entry type cage as successfully used at Ely Station . Some users find this provision to be undesirable due to personal security concerns whilst in the cage. Consultation with end users is therefore advised.  All provision needs to be expandable to cater for future demand.
Cambridge City Council, Equality Officer for DIA consultation	Consider providing baby changing facilities in male and female toilets to cater for all child care providers and the possibility for a quiet space for breast feeding and a prayer room, depending on space.
Camcycle, CTC Cambridgeshire	Sheffield stands best overall support for all types of cycles when installed properly. Sheffield stands are important for people who cannot use the two-tier racks. Embed the stands in a concrete floor. Each Sheffield stand is centred in a rectangle measuring 2m by 1m, providing two cycle parking spaces. Sheffield stands must be placed at least 0.6m away from any wall and 1m away from each other. More information is available in the Cambridge Cycle Parking Guide, including angled cycle parking.
Camcycle, CTC Cambridgeshire	Aisles and access Aisles must allow at least 3.6m between Sheffield stands Movement Think about swept path of people with cycles in busy passageways and minimise conflicts. Ramps 5 % is the maximum slope, to enable accessibility and inclusivity.
Camcycle, CTC Cambridgeshire	Two-tier racks Must have gas-assisted lifting struts to help people lift bikes. Must have stand-welded locking loops for people to lock their frames. Must have centre-to-centre lateral spacing of at least 0.4m. Must have aisle widths of at least 2.5m, or 3.5m in busy aisles. Must have 2.8m to 3.0m ceiling height in the room, at least. Must NOT have Sheffield stands on the lower tier; they obstruct the upper tier. Must NOT be the only type of cycle parking.
Camcycle, CTC Cambridgeshire	Larger cycles - allocate 5 % of space as a starting point Refer to Design Manual for Roads and Bridges, CD 195 section E/2, ‘Cycle Design Vehicle’ Allows for cycles of up to 2.8m length and 1.2m metres width. Any lifts meant to be used for inclusive access should be able to accommodate the Cycle Design Vehicle, preferably with a ride-in, ride-out access. Aisles and passageways must accommodate these larger cycles.
Camcycle, CTC Cambridgeshire	A key distinction between ‘larger cycle’ space and ‘inclusive cycle’ space: the inclusive cycle space should have a dismounting area on the side (it can be shared with adjacent spaces) where people unpack their walking assistance. Preferably make it possible to enter & exit inclusive cycle parking spaces ‘by moving forward’ because many cyclists with disabilities cannot reverse out.
Round One Consultation Response	Can it be also a green station - why not integrate gardens and shrubs in a way that is compatible with train safety, but also showcases a more integrated station design with local environment. The site is ideal for this with new planting etc around, and the station could be a seamless development of this, rather than just a standard station. For instance how about a green roof? Or like the Guided Busway, flowers and grass on the tracks?
Round One Consultation Response	There should also be the opportunity for the station to have an extensive green roof or solar panels, pierced only by light wells for the platforms beneath.
The Wildlife Trust for Bedfordshire, Cambridgeshire & Northamptonshire	We consider a much stronger commitment should be made at this stage and all the way through the process, to avoiding, minimising, mitigating, and as a last resort, compensating for all potential ecological impacts. Network Rail should commit to delivering a measurable net gain in biodiversity of at least 10 % through this (and all) projects, and this should be demonstrated through the use of a recognised biodiversity impact assessment calculator.



Table 4-2(cont.): Key Stakeholder comments that have influenced the station design

Stakeholder	Detail
Natural England	Our advice is that the EIA should assess the potential impacts of scheme options. The ecological mitigation hierarchy should be applied to ensure that adverse impacts on the natural environment are avoided wherever possible, including impacts to locally designated sites such as Nine Wells nature reserve and Hobson’s Park. Any adverse impacts should be appropriately mitigated, taking advice from relevant stakeholders including the Wildlife Trust and council ecologist/s. The scheme should seek to deliver biodiversity net gain in accordance with paragraph 170 of the National Planning Policy Framework (NPPF) including an appropriate contribution towards the Combined Authority’s plan to double nature across Cambridgeshire.
Round One Consultation Response	Given that biodiversity net gain is a NR standard, EIA needs to quantify and quality mitigation to reach a net gain outcome, consult with Natural England and agree with NE the metric to be used and the appropriate level of gain, recalculate the habitat gains created through mitigation, e.g. landscape planting and any proposed ecological compensation sites, consider ways to deliver e.g. hold partnership discussions to deliver habitat creation of appropriate habitats in the local area, also consider If unable to achieve on site mitigation alternative method such as investing in habitat banking for the required number of biodiversity units through an organization such as the Environment Bank.
Cambridge County Council	The Council considers that vehicular access to the station should be from the eastern side of the railway, avoiding as far as possible encroachment onto the green belt land to the west other than as required for the platforms and tracks.
University of Cambridge	We welcome proposals to fully assess the impact of the station on the local greenspaces and biodiversity and how any impact on the adjacent country park can be minimised.
Round One Consultation Response	In addition, the chosen option must seek to avoid, minimise, mitigate and compensate for all losses and disruption to Hobson’s Park. Hobson’s Park was provided as a strategic greenspace as part of the sustainable development of the Cambridge Southern Fringe. There should therefore be no permanent loss of or reduction in the amount and quality of the greenspace arising from the station development.

## 5.0 DESIGN

### 5.1 Layout

- 5.1.1 Cambridge South is a proposed new station located between Shepreth Branch Junction and Cambridge. To facilitate the operational requirements of the wider rail network a four-platform station and associated railway infrastructure is proposed. This would require the existing two track railway to be increased to a four-track layout throughout the station including associated railway system provisions such as track, signalling and control systems, switches and crossings, and overhead line equipment and control. In addition to enhancements to the existing network infrastructure at Shepreth Branch Junction to permit the line speed through the junction to be increased from 30mph to 50mph.
- 5.1.2 The works at Shepreth Junction impact on Webster's and Duke's level crossings. Level crossings are a considerable safety risk on the rail network therefore it is proposed that these crossings are closed. A private accommodation bridge crossing Hobson's Conduit would be provided as an alternative means of access to a parcel south of Addenbrooke's Road; this access and bridge are to facilitate the closure of these level crossings. This bridge will be directly opposite the junction off Addenbrooke's Road onto the access track to Hobson's Park that crosses below Nine Wells Bridge.
- 5.1.3 North of Duke's Level Crossing a fenced rail systems enclosure would be located in a triangular plot south-west of Nine Wells Bridge. This plot is bound by the railway to the east and Hobson's Conduit to the south and west. Access to this area would be provided from the north via the route of the existing maintenance vehicle track which runs to the west back to Addenbrooke's Road. Near to the enclosure will sit a smaller fenced electrical substation, which will have a parking space for one maintenance vehicle.
- 5.1.4 The position of the railway systems compound has been established to minimise the distance from the track, whilst also ensuring that adequate space provision has been made to allow effective landscaped screening to be provided. There are two buried service routes (utilities) running east to west across the triangular plot, which the enclosure and electrical substation would be positioned to avoid.
- 5.1.5 The eastern boundary of the enclosure has been established by allowing space for a future four-track railway with a line side access route, which provides the four-track railway fence line. A further 10m clearance to the enclosure has been provided to allow for landscape planting to provide some level of screening of the enclosure. On the south west boundary with Hobson's Conduit, a 15m strip of land has been allowed for effective landscape planting, following the line of the Brook.

- 5.1.6 From a point just south of Nine Wells bridge, heading north, the railway increases from a two-track layout to a four-track layout requiring the existing railway corridor to be increased on both the east and west sides into Hobson's Park and the southern AstraZeneca campus.
- 5.1.7 The platforms of the new station would be positioned between Addenbrooke's Bridge and the easement of the High-Pressure gas main that crosses under the tracks mid-way between Addenbrooke's Bridge and Nine Wells Bridge with the station building to the north and a footbridge located to the south.
- 5.1.8 The widening of the railway corridor continues north through the location of the proposed station and returns to the existing two-track layout mid-way between Addenbrooke's bridge and Long Road bridge.
- 5.1.9 To accommodate access to lifts and buildings, platforms of the new station would be positioned such that there is a non-operational section of the platform to the northern end between Addenbrooke's Bridge and the easement of the High- Pressure gas main that crosses under the tracks mid-way between Addenbrooke's Bridge and Nine Wells Bridge.
- 5.1.10 The new station would be arranged in the form of an island platform and single platforms on either side. The station building would consist of two buildings, one to the east and one to the west, connected by an over bridge. The east building is located within an existing area of grassland bound by the existing railway, the AstraZeneca South Campus, Francis Crick Avenue and Addenbrooke's Bridge. The northern most section of the platforms would be non-operational (trains will not stop in these locations), this is to maximise the width of the operational width for the island platform, so that it can accommodate stairs and lifts from the station over bridge location, which has been defined by the available areas to the east of the railway for a station building, whilst also providing access directly from the station buildings.
- 5.1.11 To the southern end of the platforms, a footbridge would be provided to assist interchange between platforms and provide a secondary means of escape. Its location is defined by required escape distances from the end of the platforms. Step-free escape routes would be provided at the southern end of platforms 1 and 4 with a safe passenger refuge point provided to the central platform.

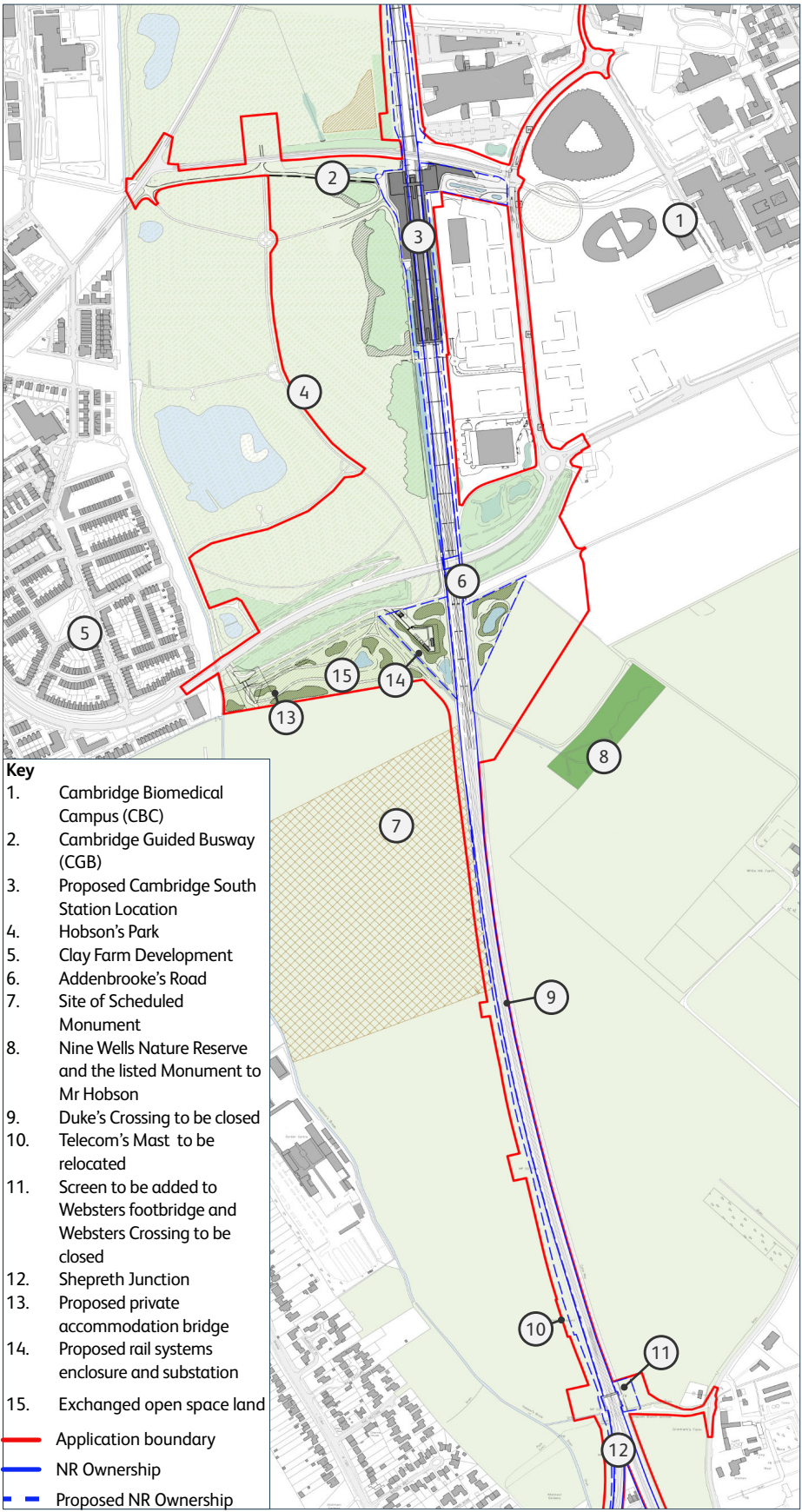


Figure 5-1: Proposed Site Plan



## 5.2 Access

### To the station

- 5.2.1 Access to the station would be provided from both the east and west of the tracks. To fully integrate the station within the existing urban environment, with good access to local populations and services, the station entrance has been designed to provide direct access to and interchange with key transportation modes. Station access has been designed to prioritise sustainable onward journeys for passengers using the station.
- 5.2.2 Vehicular access would be provided from Francis Crick Avenue on the east immediately south of the junction with the road and the CGB. The access road would be integrated with the existing signalised junction. No general car parking would be provided; however, five parking bays for Blue Badge holders, and six passenger and taxi drop-off/pick-up bays would be provided, together with staff and maintenance parking (two bays each).
- 5.2.3 Cycle and pedestrian access would be from both the east and west, with cycle parking provided on both sides of the railway. This is to ensure that cyclists and pedestrians do not have to take a circuitous route to access the station from surrounding developments and would maximise the benefit of the station for the local community.
- 5.2.4 The existing route beside the CGB is a shared-use pedestrian and cycle path that can be heavily congested. In addition, it is not wide enough to safely accommodate the additional movements that the station will generate.
- 5.2.5 As part of the western access a shared pedestrian and cycle path would be provided through Hobson's Park approximately parallel to the CGB, providing a direct link to Trumpington. The existing crossing over the CGB that connects the Trumpington residential area and Hobson's Park and adjacent section of the shared use path on the western side of the Guided Busway would be widened to accommodate additional pedestrian and cycle movements.
- 5.2.6 To the east, a pedestrian and cycle access would be provided north of the access road, providing a direct access to the public realm of the Circus plaza on the east side of Francis Crick Avenue and destinations within the CBC. Passengers would cross via the existing signalised crossing on the southern arm of the Francis Crick Avenue/ CGB junction. A pedestrian access route would also be provided south of the station access road, adjacent to the northern boundary of the AstraZeneca site.
- 5.2.7 The existing crossing on the southern arm of the Francis Crick Avenue/ CGB junction would be widened to accommodate additional pedestrian and cycle movements between the station and trip attractors and generators within the CBC.

- 5.2.8 Bus interchange would potentially be via bus services on Francis Crick Avenue and also the CGB stops opposite Royal Papworth Hospital. Rail Replacement Bus services could potentially be provided utilising existing bus stops along Francis Crick Avenue, subject to agreement with relevant stakeholders.
- 5.2.9 The existing maintenance track beside the railway in Hobson's Park will be relocated a short distance to the west to allow space for the widened track into the station. It will allow emergency service and maintenance vehicles to access the western station building. In doing so the proposed Development aims to clearly define boundaries of land ownership and maintenance responsibility, but without adverse impact on the Park.
- 5.2.10 The proposed layout incorporates areas for maintenance vehicle parking subtly within the landscape scheme (i.e. with subtle material change, multi-purpose site furniture, etc.) rather than highlighting their existence (i.e. with turning heads, distinctly different materials, fences etc.).
- 5.2.11 A Transport Assessment (TA) has been produced to support the Environmental Impact Assessment and subsequent Environment Statement which forms part of the TWA0 application.

### Inclusive Access

- 5.2.12 The Equality Act 2010 aims to prevent discrimination and ensures that everyone has equal opportunities regardless of age; disability; sex; gender reassignment; pregnancy and maternity; race; religion or belief; sexual orientation; and marriage and civil partnerships to promote a fairer society accessible to everyone. Section 29 makes it unlawful for a service provider to discriminate against a person.
- 5.2.13 The design of the proposed station has been informed by a Diversity Impact Assessment to ensure compliance with Network Rail's duty under the Equality Act 2010. The station building has been designed to support access to all users, including those with protected characteristics.
- 5.2.14 The proposed Development would be designed to the European and National Standards as required by the DfT document Design Standards for Accessible Railway Stations<sup>2</sup> (DfT ACOP).
- 5.2.15 The following describes interventions that have been included within the proposals to ensure that the proposed Development provides a positive impact on diversity and inclusion:
- Clear and consistent signage in the surrounding area (to be agreed with appropriate stakeholders).
  - Ticket barriers on the concourse would include wheelchair and pushchair access.
  - The proposed station overbridge has been designed to ensure safe and convenient access to the platforms for all users through the provision of lifts in addition to steps.
  - The path to Francis Crick Avenue would have clear markings for pedestrians and cyclists, and the footway and the road would be at the same level or with a lowered kerb to benefit wheelchair users. For people with visual impairments, a strong tonal contrast between the footway and carriageway or tactile paving would be provided.
  - A raised pedestrian crossing is to be provided across the station access road ensuring vehicles leaving and entering the station have to give priority to pedestrians.
  - On the west side - Hobson's Park - the proposed Development would provide a lit, level access path from the CGB suitable for all users, in particular users of mobility aids. Demarcation of this path as a shared path/segregated path would be to national best practice guidelines.
  - Modifications to part of an existing path will be required so that its users can access the station. These modifications involve raising and realigning the northern part of the path where it approaches the station forecourt to bring it up to the same level

<sup>2</sup>The DfT ACOP V4 can be found at <https://www.gov.uk/government/publications/accessible-railway-stations-design-standards>. Where Standards referenced by this document have been revised the later have been referred to.

- as the forecourt – this would be achieved without the use of steps as that would increase the urbanisation of the Park, it would be a barrier for wheelchair users and people with reduced mobility and would compromise the Access for All principles, and therefore was not a desirable option.
- Although no general parking would be provided, parking bays for Blue Badge holders and passenger pick up/set down and taxi bays would be provided with lowered kerbs or level access with the road.
  - Help points would be provided on the east station forecourt and platforms.
  - In addition to spaces for larger sized cycles, dedicated, secure spaces for ‘of gauge’ cycles such as handcycles, recumbents and trikes which are typically longer and wider than standard two-wheeled bicycles would be provided.
  - Clearly marked help points would be positioned at prominent locations within the station. Samaritans signage would be provided at each help point to encourage vulnerable people to seek help.
  - The configuration of passageways and corridors, the design of the platforms and the position of stairs and lifts would be carefully considered during detailed design for flow of passengers and to ensure that surveillance throughout is maximised, avoiding the creation of isolated areas and vulnerable points of access to the network or places where at-risk people might hide prior to making a suicide attempt.
- 5.2.16 Lifts will provide step-free access from pavement to platform, onto the train (with staff support if needed), benefitting all users but particularly those with pushchairs, older people, those with reduced mobility and those with visual impairments; these groups may also benefit from assistance by trained station staff.
- 5.2.17 Two lifts to access each platform would be provided for additional resilience.
- 5.2.18 Dedicated space for wheelchair users would be provided in addition to a mixture of seating options, at standard or perch levels, with or without arms etc., within each waiting area.
- 5.2.19 In addition to accessible toilets, a Changing Places toilet would be provided.
- 5.2.20 A separate baby change facility would be provided.
- 5.2.21 The footbridge and over bridge between the station buildings will have higher parapets or be fully enclosed.
- 5.2.22 The station would be designed to be as safe as possible for all users.

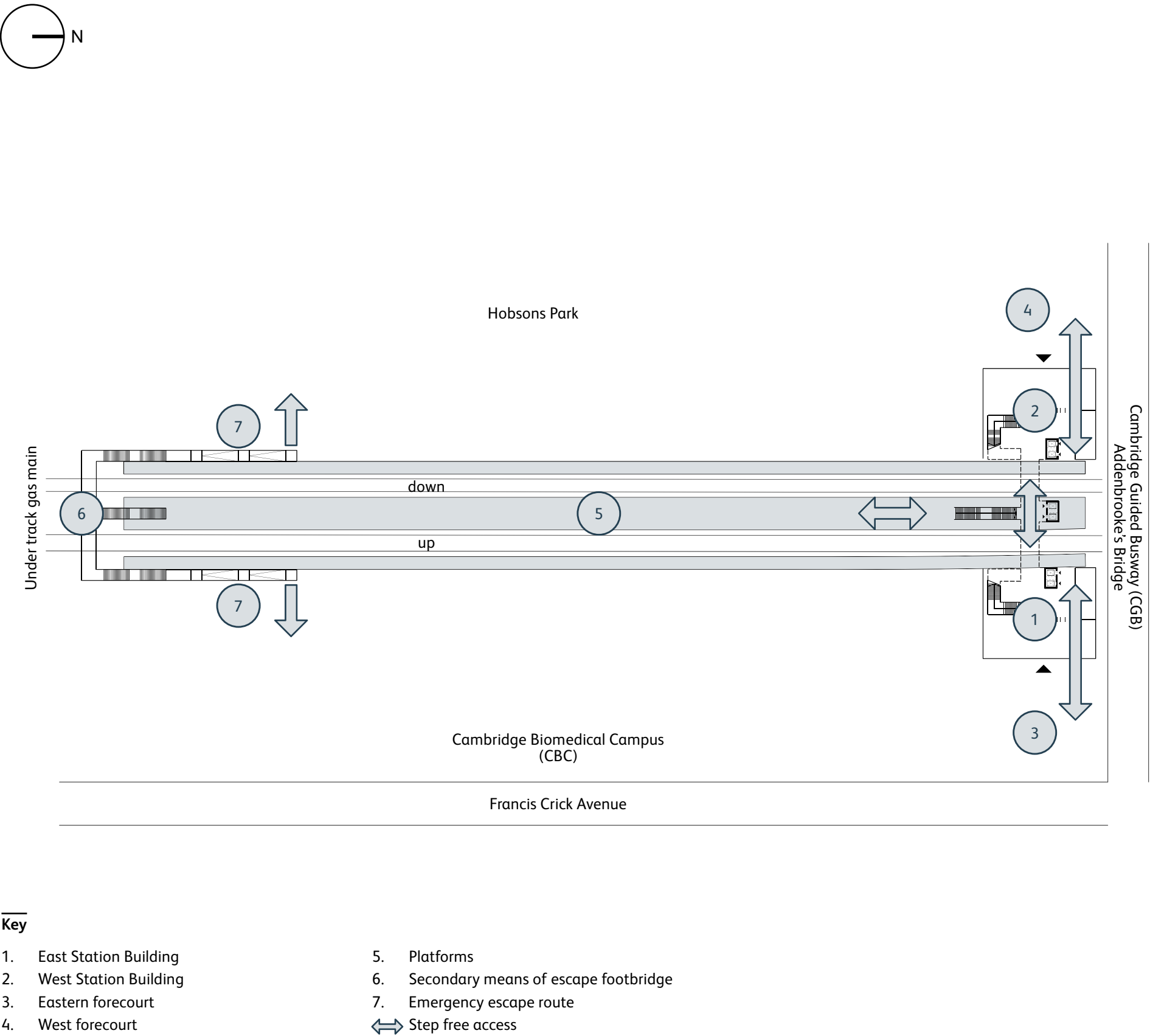


Figure 5-2: Proposed Station Key plan



## 5.3 Landscape

### East Side (Francis Crick Avenue)

5.3.1 The landscape design objectives for the approach to the east side of the station are that it should provide:

- A visually clear and legible route for all users to and from Francis Crick Avenue and NCN 11.
- Strong east-west green infrastructure connectivity.
- A palette of hard and soft landscape materials which is complementary to those being used within the Circus green space (on the opposite side of Francis Crick Avenue), and those planned for the adjacent AZ estate.
- Compensation for the loss of the landscape amenity currently provided by the North Ditch, the attenuation basin and surrounding native structural planting.

5.3.2 The design elements necessary to achieve this are:

- A broad tree lined path for pedestrians and cyclists arriving from Francis Crick Avenue, with space for seating between the trees for those awaiting pick-up, and planting beds to assist with surface water run-off.
- A central median between the in and out vehicular paths to the station building which is shaped, planted and built-up to provide a 'rain garden' for the storage and slow discharge of carriageway surface water run-off.
- A native species hedgerow between the station approach and the AZ estate to the south, to help define this boundary and to help visually integrate any necessary security fencing.
- A roof-scape to the station building and to the cycle parking covering the structure are suitably shaped and covered to integrate with the busway embankment.
- Way-marking and signage which are planned and positioned clearly outside the station building entrance, near to the drop-off points and at Francis Crick Avenue to guide people safely and efficiently to the station or onward to destinations within the CBC.
- Provision of street furniture which is multi-functional (i.e. which, alongside its primary function, provides additional functions such as security),

### West Side (Hobson's Park)

5.3.3 The landscape design objectives for the approach to the west side of the station are that it should provide:

- A clear, safe and legible route for all users to and from the station's entrance the 'visual node' created at the junction of the CGB spur and its main route, NCN 11 and the edge of the Clay Farm neighbourhood.
- Strong north green infrastructure along the east edge of the park in addition to east-west connectivity to the CBC.
- A palette of hard and soft landscape materials which is complementary to those being used within Hobson's Park and elsewhere within the green corridor.
- Compensation for the loss of the habitats removed to allow for construction and operation of the station.
- Integration with the existing watercourses and the development's necessary storm/surface water drainage.

5.3.4 The design elements necessary to achieve this are:

- An enhanced environment to the North Ditch between its crossing under the Addenbrooke's Bridge embankment and the Station – with a more varied riparian habitat, space for flood attenuation and opportunity for Park users to visually interact with it.
- A modestly sized station forecourt that provides sufficient space for users to await others (with a small number of station-facing benches) and make decisions regarding onward journeys (with way-finding elements), and which allows clear movement of both pedestrians and cyclists through it (i.e. with suitably signage and materials to imply segregation)
- A landform that gently rises from the Park to provide step-free access into the Station, upon which the existing and new paths are laid out.
- A pedestrian and cyclist path that stretches from station's entrance to the 'visual node' created at the junction of the CGB spur and its main route, NCN 11 and the edge of the Clay Farm neighbourhood. Details of the surface to be agreed later and to tie in with cycle path being put in by Countryside Properties on the west of the park.

- Replacement and new native tree and scrub planting (species to match the existing) along the existing line of tree belts within the Park upon these mounds.
- A biodiverse roof upon the station buildings and its associated structures (cycle storage area, platform canopies and footbridge canopy), which helps to integrate the building into its setting.
- A hedgerow between the rear of the down platform and the Park to visually integrate the platform structure into its setting and reduce the risk of graffiti upon its vertical surfaces.
- A reinforced grass path, along the line of the existing park maintenance track, providing access for station maintenance and emergency access.
- A surface water swale with a planted/seeded trapezoid cross-section running parallel with the railway between the station and Nine Wells Bridge.

5.3.5 To the south of Nine Wells Bridge the landscape design elements necessary to the project objectives are:

- A native tree belt surrounding the railway system's compound to visually integrate it into its setting – particularly in views along the railway, along the Genome Path cycle way and from Nine Wells Nature Reserve.
- An margin between this and Hobson's Conduit that provides enhanced riparian habitat.
- A new area of publicly accessible open space, south of Hobson's Brook, accessed by a new agricultural accommodation bridge, and containing native hedgerow, scrub / copses, and an enhanced margin along the watercourse

5.3.6 A mosaic of native tree and shrub planting, woodland edge habitat and species rich wet grass land around and within the storm water attenuation basin.





Figure 5-3: Example of seating around feature trees.



Figure 5-6: Example of planting



Figure 5-9: Example of landscape place making potential.



Figure 5-4: Example of seating used to form a controlled interface with habitat creation.

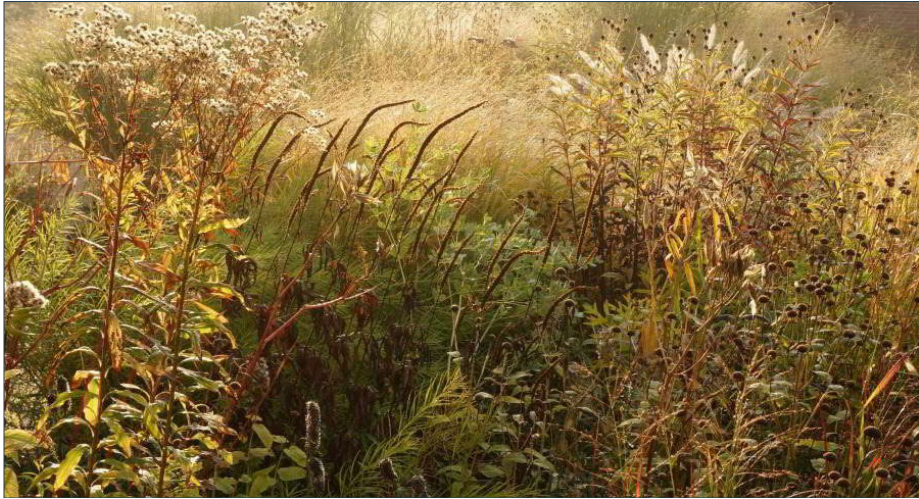


Figure 5-7: Example of multiple season planting.



Figure 5-10: Example of weathered steel bollards with integrated down lighting.



Figure 5-5: Example of the proposed access boundary treatment with the AZ Campus.



Figure 5-8: Example of attenuation planting proposed.



Figure 5-11: Example of a landscaped cycle parking canopy with controlled lighting.



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## 6.0 STATION DESIGN INTENT

### 6.1 Introduction

- 6.1.1 The main drivers for the station building layout and massing are its users, the facilities they need, planning and environmental policies, its landscape context (refer to Section 5.3), stakeholder consultation (refer to Section 4.3: Design development), clearances required from overhead line equipment (OHLE), operational requirements, passenger capacity and access to and within the station. The following sections provides more detail.
- 6.1.2 Preliminary station building and structures design has been undertaken to support this application, demonstrating and validating the footprint and massing required, justifying spatial provision for operations, passenger capacity and growth, interchange and connectivity to and from the station, and of course to support consultation with stakeholders.
- 6.1.3 The proposals developed at this stage are therefore indicative of a feasible scheme based on client requirements and stakeholder feedback, demonstrating the footprint and massing required to support an operable, safe and accessible station. In addition, their form and materials would reflect their setting within Hobson's Park, the Cambridge Green Belt and the CBC.
- 6.1.4 The design approach in developing the station building has been to establish a site-specific language that both describes what the building is, where you are and where you need to go.
- 6.1.5 The station layout resolves to the constraints of the site boundary to bridge the widened railway formation and incorporate current railway operations and regulations, facilities associated with a Category C<sup>3</sup> modern-day station and means of treating public safety issues and vandalism etcetera, with the aim of carefully forming a well-informed and well-designed station environment.
- 6.1.6 Activities that have informed the footprint and massing include site analysis, identifying interfaces and engineering coordination of key elements, consultation, preliminary accommodation schedules, passenger capacity and the development of design principles and visualisations for what a station in this location could look and feel like. These activities also provide the evidence base for land and access requirements, works activities and key third-party interfaces.

<sup>3</sup> Railway stations in the UK are classified into six categories by the DfT based on the frequency of usage and complexity of interchange. A category C station is and 'Important Feeder' in a suburban location. For further information refer the DfT Better Rail Stations report 2009.



## 6.2 Station Building Layout

- 6.2.1 Through stakeholder consultation it was identified that two lifts per platform should be provided for additional resilience given the proximity to local hospitals.
- 6.2.2 Due to the constraints of the adjacent Guided Busway Bridge (Addenbrookes Bridge), the width of the island platform is not sufficient to provide two Network Rail-compliant lift cars; however, being located to the end of the operational platform where public access is not required, the lift shaft can be offset to provide access (for maintenance) to one side only and therefore increase the available width for two lifts to be provided.
- 6.2.3 This arrangement of the lifts in relation to the end of the operational platform and other railway infrastructure constraints has defined the location of the overbridge and station position.
- 6.2.4 Engagement with accessibility groups informed the adequate space for a wheelchair to turn around with the lift cars to overcome site constraints of a through-car solution. Engagement with local bicycle user groups also identified a requirement for an increased lift car size to accommodate bicycles, in addition to complying with the accessibility regulations.
- 6.2.5 Through-car lifts are proposed to the station buildings east and west of the railway, however, for the reasons described above, through lifts cannot be provided on the island platform. To mitigate potential congestion at overbridge level to the lift and stair entrance, generous lobby areas have been allowed for in the layouts.
- 6.2.6 This lobby space also allows for a segregated waiting area for wheelchair users and cyclists who are using the lifts.
- 6.2.7 Whilst the lift car dimensions will be detailed at the next stage where the detail of lift supplier products, equipment maintenance access and structural requirements are developed, the station footprint has been developed on a lift car size of 1400mm wide and 2000mm deep to meet end user needs and has been applied across the station for consistency.
- 6.2.8 Due to the site constraints, station operational requirements and in keeping with the project objectives, passenger stairs within the station buildings are in a three-flight U-shape arrangement.
- 6.2.9 Whilst stairs to the platform from both the footbridge and overbridge would be in a straight two-flight arrangement to reduce the incursion into rail clearance zones.
- 6.2.10 Platform layouts have been set out to ensure the use of mobile access ramps to board the train are compliant and all passenger access throughout the station would be designed in accordance with the DfT document Design Standards for Accessible Railway Stations ACOP (DfT ACOP) and BS8300:2018.

- 6.2.11 To form an intuitive layout for passengers, the station accommodation has been formed around the passenger routes and gateline positions which align with primary desire lines between the public realm and platform access. Plant areas would therefore be located behind the public facilities and are accessed from a secure area behind the building or the non-operational part of the platform.
- 6.2.12 The ticket gates would be arranged to reduce congestion between cycle users and pedestrians by positioning the wide automatic ticket gates to one side, ensuring those who need to use the lift to access other platforms can avoid crossing the path of pedestrians using the stairs or needing access directly to the platform.
- 6.2.13 To reduce the risks to safety and security presented by hidden corners and remote spaces, all proposed passenger areas will be designed to be as open and visible as possible. At platform level to support natural surveillance there are to be clear, unobstructed lines of sight.
- 6.2.14 To allow uninterrupted views, and short walking distances between station forecourts and platforms, station accommodation has been positioned to the north side of each station building.
- 6.2.15 The arrangement of the station buildings has been undertaken to allow natural surveillance from staffed station areas and potential retail to the cycle parking and forecourt areas.
- 6.2.16 Public areas within the station include accessible toilet facilities, a changing places room, waiting areas, information boards and ticket machines as well suitable space ensuring passenger flow is not impacted by people queuing. Space has also been considered in the layouts for passenger groups to meet.
- 6.2.17 Space for potential retail and staff areas have been arranged so that they are visible and accessible to provide passive security.
- 6.2.18 This strategy of mapping passenger flow, desire lines and needs, coupled with the platform and train stopping position, has driven the station footprint. A number of alternative layouts have been tested within the resulting envelope to both challenge the efficiency and flexibility of the footprint.

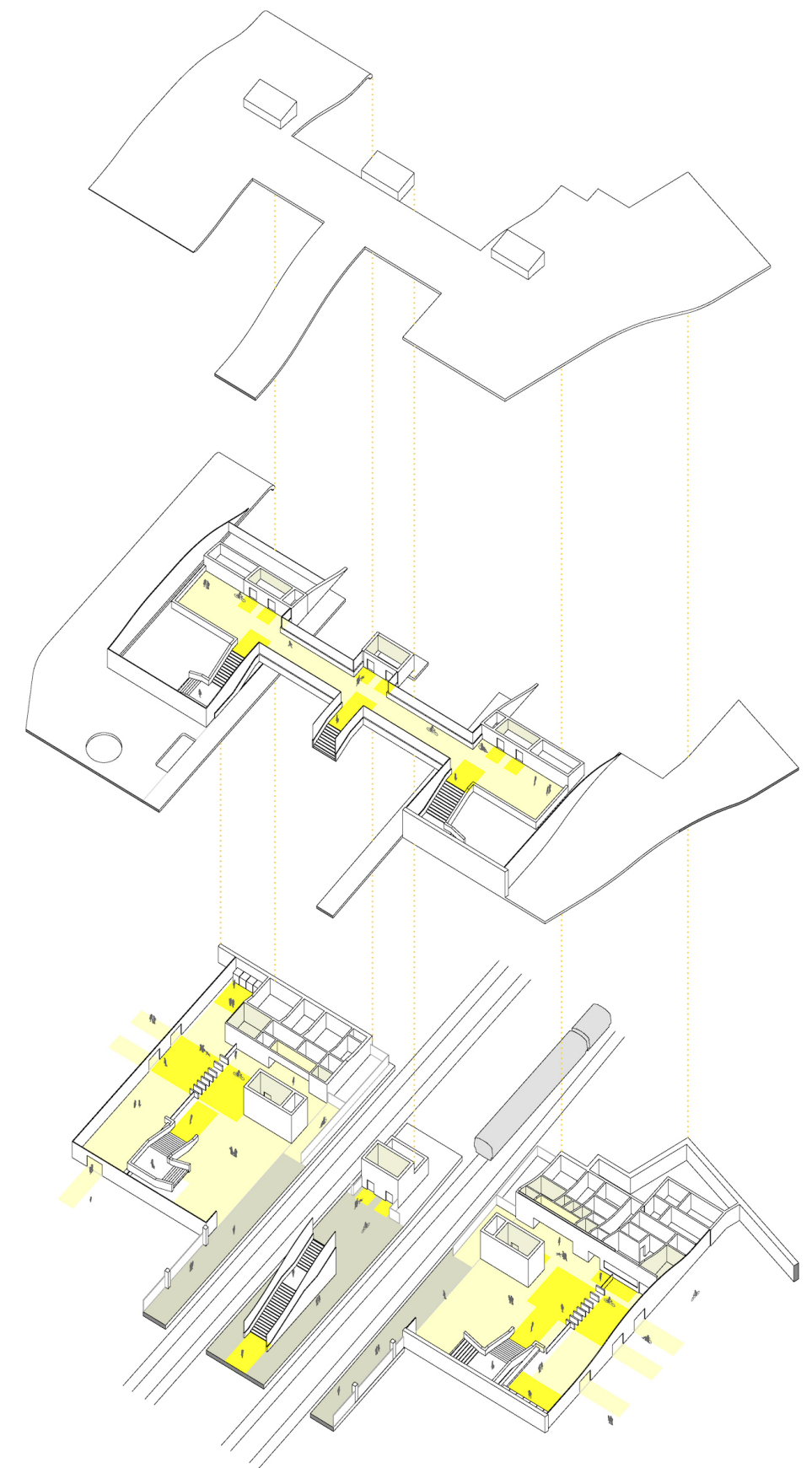


Figure 6-1: Indicative exploded axonometric of the station building



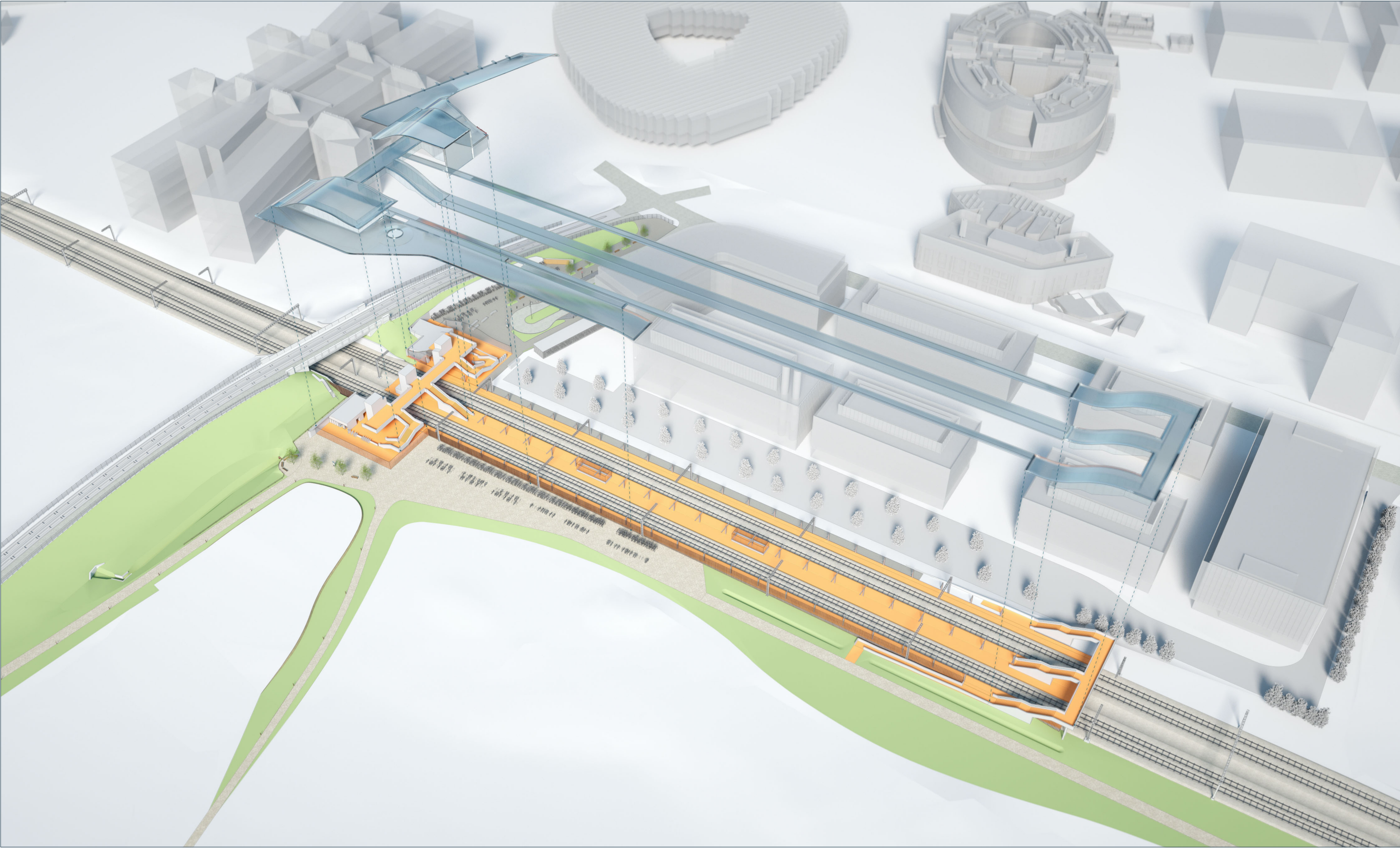


Figure 6-2: Exploded aerial view of the station, footbridge, platforms and canopies



6.3 Scale

- 6.3.1 To be compatible with its location and appropriate in terms of scale, mass and form in relation to the surrounding area the design of the station aims to provide a contextual, functional and identifiable community asset for this newly developing part of Cambridge. The scale of the buildings and structures would be consistent with the ‘Southern Fringe Area Development Framework’ by supporting a gateway in this area and by forming suitable connections across the railway. This approach to the scale of the buildings and structures, sympathetic to its natural context and emerging modern neighbours has influenced design to date enabling it to contribute positively to the Southern Fringe Area Development Framework (by supporting a gateway in this area) and Green Belt as a whole.’
- 6.3.2 To achieve this, the development’s external form, roofscapes and materiality on the west of the railway, set within a wider landscape context reflect the semi-naturalised character and landform of Hobson’s Park through the potential use of a planted / landscaped roof contributing to local biodiversity. Consistent with this landscape approach to scale, the buildings and structures of the eastern station area would display a consistency with roofscape of the west, but their orientation and alignment would conform with the block and street pattern of the CBC.

- 6.3.3 Forming a key entry point to the station, the two-storey glazed stair enclosure housing the station ticket hall concourse is used to support intuitive wayfinding between the entrance forecourt area and platforms, whilst the form aims to maximise natural light and security whilst providing access for facade cleaning and maintenance
- 6.3.4 A lower canopy to both station buildings not only forms cover to the unpaid concourse and cycle parking areas, but a more human scale contextual threshold before the volume opens up to the ticket gates, with the upper roof enclosing the stairs, lift and bridge. This also allows more natural light to enter the concourse whilst also reducing the mass of the station building.
- 6.3.5 Supporting rationale behind the layout which defines the size and width of the station buildings is as described in section 6.1. Whilst the form of the footbridge and the outer platform canopies is intended to continue the concept of green landforms, and their materiality will also reflect their location through Hobson’s Park, a series of factors including regulations relating to passenger safety, provision for varying train lengths and stopping positions define the scale of the station extents, whilst the height of the buildings, overbridge and footbridge is reliant on the following engineering aspects:

- The proposed track levels define the platform level which in turn defines the ground floor level of the station building which needs to provide level access from platform through the station and beyond;
  - OLHE clearance requirements from track to structures;
  - The anticipated structural depth of the bridge deck defines the finished floor level at bridge level which then defines the headroom within the lift shaft itself which is regulated by British Standards;
- 6.3.6 Further detailed consideration of the lift shaft and its roof at the next stage whilst addressing safety in maintenance adjacent the railway will ultimately define the lift shaft height.
- 6.3.7 The roof, which provides an all-encompassing envelope has been developed in scale with its relationship with Addenbrooke’s Bridge embankment, the single-story station accommodation, the headroom of the bridge, the potential to maximise natural daylight within the station concourse and its relationship with Hobson’s Park. All of which is set against a backdrop of the larger more imposing CBC emerging masterplan.



Figure 6-3: Indicative section through the station building towards Addenbrooke’s Bridge.

## 6.4 Appearance

6.4.1 The station design intent aims to provide a modern, functional, sustainable and identifiable community asset for this newly-developing area. A building that assists in creating a ‘visual’ gateway element to support the Southern Fringe Area Development Framework with its form and materials chosen to give an architectural language appropriate to its Green Belt context.

### Hobson’s Park Entrance (West)

6.4.2 An indicative west station building form has been developed to emphasise the landscape context through the potential use of a planted / landscaped roof contributing to local biodiversity. The detail will be discussed with future asset owners and maintainers in the next stage of design. The building orientation aligns with the main cycle and pedestrian path desire lines through the park.

6.4.3 The building forms aim to sit discreetly in the corner of the Park whilst extending a green corridor into the CBC. Whilst a common palette of materials is proposed throughout the station, its implementation in the Park would emphasise the more natural materials compatible with the Park and Green Belt setting.

6.4.4 Like the west side, the treatment of the elevation responds to the station functional requirements and passenger movement, however materials intend to reflect the changing park colour pallet, balancing the softer pallet of weathered steel, timber and green roofs with glass and steel.

6.4.5 The external forecourt area has been kept to a minimum whilst its form optimises sight and desire lines to the station whilst integrating within the park through the use of planting, surfacing and subtle lighting.

6.4.6 Materials are intended to be self-finished which require limited maintenance (to remove dust and debris) with the building’s external cladding and fencing sympathetic with the natural materials that characterise the Park and the edge of the Clay Farm residential area, such as the timber of the hides surrounding the bird reserve and the Active Recreation Area’s board walks, and weatherboarding and brick of Clay Farm’s eastern facade.

6.4.7 Plant rooms are positioned to the north minimising their visual impact to users of the park.

### Francis Crick Avenue Entrance (East)

6.4.8 In contrast, whilst the design intent of the east station building is to extend the green roof-scape concept on a slightly larger scale to suit the eastern accommodation requirements, the building orientation responds to the existing and proposed buildings on the CBC and acknowledges the Circus plaza as a key desire line.

6.4.9 Forming the main entry point which includes vehicle access to the station, the east side of the station includes a compact landscaped forecourt framed by the guided busway embankment and the Astra Zeneca southern campus.

6.4.10 Mirroring the western access, a two-storey glazed stair enclosure forms the station ticket hall concourse with a lower green planted canopy intended to continue the concept of green landforms within the park sweeps along the embankment providing cover to the cycle parking area and maximising natural light and security whilst providing access for facade cleaning and maintenance.

6.4.11 It is assumed at this stage the green roof elements would be accessed for maintenance from the back of the platforms or station forecourt.

6.4.12 The treatment of the elevation and landscaping in terms of materials and layout to the east would also draw upon that of the emerging CBC by using a mixture of glass and metal panelling which is used to accentuate vertical forms on the building’s façade as well as corresponding to functional station requirements and passenger movement where glazing is used to support intuitive way-finding and passive security throughout the station.

6.4.13 In general materials would be chosen to be robust, low maintenance and contribute to the BREEAM/sustainability targets. Materials with self-colour such as Zinc, structural laminated timber, GRC, stainless steel, terrazzo and glass would be the preference.

6.4.14 The specification of suitable green roof and wall systems minimising the need for maintenance and extending the lifespan of the substrate will be key in their value and success. By contrast the island platform canopy could feature photovoltaic panels.

### Perimeter Fences and Gates

6.4.15 The station will also require fence screens and gates to maintain the security of the station and allow means of escape in the event of emergency. While these elements will not form part of the normal passenger experience, they have a significant impact on the landscape character of the park, therefore subject to agreeing any acoustic requirements we are proposing bespoke self-finished weathered steel screens, in place of what might be considered more traditional galvanised palisade fencing. The intention is that these elements are more consistent in character with the landscape context of Hobson’s Park on the west and emerging masterplan proposals on the east.

## Landscape

6.4.16 The high level design principle, from a landscape perspective regarding landform proposals in the Park is:

- Landform change within Hobson’s Park would only occur where it is necessary to provide a gentle transition between the existing ground levels of the Park and the finished floor levels of the proposed station building and its associated structures. This includes along the route of the proposed shared pedestrian and cyclist access path across the Park, and the connections to the existing path network to the south-west of the station and the existing maintenance track parallel with the railway.
- The gradients of landform change along these routes would be suitably gradual to avoid the requirement for formal ramps and steps, given the detrimental effect these would have upon the landscape character and visual amenity of the Park.
- On a small number of occasions, away from these routes, these may need for steeper landform slopes in order to minimise the loss of, or harm to existing native tree and shrub vegetation.

6.4.17 The public realm of the station forecourts is intended to be a mixture of hard and soft planted surfaces to suit the proposed access requirements combined with a range of seating to create a sense of place and accessible station design. The form of construction will also accommodate loadings associated with maintenance and emergency services vehicles.

6.4.18 Rainwater attenuation is proposed to provided through a combination of planting, permeable surfacing and attenuation tanks constructed below the eastern station forecourt.

6.4.19 The management and maintenance of these areas will be agreed at the next stage.



6.5 Indicative Materials



Figure 6-4: Example of station lighting, White Hart Lane Station, Detail Design Fereday Pollard



Figure 6-7: Seasonal sedum roof (Newstead School, Fereday Pollard Architects)



Figure 6-10: Biodiverse roof mix of wildflower and grasses (Water Treatment Centre in Orleans (France), Arte Charpentier Architects, Goes Peron Architects and Thebaud Urbanism and Landscape.)



Figure 6-5: Larch laminated timber roof complimented with zinc cladding and glazed entrance (Abbey Wood Station , Fereday Pollard Architects)

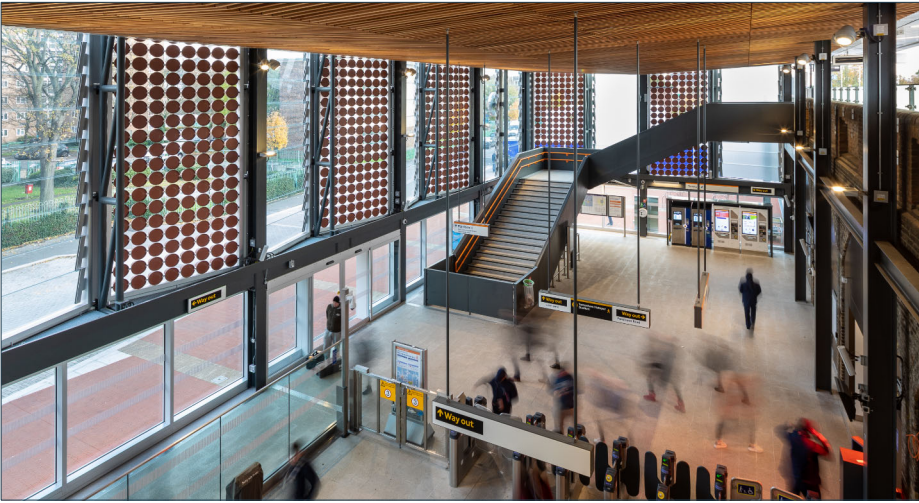


Figure 6-8: Stair access within a double height volume (White Hart Lane Station , Fereday Pollard Architects)

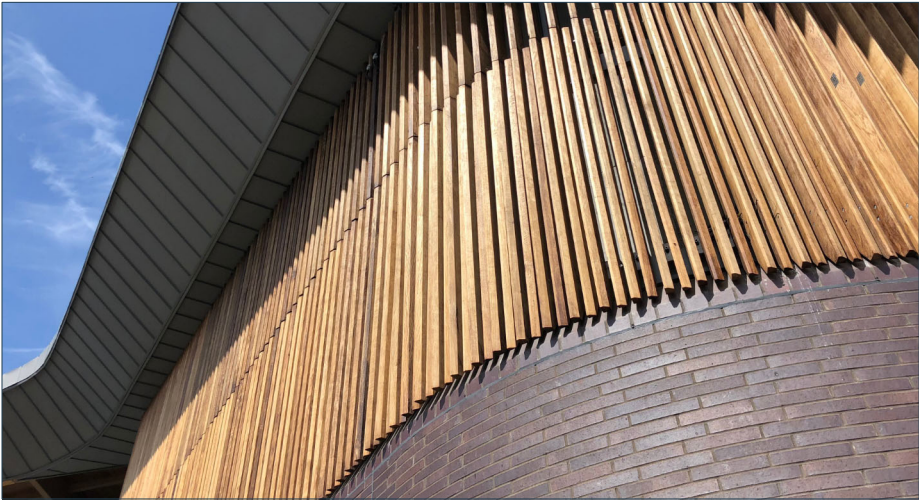


Figure 6-11: Vertical linear cladding over a robust brick base (Abbey Wood Station , Fereday Pollard Architects)

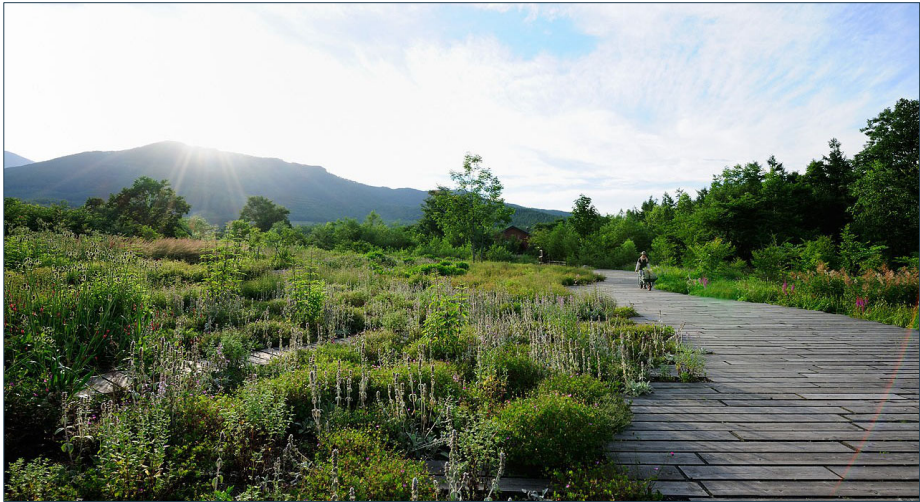


Figure 6-6: Tokachi Millennium Forest, Japan (Dan Pearson Studio)

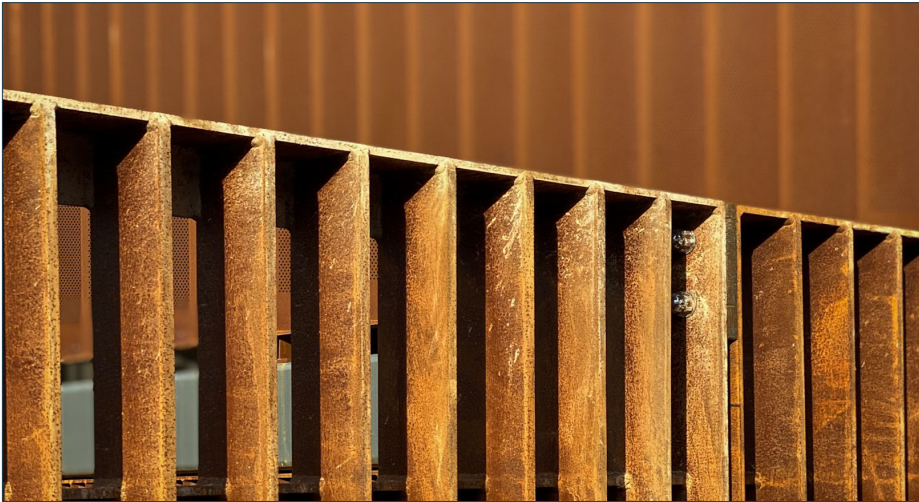


Figure 6-9: Weathered steel fencing (White Hart Lane Station , Fereday Pollard Architects)



Figure 6-12: Tokachi Millennium Forest, Japan (Dan Pearson Studio)



## 6.6 Lighting

6.6.1 As well as lighting the main access routes to the station for all users, a lighting and emergency lighting installation will be provided throughout the new station platforms, canopies, entrance area, secondary escape bridge and main footbridge.

6.6.2 To ensure satisfactory implementation of a Lighting Strategy and to reduce impact of light pollution from the development on the surrounding area and Hobsons Park, Key components of the lighting strategy comprise:

- Washed lighting highlighting the station architectural form and immediate associated public realm to provide a safe, characterful environment around the station, resulting in a positive experience at night;
- Higher levels of illumination around the station entrances and cycle parking bays to allow for high resolution CCTV coverage;
- To the west, avoid lighting poles to new access routes through Hobson's Park with low level sensor lighting activated according to occupancy and time of day preferred;
- To the east, tall lighting columns are proposed to avoid cluttering the compact forecourt and access arrangement;

6.6.3 As the new station buildings are characterised by transparency and views between the platforms and forecourts lighting the horizontal surfaces of the public realm to appropriate levels that are coordinated with the internal lighting levels of the station building will create a consistent safe environment during hours of darkness.

6.6.4 Within the station a lighting control system will form the basis of the control proposal which will allow for timed on periods and regulate canopy, footbridge and entrance area lighting according to occupancy and time of day. It will allow independent operation of each platform according to local conditions and provide the timed-on instructions for any open platform lighting.

6.6.5 Where there are open platform areas these will be provided with a conventional lighting column solution typically at 12-15m spacings along the length of the open platform area and fitted with LED wide optic LED luminaires. To limit light pollution, the luminaires could be provided with occupancy based sensing and local photocell control, to regulate output according to occupancy.

- Within the main concourse building and the west stair enclosure, the primary objectives are to provide requisite levels of illumination for the main circulation spaces without over illumination of the main station volume and avoids unnecessary light pollution. Key elements of the internal lighting strategy incorporate:
- Illuminated handrail lighting would be considered for station

stairs which also emphasise their sculptural quality and limit lighting pollution;

- Higher level lighting from fittings enabling key areas like the gateline to be more highly illuminated, with lower levels of illumination elsewhere to aid intuitive wayfinding and avoid over-illumination of the main concourse volume;
- Localised lighting for the ticket office and lift landings to provide higher levels of illumination where gathering information is important;
- All light fittings will incorporate low-energy and low-maintenance light sources.

6.6.6 Prior to the installation of any artificial lighting, a detailed artificial Lighting Scheme will be subject to approval by the local planning authority as part of the deemed planning conditions.

6.6.7 The approved lighting scheme shall be installed, maintained and operated in accordance with the approved details / measures unless the local planning authority gives its written consent to any variation.

6.6.8 Due to the nature of the proposed development the use of external lighting will be essential for user and staff safety and security. It is recognised, however, that external lighting and lighting from within the proposed station buildings and structures may have an adverse effect upon local landscape character and the visual amenity of users of Hobson's Park and the surrounding public open spaces.

6.6.9 To assist in reducing such potential adverse effects, the proposed Development has been planned to minimise impact at night from lighting.

6.6.10 Whilst agreement on the detailed design of lighting will be achieved through a future discharge of condition application, the following design principles are proposed to ensure that the effect of lighting is minimised:

- The quantity and illumination of the lighting proposed would be the minimum necessary to ensure safety but minimise night disturbance.
- The lighting design shall comply with the lighting levels, uniformity and other parameters of current and relevant lighting standards and higher than recommended lighting levels should be avoided.
- The lighting scheme for the development east of the railway (including the eastern station building, its forecourt and their associated structures) would adhere with the criteria for Environmental Zone E3 (Suburban), as set out in the Institution of Lighting Professionals 'Guidance Notes for the Reduction of

Obtrusive Light (2020)'. The lighting scheme for all other areas of the development would adhere to Environmental Zone E2 (Rural).

- All lighting would be positioned and directed only to where it is required so as to minimise light spillage and to minimise glare to users of surrounding highways, paths, other publicly accessible areas, existing residential areas and places of work. The main beam angle of all luminaires directed towards any potential observer would, where possible, not be greater than 70° from the vertical.
- To minimise sky glow, lighting near or above the horizontal would, where possible, be avoided. In addition low light pollution lanterns with flat glass lenses, horizontally mounted asymmetric luminaires / floodlights, full horizontal cut off optics / luminaires, Stand-off brackets and blanking plates for wall mounted lights (to reduce backwash onto the walls of the buildings) would, where possible, be used.
- The illumination of and proposed station-awareness and directional signage should adhere to the Institution of Lighting Professionals 'Professional Lighting Guide 05: The brightness of illuminated advertisements' particularly in respect of levels of upward lighting where downward-only lighting cannot be fully used.
- The use of a greater number of lanterns mounted at lower heights to allow closer control of the external lighting would be considered (particularly along the pedestrian and cyclist access route across Hobson's Park). The use of these would, however, be balanced with consideration of the resultant adverse effect of a greater number of lighting poles, and the increased potential from glare for lights at a lower level.
- Where possible and appropriate, consideration should be given to proposing timed/photocell-controlled lighting units and part-night lighting switching-off at quiet times, or a curfew which extinguishes all non-essential lighting after an agreed time, to ensure safety but minimise night disturbance.
- The range of lamp colour temperatures already found in and around the various parts of the site are to be used as a guide when planning the lighting for the development in order to provide some continuity in colour temperature across the wider area.
- Suitably designed physical barriers e.g. fencing, and existing vegetation or new structural planting would be used where possible and appropriate to obscure or reduce the effects of installed artificial light sources on sensitive receptors.





Figure 6-13: What the station may look like from Hobsons park



# 7.0 CONCLUSION

- 7.6.1 The vision for the Station is that it should form a contemporary, inclusive and functional quality packaged within a suitably scaled architectural envelop that is sustainable throughout its life. Its architecture in concept would complement the civil engineering works required to provide the various volumes and spaces that comprise the station design. From the ground floor accommodation through to the platform environment, the design responds to engineering and operational requirements. It is pragmatic in its approach, ensuring that the sequence of spaces experienced creates an intuitive, uplifting and dramatic environment for users of the station and its neighbours experiencing it as a backdrop.
- 7.6.2 The proposed Development aims to create a new, highly visible and attractive station entrance to the east, forming a junction with Francis Crick Avenue, set within a new public realm that seamlessly links and integrates with the surrounding context and the Circus plaza.
- 7.6.3 To the west, a low green-roofed station entrance would enhance the north east corner of the Park, with weathered steel fencing to the back of platform 4 forming a significant improvement compared with the existing standard railway fencing. The western landscaped approaches are proposed to subtly interface with the existing Park, to provide a level access straight into the station, with surrounding landscaping and trees to be reinstated and improved where possible.
- 7.6.4 The station’s architecture in concept ensures that the civil engineering works required to support the proposed Development’s functional requirements are integrated as a whole and does not comprise the aesthetic of the whole.
- 7.6.5 The palette of materials will be contemporary but respectful to the context, seeking to replicate or be consistent with the ground floor material intent currently being developed by the neighbouring AstraZeneca buildings within the CBC to the east, and a more natural flavour to the west to be in proportion and sympathetic to the local Park character whilst enhancing the civic quality and character to the east.
- 7.6.6 The proposed works would:
- **Provide a positive addition to the CBC public realm** : The proposed eastern station entrance will interface with the Biomedical Campus public realm spaces, connecting the platforms with passengers and responding to the specific landscape character of the area.
  - **Create a new accessible interchange appropriate to its context** : The proposed Development would reflect and enhance its context through seeking and maximising opportunities for urban greening whilst providing a high-quality place, with suitable amenities such cycle parking, lifts and integrated way-

- finding for onward travel.
- **Integrate with key desire lines** : The vision developed for the connectivity of spaces is that they are intuitive with careful consideration of desire lines within the station, to local destinations and onward travel.
  - **Provide considered and accessible places for people** : Spaces for seating, information about transport modes and times are accessible and easy to find within the ticket hall and forecourt.
  - **Be aesthetically considered** : By careful consideration of the landscape elements, form and materials we have tried to balance visual legibility of the Station from key destinations, with visual integration into Hobson’s Park and the setting of the Green Belt.
  - **Conserve the character and form of the green corridor, Hobson’s Park and the open countryside** : Principle to this is the preservation of the green corridor (forming part of Cambridge’s Green Belt) as an area of permanent openness from the city’s edge towards its historic core, achieved by placing the station tight up to the railway and by minimising its footprint and that of its associated infrastructure.
  - **Improve passenger experience through good station design** : Whilst meeting the future demands of passengers, a low-level canopy forms a human-scale entrance which transforms into double-height station ticket halls, enhancing the passenger experience by creating a sense of space and light, seamlessly integrating the upper- and lower-level passenger spaces with the external public realm, western wildlife and eastern Biomedical Campus.
  - **Maximise benefits to as many people as possible** : By undertaking passenger demand and incorporating the results within the proposals, the proposed Development will create an operationally efficient station taking only the space and footprint it needs, which benefits both the passengers using the station and the wider environment it sits in.
  - **Provide robust operational flexibility** : Operational resilience is aided by the two station entrances which also economically and socially provides the greatest benefit from the proposals.
  - **Enhanced accessibility** : The provision of six oversized lifts, a variety of cycle parking types to both sides of the station, accessible taxi and kiss-and-ride areas including ramps and lifts for evacuation ensures the station provides a fully accessible and flexible, public transport interchange.

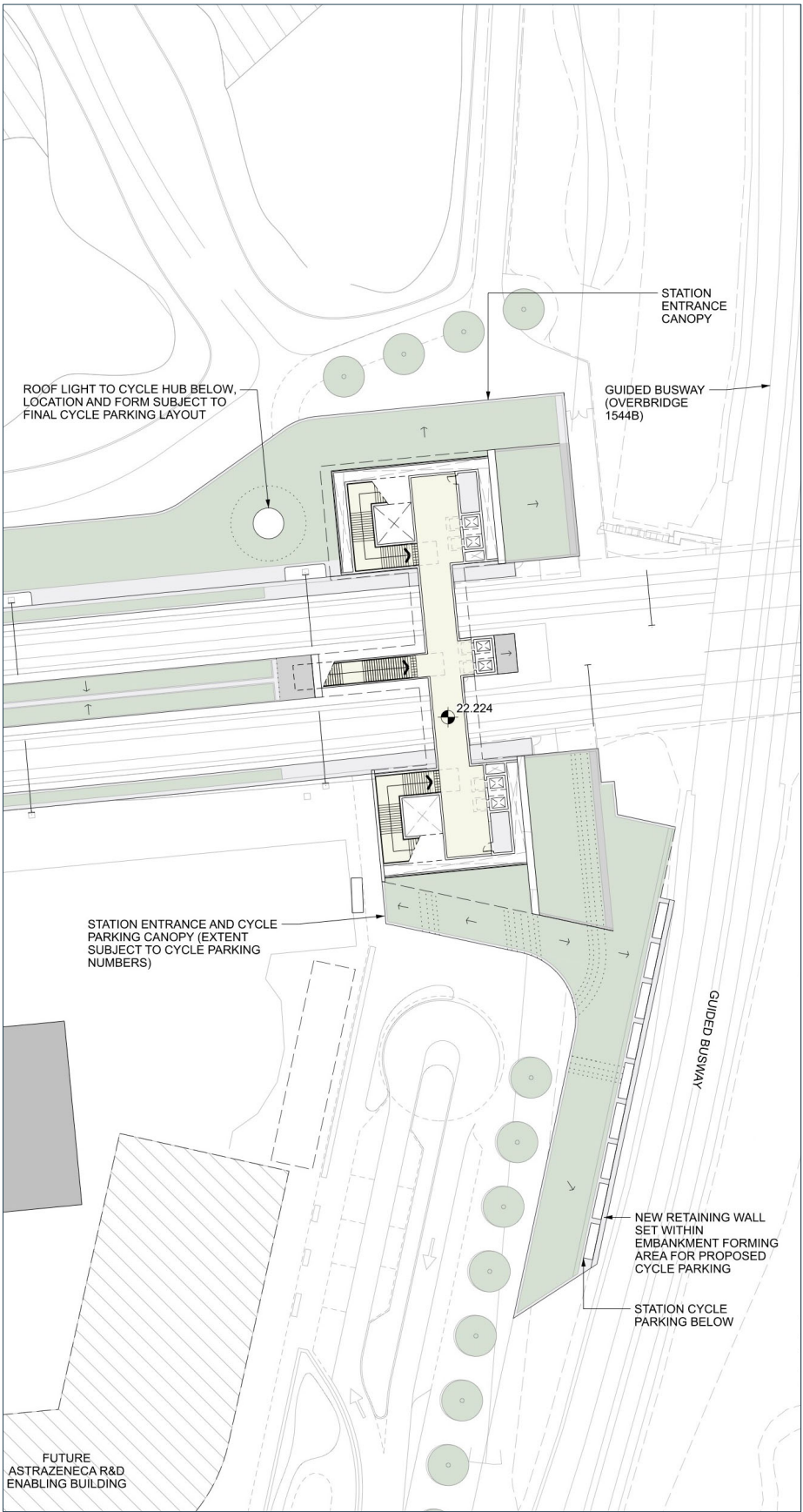


Figure 7-1: Station landscape





Figure 7-2: What the station may look like on approach from Francis Crick Avenue



# APPENDIX A: DESIGN PRINCIPLES

## 1.0 INTRODUCTION

Cambridge South Station is part of the Cambridge South Infrastructure Enhancements Project (the proposed Development) for which Network Rail (NR) will be seeking powers to construct and operate by submitting an application for a Transport and Works Act Order. Simultaneously, NR will also be making a request for deemed planning permission for the siting, massing and volume of the station and associated structures.

This Appendix describes the Design Principles that underpin the design and integration of Cambridge South Station into its context. They are written to capture the key principles documented in the Design and Access Statement (DAS) that have shaped the design thus far, which have informed the architectural strategy in locating and arranging the station facilities and access provisions.

Compliance with the Design Principles will be a requirement secured through a planning condition associated to the deemed planning request.

Submissions to discharge the relevant building design and landscaping conditions will be in accordance with the parameter plans formed as part of the deemed planning request and will require a Design Compliance Statement to demonstrate how those proposals comply with this document.

The Design Principles will be maintained and developed in the future detailed design and delivery phases of the proposed Development.

Stations add value to the local areas they serve and must be inclusive and connect people and places in a way which can be used by anyone.

*‘Our aim: To enhance our identity as an organisation and ensure our assets are connected to the communities they serve, by seeking out opportunities that capture the wider benefits of our work.’*

Our Principles of Good Design, Network Rail

*‘The Government attaches great importance to the design of the built environment:*

*Good design is a key aspect of sustainable development, is indivisible from good planning, and should contribute positively to making places better for people.’*

Paragraph 56 of the National Planning Policy Framework (NPPF)

*‘The creation of high-quality buildings and places is fundamental to what the planning and development process should achieve.’*

Paragraph 124 of the National Planning Policy Framework (NPPF)

The proposed new station is located to serve the Cambridge Biomedical Campus (CBC), which is the largest centre of medical research and health science in Europe and includes the wider Cambridge University Hospital and Royal Papworth Hospital on the wider Addenbrooke’s Campus. As such, the new station will provide improved and more sustainable connectivity in the region, providing direct access to potential routes on the rail network for those in South Cambridgeshire, and further afield.

Whilst the proposed Development includes rail infrastructure beyond the station demise to support its feasibility such as track works, line side compounds and removal of two level crossings, these Design Principles only concern the proposed station.

The proposals progressed to date are the result of an iterative design process informed by the Strategic Outline Business Case Project Objectives, the Cambridge City Local Plan, technical route development, public and key stakeholder consultation and pre-application meetings with the Greater Cambridge Shared Planning (GCSP).

Table 1: Strategic Outline Business Case Project Objectives

1.	Increase public transport connectivity between the Cambridge Biomedical Campus and international gateways, in recognition of its international significance.
2.	Improve sustainable transport access to housing, services, and employment within the Cambridge Southern Fringe and Biomedical Campus area, to fulfil existing and future demands.
3.	Minimise highway congestion associated with the Southern Fringe and Cambridge Biomedical Campus by increasing the mode share for sustainable transport modes.
4.	Reduce reliance on central Cambridge transport infrastructure for serving the Southern Fringe and Biomedical Campus.
5.	Be capable of integrating with and enhancing the opportunities presented by Thameslink and East West Rail, to support development of the Biomedical Campus as part of the Golden Triangle life sciences cluster.



## 2.0 PURPOSE

A railway station serving the busy and thriving CBC is essential to provide sustainable travel and public transport for patients, residents, commuters and national and international visitors in this area of projected growth. A series of Design Principles have been developed to set out the framework for the detailed design of the station and associated works to help not just deliver the design quality and performance standard of the station and surrounding public realm, but to ensure it is an appropriate response to the context within which it is located.

The Design Principles also provide assurance and confidence to stakeholders that the future station will be well designed. They inform the future design of the overall form as well as details of materials, which will be required through planning conditions attached to the deemed planning request.

This Appendix should be read in conjunction with the DAS which describes the wider context, the design of the proposed Development in terms of layout, access and landscape and illustrates the design intent in terms of scale and appearance, illustrating how the proposed Development could meet the technical requirements of the objectives to provide a suitable new station and environment that would improve connectivity for all.

## 3.0 PROPOSALS

In developing the basis of the illustrative concept for the station, which is constrained by the adjacent AstraZeneca plot to the East, Cambridgeshire Guided Busway (CGB) overbridge to the North and Hobson’s Park to the West, we have developed key Design Principles which are consistent with Network Rail’s Principles of Good Design and provide the framework for a contextual design approach which seeks to maximise the overall benefit provided by the proposed Development and demonstrate compatibility with relevant local planning policy frameworks and wider Local Plan.

The general basis of these principles is as follows:

1. **Identity** – a station that is developed in a way which provides value for money and a high-quality experience to the user.
2. **Passengers** – meets the needs of passengers in the form and function of the station and improve and simplify journeys.
3. **Community** – balance station infrastructure requirements with forming a new accessible place within the local community and accessing trains and meeting people who arrive by train.
4. **Inclusive** – the design approach will ensure the overall journey experience from forecourt to train is intuitive and accessible to all.
5. **Collaborative** – the proposed Development will continue engage its users and neighbours to support positive outcomes for all.
6. **Connected** – the layout should support the simple and intuitive movement of people, connecting one mode of transport to another, where passenger experience is at the forefront of design considerations.
7. **Contextual** – the station will integrate well into its context, responding to the character and form of Hobson’s Park to the east and the wider landscape beyond. To the west, it will provide a well-integrated frontage to the wider CBC campus.
8. **Innovative** – a design that minimises its impact on the environment and that allows for future adaptation and change.
9. **Sustainable** – the station will be designed in a way which considers the whole life cycle of the proposed Development to minimise waste and provide future flexibility.

### 3.1. Identity

An appropriate response to context will ensure that the local character is protected and enhanced. The proposed development should create a scale and form that is appropriate to existing buildings, the public realm and open spaces, which complement the local identity of an area.

Proposals are therefore to be developed in a way which includes variety and interest within a coherent, place-responsive design. One which is legible and creates a positive sense of place and identity whilst also responding to the local context and respecting local distinctiveness.

The proposed station will respond to the following principles:

No.	Design Principle Name	Design Principle
3.1A	Identity	The development of the station form provides an opportunity to capture the identity of a functional and sustainable community asset that is integrated within its context.
3.1B	Placemaking	Through its layout and materials, the intent is to provide a sense of place for passengers arriving at the station where the entrance concourse integrates with the public realm and open spaces on its east and west frontages to provide a useful and intuitive space.
3.1C	Be appropriate to its setting	By careful consideration of the landscape elements, form and materials balance visual legibility of the Station from key destinations, with visual and physical integration into Hobson's Park and Green Belt.
3.1D	Provide a positive addition to the CBC public realm	The proposed eastern station entrance will interface with the Biomedical Campus public realm and respond to the specific landscape character of the area.
3.1E	Conserve the character and form of the green corridor, Hobson's Park to the west and the open countryside beyond	Principle to this is the preservation of the green corridor (forming part of Cambridge's Green Belt) as an area of permanent openness from the city's edge towards its historic core, achieved by placing the station tight up to the railway and by minimising its footprint and that of its associated infrastructure.
3.1F	Frontage to the east	Providing improved accessibility to jobs on the CBC and services at the hospitals are a key justification for the station location. Transport modelling has supported this and it would also provide the opportunity for an international gateway to the CBC as set out in the Strategic Outline Business Case.

### 3.2. Passengers

With customer satisfaction and well-being forming vitally important criteria which encourage people to use rail travel, the proposed footprint includes sufficient and inclusive facilities and public realm.

The footprint has been influenced by dynamic passenger modelling to ensure the safe and efficient flow of passengers at peak hours and future growth can be accommodated and through consultation we have been able to better understand the users, accommodate their needs and aspirations to positively influence the proposals.

In summary the proposed station will:

No.	Design Principle Name	Design Principle
3.2A	Form a gateway	The Station Entrance to the east will form a junction with Francis Crick Avenue, set within a new public realm that seamlessly links and integrates with the surrounding context and environmental mitigation of previous schemes.
3.2B	Cater for different passengers	To the west, there will be a Station Entrance in the north east corner of the park interfacing with the existing park access routes to provide safe, and level access straight into the station.
3.2C	Improve passenger experience through good station design	Whilst meeting the future demands of passengers, the passenger experience is to be enhanced by creating a sense of space and light, seamlessly integrating the upper- and lower-level passenger spaces with the external public realm, western wildlife and eastern Biomedical Campus.
3.2D	Treat all passengers equally	Consider the experience and environment for users through inclusive design.
3.2E	Maximise benefits to as many people as possible	By undertaking passenger demand and incorporating the results within the proposals, the proposed Development will provide sufficient access which is catered for different users entering, exiting or waiting at the station.
3.2F	Create a new accessible interchange appropriate to the context	The proposed works will maximise opportunities for urban greening whilst providing suitable amenities such as cycle parking, lifts, wayfinding and connected spaces that are intuitive with careful consideration of desire lines both within and beyond the station.
3.2G	Fully accessible	From the ground floor accommodation through to the platform environment, the design is inclusive for users of the station and in keeping with its neighbours experiencing it as a back drop.
3.2H	Provide space for information	Information about transport options are accessible and easy to find.



3.3. Community

The proposed Development will balance local community requirements with infrastructure and functional asset requirements by engaging with key residents, business, community groups and recreational users and site operators within the local area to enable better coordination between public and private resources and improved outcomes for the community.

In summary the proposed station will:

No.	Design Principle Name	Design Principle
3.3A	Be permeable to the community it serves	The Station will form a highly visible Station Entrance to the east forming a junction with Francis Crick Avenue, set within a new public realm that seamlessly links and integrates with the surrounding context and environmental mitigation of previous schemes.
3.3B	Have a positive visual appearance	By creating a considered experience for the user and wider community, specifically from the existing development around it.
3.3C	Consider community opportunities	Design of the station will take into account community feedback to drive a design in keeping with the local context and priorities.
3.3D	Provide space for people	Space will be provided for movement, waiting and meeting of people in varying weather conditions.
3.3E	Minimise impact on neighbours	Maintenance requirements of the works are considered at the earliest design stages and sustainable solutions considered as an intrinsic part of the design.
3.3E	Minimise impact on neighbours	Maintenance requirements of the works are considered at the earliest design stages and sustainable solutions considered as an intrinsic part of the design. For this stage, the footprint proposed considers access for construction, maintenance and replacement ensuring that maintenance of the station and associated infrastructure, as well as that of Hobson's Park, is considered throughout.

3.4. Inclusive

The designs should ensure the overall journey experience from forecourt to train is simple and places people at the heart of the design process.

In summary the proposed station will be designed in a manner which allows people to use them in an inclusive way and reduces barriers to access and participation as well as being:

No.	Design Principle Name	Design Principle
3.4A	Resilient	The station is designed to be resilient to future climate change, and the space to support passenger growth.
3.4B	Enhanced accessibility	The proposed Development will continue to listen to its users and provide suitable and accessible space in the layouts ensuring the station is as inclusive as possible to all users and staff.
3.4C	Considerate	A variety of covered cycle parking areas to both sides of the station to suit various types of bicycles are to be provided, as well as accessible taxi and kiss and ride areas including ramps/ lifts for evacuation to ensure the station provides a fully accessible and flexible, public transport interchange.
3.4D	Convenient	Proposals shall have a detailed design that is safe and considers the convenience of the users and appropriateness to the context of the adjacent landscape character.
3.4E	Provide considered and accessible places for people	Spaces for seating, information about transport options will be accessible and easy to find.

3.5. Collaborative

The proposed station area is of interest to multiple stakeholders, therefore it is crucial to seek all parties support both economically and socially through engagement to capture the greatest benefit from the proposed Development for all.

A mitigation plan has been developed to respond to the Environmental Impact Assessment and consultees and stakeholders have to date informed the station layout, proposed materials and access arrangements.

In summary the proposed station will:

No.	Design Principle Name	Design Principle
3.5A	Engage	To ensure the proposals lead to a successful outcome focused on people and places they will continue to be developed around an open dialogue with people, communities and its neighbours.
3.5B	Listen	The proposed Development will listen to its users and shall be developed through a multi-disciplinary collaborative design process such that all features of the proposed Development, maintenance access, its integration with the surroundings, and environmental mitigation are coordinated.
3.5C	Collaborate	Prior to the submission of conditions relating to the detailed design of the station the proposed Development will engage with the Cambridgeshire Quality Panel.
3.5D	Review	The proposed Development will continue to engage and consult with key stakeholders such as the City Council’s Access Officer and NR’s Built Environment Accessibility Panel.

3.6. Connected

The success of transport infrastructure relies on simplifying journeys, connecting one mode of transport to another, putting passenger experience at the forefront of design considerations. The Transport Assessment has identified that 60 % of trips to the railway station expected to be by foot; 24 % by cycle; 10 % by other public transport; and 5 % by taxi or drop off the station has been developed to ensure it is well-connected to enable easy access for all to jobs and services using sustainable modes such as pedestrians, buses, bicycles and the potential future CSET route.

In summary the proposed Development will:

No.	Design Principle Name	Design Principle
3.6A	Create a new accessible interchange appropriate to its context	The proposed Development will reflect and enhance its context through seeking opportunities for urban greening whilst providing suitable amenities such cycle parking, lifts and way-finding.
3.6B	Integrate with key desire lines	The connectivity of spaces is to be intuitive with careful consideration of desire lines within the station, to local destinations and onward travel.
3.6C	Integrate with future schemes	The station eastern forecourt design is to be adaptable to ensure it can integrate with future schemes such as the emerging CSET scheme. The proposed Development will continue to engage with interfacing schemes at the next stage of design.
3.6D	Provide space for interchange	With the Cambridge Guided Busway, pedestrian, kiss-and-ride and cycle access, as well as the potential CSET scheme space is to be provided to support the movement of people between modes which will all converge on or near the railway station access.
3.6E	Manage interfaces	The junction design on Francis Crick Avenue must be coordinated with the station access to minimise conflict between competing users.
3.6F	Connect modes	Provide plentiful, covered and secure cycle parking and maximise connections with existing path and cycle networks.
3.6G	Maximise cycle and pedestrian access from both east and west (with cycle parking provided both sides of the railway	To reduce end to end journey times for all users, entrances will be provided to the East and the West.
3.6H	Provide safe and good pedestrian and cycle connections	The proposed Development will provide a direct, surfaced and well-lit and signposted access route to each side of the station that is clearly navigable and free of obstacles.
3.6I	Minimise impact on existing infrastructure	Bus services on Francis Crick Avenue or the existing Guided Busway will not be impacted by the station design.
3.6J	Ensure direct access to key nodes	The station entrance and access should integrate within the existing urban environment with good access to local population and services.
3.6K	Provide adequate, not excessive vehicle access	Designs will include access for operational staff, maintenance, emergency vehicles and access for taxis, disabled users and kiss-and-ride.
3.6L	Connect green	Seek opportunities to link to other biodiversity gain strategies being undertaken elsewhere on the CBC site.



### 3.7. Contextual

Proposals are to be in proportion and sympathetic to the local character, enhancing the civic quality and natural character of the existing environment. One of the key challenges in developing the design vision is the need to recognise, respect and respond appropriately to the existing context and emerging CBC whilst developing an integrated station appropriate for the Green Belt and the wider growth expected in the Southern Fringe area of Cambridge.

The existing railway, which the proposed station serves, sits on the eastern boundary of Hobson's Park. An area of grassland and lakes forming part of a green wildlife corridor that runs from Shelford and Trumpington along Hobson's Brook, Vicars Brook and northward to join the River Cam forming an ecological corridor.

Therefore whilst the wildlife area adjacent the proposed station forms an important community amenity for those working and living nearby, it is very much part of a bigger picture of strategic Green Belt which aims to protect and enhance the quality and purposes of Green Belt land.

This open green area, rich in habitat and wildlife which forms part of the southern gateway to Cambridge, has been key in influencing the station concept.

Though site analysis and engagement we have established key masterplan planning requirements which impact the site layout, massing and vision such as permeability and views and embedded these within the design principles:

No.	Design Principle Name	Design Principle
3.7A	<b>Minimise its footprint</b>	In recognition of the site as a 'green corridor' which contributes to the important characteristics of the city and is a key component for providing amenity and biodiversity the proposed Development within Hobson's Park avoids excessive landtake, during construction and operation, to allow retention of as much of the existing vegetation, open space and path network as possible.
3.7B	<b>Consider landscape and the environment</b>	Landform change within Hobson's Park would only occur where it is necessary to provide a gentle transition between the existing ground levels of the Park and the finished floor levels of the proposed station building and its associated structures. This includes along the route of the proposed shared pedestrian and cyclist access path across the Park, and the connections to the existing path network to the south-west of the station and the existing maintenance track parallel with the railway.
3.7C		The gradients of landform change along these routes would be suitably gradual to avoid the requirement for formal ramps and steps, given the detrimental effect these would have upon the landscape character and visual amenity of the Park.
3.7D		On a small number of occasions, away from these routes, these may need for steeper landform slopes in order to minimise the loss of, or harm to existing native tree and shrub vegetation.
3.7E	<b>Integrate well with both the built and natural environment</b>	Located between Cambridge Biomedical Campus, the largest centre of medical research and health science in Europe and 'Great Kneighton' a housing development of about 2000 units, the design of the station needs to maintain and serve as a visual amenity to both sides of this emerging urban context each side of the Green Belt.
3.7F		This approach, sympathetic to its natural context and emerging modern neighbours has influenced design to date enabling it to contribute positively to the Southern Fringe Area Development Framework (by supporting a gateway in this area) and Green Belt as a whole.
3.7G		As such, the prevailing consideration in developing the station concept is one that both maintains and enhances the quality of its important landscape setting whilst acknowledging the material pallets of the both emerging residential development to the west, and that of the newest additions of the Biomedical Campus to the east.
3.7H	<b>Restrict vehicular access to the east side only</b>	Given the recreational and wildlife value of the Green Belt/Hobson's Park, over provision of vehicular access is not warranted apart from necessary maintenance
3.7I	<b>Integrate with the existing park landscape structure</b>	The station is to be situated behind the tree belt that runs on gently sculpted low mounds along the Park's east edge.
3.7J		The layout of the station embraces the connection of the landscape with its watercourses by creating visually and biodiversity enriching design.
3.7K		By promoting the station's legibility through reinforcement of the series of 'visual nodes' that already exist through Hobson's Park, Clay Farm and the green corridor.
3.7L	<b>Integrate with the proposed CBC landscape masterplan</b>	The development's external form, roofscapes and materiality reflect the semi-naturalised character and landform of the park.
3.7M		The station is to provide a visual and physical connection across the railway seeking opportunities to maximise biodiversity and in accord with the CBC masterplan principles including avoidance of harm to the established 25m wide strategic gaps between the CBC buildings to the east of the railway, by locating the largest parts of the proposed built form away from these.
3.7N		The station emphasises the landscape context through the potential use of a planted / landscaped roof contributing to local biodiversity. The detail will be discussed with future asset owners and maintainers in the next stage of design.
3.7O	<b>Be conscious of the operational rail context to provide a safe and maintainable asset</b>	Proposals will not be allowed to affect the operation of the railway or Over Head Line Equipment (OHLE), especially if it required Possessions to undertake this work, which would be both disruptive and expensive.
3.7P	<b>Improve local biodiversity</b>	The prevailing landscape context should inform opportunities for an east-west biodiversity gain through urban greening and green linkages.
3.7Q		Integrate swales and attenuation ponds into their setting.
3.7R	<b>Form and material</b>	The material palette will be contemporary but in proportion and sympathetic to its setting acknowledging the materials currently being developed within the neighbouring AstraZeneca Southern Biomedical Campus masterplan and the more natural pallet within Hobson's Park.

3.8. Innovative

The vision for the Station is that it should form a contemporary, inclusive and functional quality packaged within a suitably scaled architectural envelop that is sustainable throughout its life.

In summary the proposed station will:

No.	Design Principle Name	Design Principle
3.8A	Minimise its footprint	In recognition of the site as a ‘green corridor’ which contributes to the important characteristics of the city and is a key component for providing passive sport and recreation for amenity and biodiversity the proposed Development within Hobson's Park avoids excessive landtake, during construction and operation, to allow retention of as much of the existing vegetation, open space and path network as possible.
3.8B	Smart Architecture	The external form, roofscapes and materiality should not only reflect the semi-naturalised character of the park but provide adequate cover to support passenger comfort and operational dwell times.
3.8C		Anticipate efficient future capacity and demand opportunities in today’s design.
3.8D		Seek potential for harvesting sustainable resources such as solar and grey water systems.
3.8E		Investigate solutions to ensure the eastern entrance can sustain the level of envisaged multimodal demand.
3.8F	Provide robust operational flexibility	The platform layout allows for flexibility in future services and timings.
3.8G	Provide robust operational flexibility	The station is to provide operational resilience through two station entrances and associated access which also economically and socially provides the greatest benefit from the proposals.



3.9. Sustainable

Applying “good design” should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction, matched by an appearance that demonstrates good aesthetics as far as possible.

The station architecture, landscape and engineering design is to be as aesthetically sensitive, durable, adaptable and resilient as it can reasonably be.

A BREEAM assessment has been undertaken to identify and factor into design targets that impact layout and massing.

Due to the nature of the proposed development the use of external lighting will be essential for user and staff safety and security. It is recognised, however, that external lighting and lighting from within the proposed station buildings and structures may have an adverse effect upon local landscape character and the visual amenity of users of Hobson’s Park and the surrounding public open spaces.

To assist in reducing such potential adverse effects, the proposed Development has been planned to minimise impact at night from lighting and considered lighting upon approach.

In summary the proposed station will:

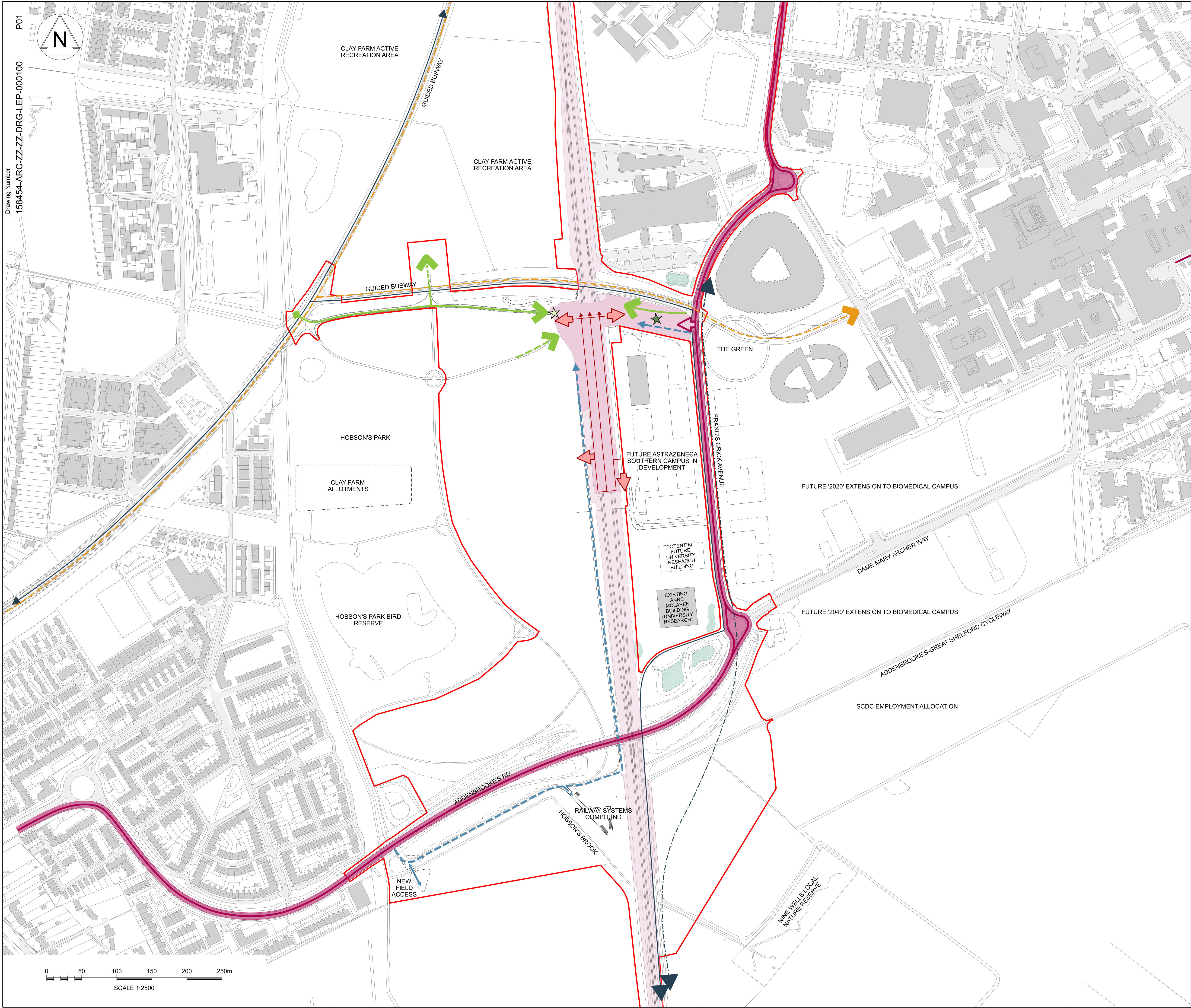
No.	Design Principle Name	Design Principle
3.9A	Habitat	Within this landscape context, the station infrastructure should where feasible, seek to be an integral part of the natural landscape enabling species migration and providing diverse habitats.
3.9B		Biodiversity targets will be agreed with the local authority.
3.9C		The station architecture will minimise clutter by seeking dual purposes where possible, as well as opportunities to enrich biodiversity where it can.
3.9D		Design proposals shall prioritise improving connectivity between existing habitats wherever reasonably practicable.
3.9E	Net Gain	Network Rail are committed to achieving 10 % net gain in biodiversity as part of the proposed Development.
3.9F	Energy	Encourage energy efficiency in the station design.
3.9G		The station will be designed to a BREEAM target rating of excellent.
3.9H	Climate	The station will be designed with the aim of being resilient to climate change.
3.9I		SuDS measures are to be identified and incorporated into the design of all external hard surfaces.
3.9J	Resources	The station shall be efficient in its use of resources and multifunctional wherever reasonably practicable. For example, structures will be designed to accommodate multiple functions where it makes sense to do so.
3.9K		The roof geometry should consider simultaneously create volume where it’s needed whilst providing an opportunity for grey water recycling.
3.9L		The station works are to be designed in a way which considers the whole life cycle of the proposed Development to minimise waste and provide future flexibility.
3.9M		Provide long lasting low maintenance assets.
3.9N	Sustainable and durable material selection	Target Green Guide A or A+ materials where possible.
3.9O		Utilise platform systems which have sustainable benefits over other systems such as reduced levels of embodied carbon and reduced whole life costs of other platform types.
3.9P	Heritage	Constructed between 1614 and 1620, Hobson’s Conduit and its tributaries are a valued historic and wildlife resource. Proposals therefore minimise impact on them through integrated landscape drainage solutions and minimising run-off.
3.9Q	Lighting	Lighting will be the minimum necessary to provide safe conditions and will be in accordance with relevant guidance set out in the ‘Guidance Notes for the Reduction of Obtrusive Light, 2020- GN01/20’.

APPENDIX B: PARAMETER PLANS



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The Network Rail  
(Cambridge South Infrastructure Enhancements)  
Order

NOTES

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KEY:

SITE BOUNDARY

CAMBRIDGE GUIDED BUSWAY

N11 NATIONAL CYCLE ROUTE AND CYCLE NETWORK

POTENTIAL CSET PUBLIC TRANSPORT ROUTE

STATION BUILDING ZONE INCORPORATING ACCESS, TICKET HALL, RETAIL, COVERED CYCLE PARKING AND ANCILLARY OPERATIONAL SPACES

WIDENED RAILWAY CORRIDOR INCLUDING ENCLOSURE FOR RAILWAY PLANT AND EQUIPMENT

VEHICULAR ACCESS TO STATION FORECOURT FOR TAXIS, DROP OFF, BLUE BADGE PARKING, MAINTENANCE AND STAFF

VEHICULAR ACCESS TO STATION

PROPOSED NEW PEDESTRIAN AND CYCLING ACCESS

INFORMAL PEDESTRIAN (NO LIGHTING) FROM IMPROVED EXISTING PATH

STATION & RAIL MAINTENANCE ACCESS

PROPOSED AT GRADE STATION FORECOURT INCORPORATING LANDSCAPING, CYCLE, PEDESTRIAN, TAXI AND CAR INTERCHANGE FACILITIES

PROPOSED AT GRADE STATION FORECOURT INCORPORATING LANDSCAPING, CYCLE, PEDESTRIAN FACILITIES

PROPOSED STATION EMERGENCY EGRESS

PROPOSED FIELD ACCESS

P01	08/06/21	First Revision		WS	ET	JK
Rev	Date	Description of Revisions	Drawn	Chkd	Appr	

Project  
Cambridge South Infrastructure Enhancement Scheme

Drawing Title  
DEEMED PLANNING DRAWINGS  
PARAMETER PLANS  
ACCESS AND MOVEMENT

Scale(s)  
1:2500

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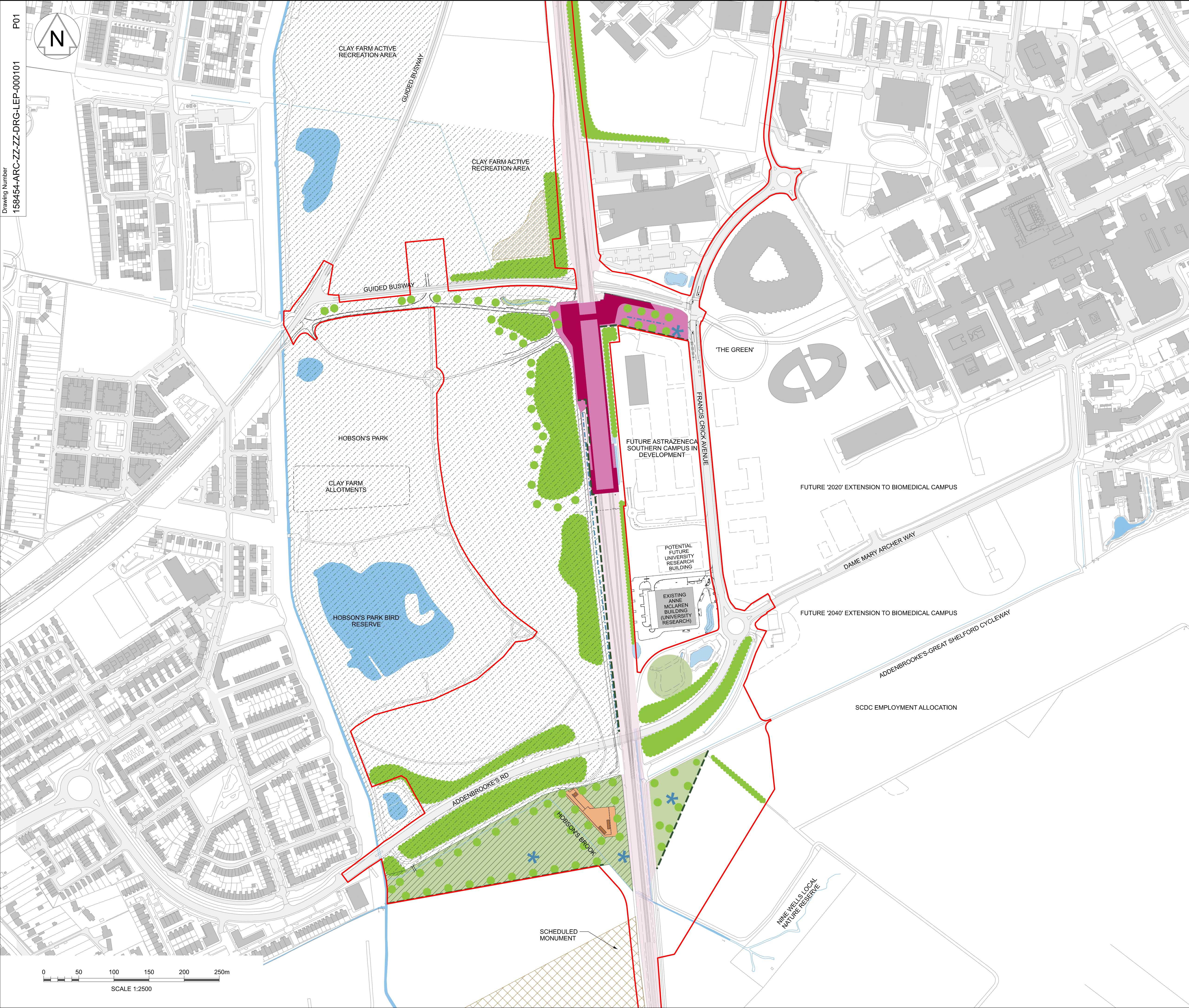
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Drawing Number  
158454-ARC-ZZ-ZZ-DRG-LEP-000100

Revision  
P01

Sheet Size A1 594 x 841





Drawing Number  
158454-ARC-ZZ-ZZ-DRG-LEP-000101  
P01

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- KEY:
- SITE BOUNDARY
  - STATION BUILDING ZONE
  - WIDENED RAILWAY CORRIDOR
  - RAILWAY SYSTEMS COMPOUND
  - EXISTING PUBLIC OPEN SPACE RETAINED
  - PROPOSED REPLACEMENT NEW PUBLIC OPEN SPACE
  - EXISTING KEY STRUCTURAL VEGETATION RETAINED /REINSTATED
  - PROPOSED KEY STRUCTURAL VEGETATION
  - PROPOSED HEDGEROW
  - PROPOSED HABITAT ENHANCEMENT
  - EXISTING WATERCOURSES / WATER BODIES
  - PROPOSED SUSTAINABLE SYSTEM (SUDS)
  - POTENTIAL AREA FOR SITING OF GREEN BIODIVERSE ROOF
  - SCHEDULED MONUMENT
  - LOCAL ENVIRONMENT MANAGEMENT PLAN (LEMP)

P01	08/06/21	First Revision	WS	ET	JK
Rev	Date	Description of Revisions	Drawn	Chkd	Appr

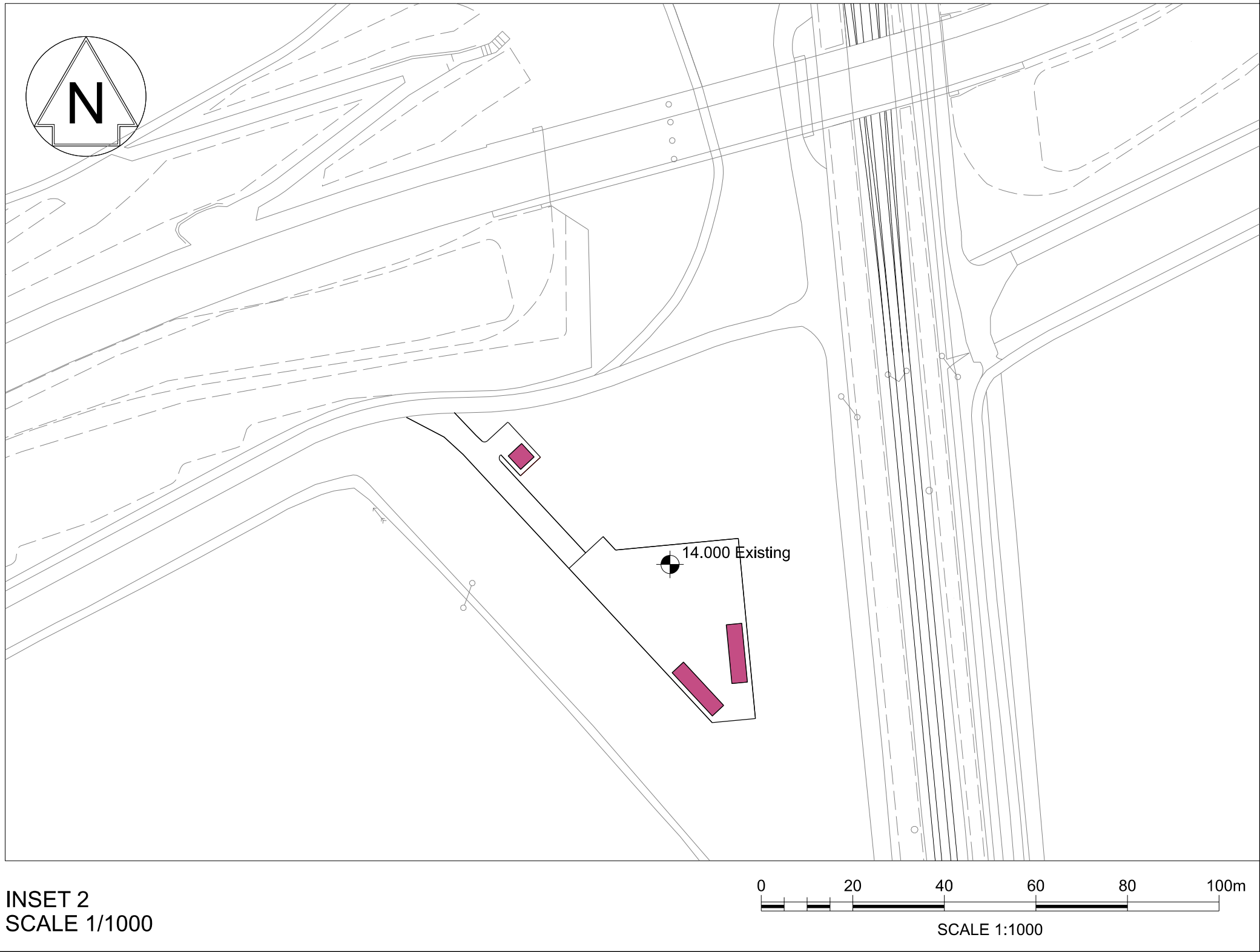
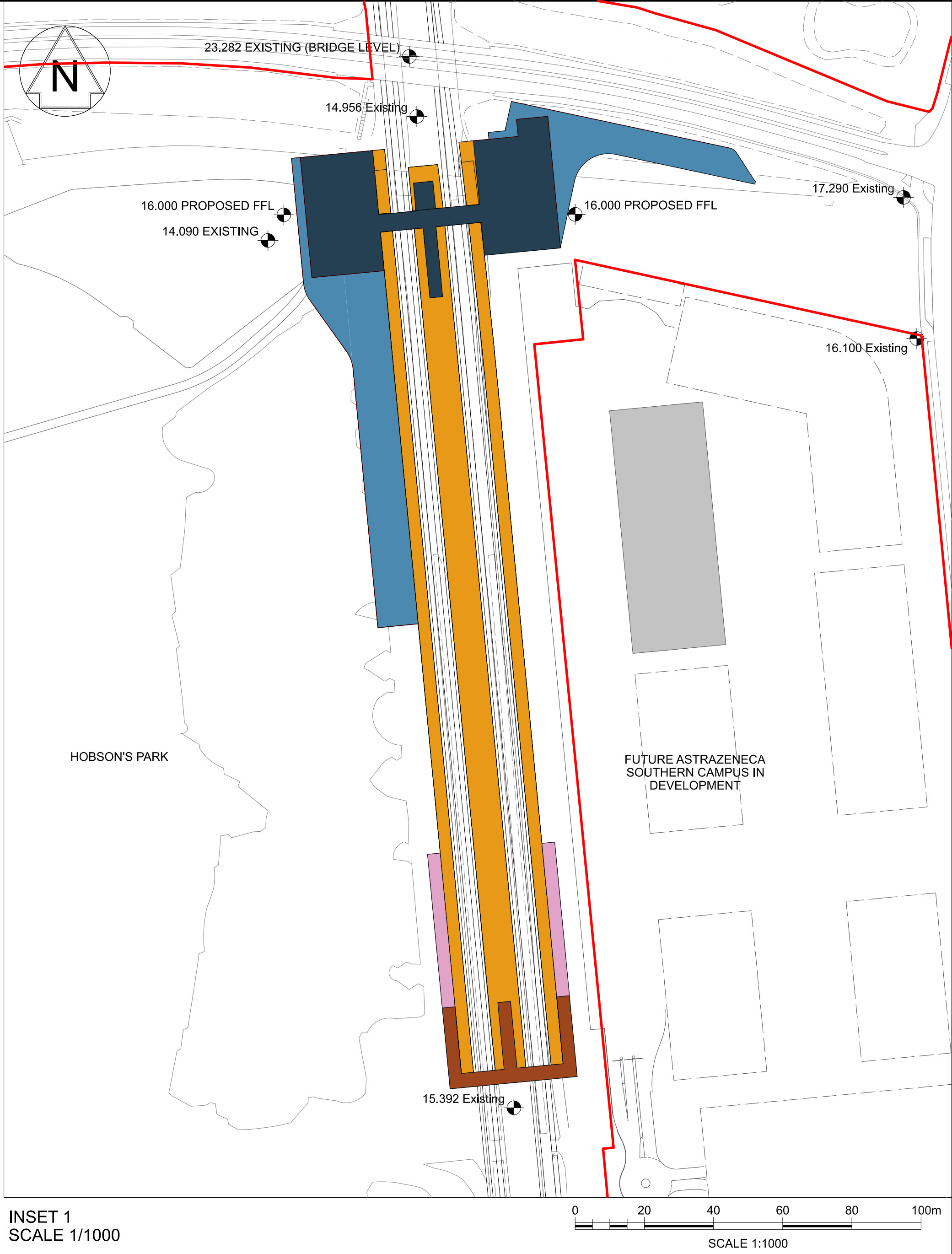
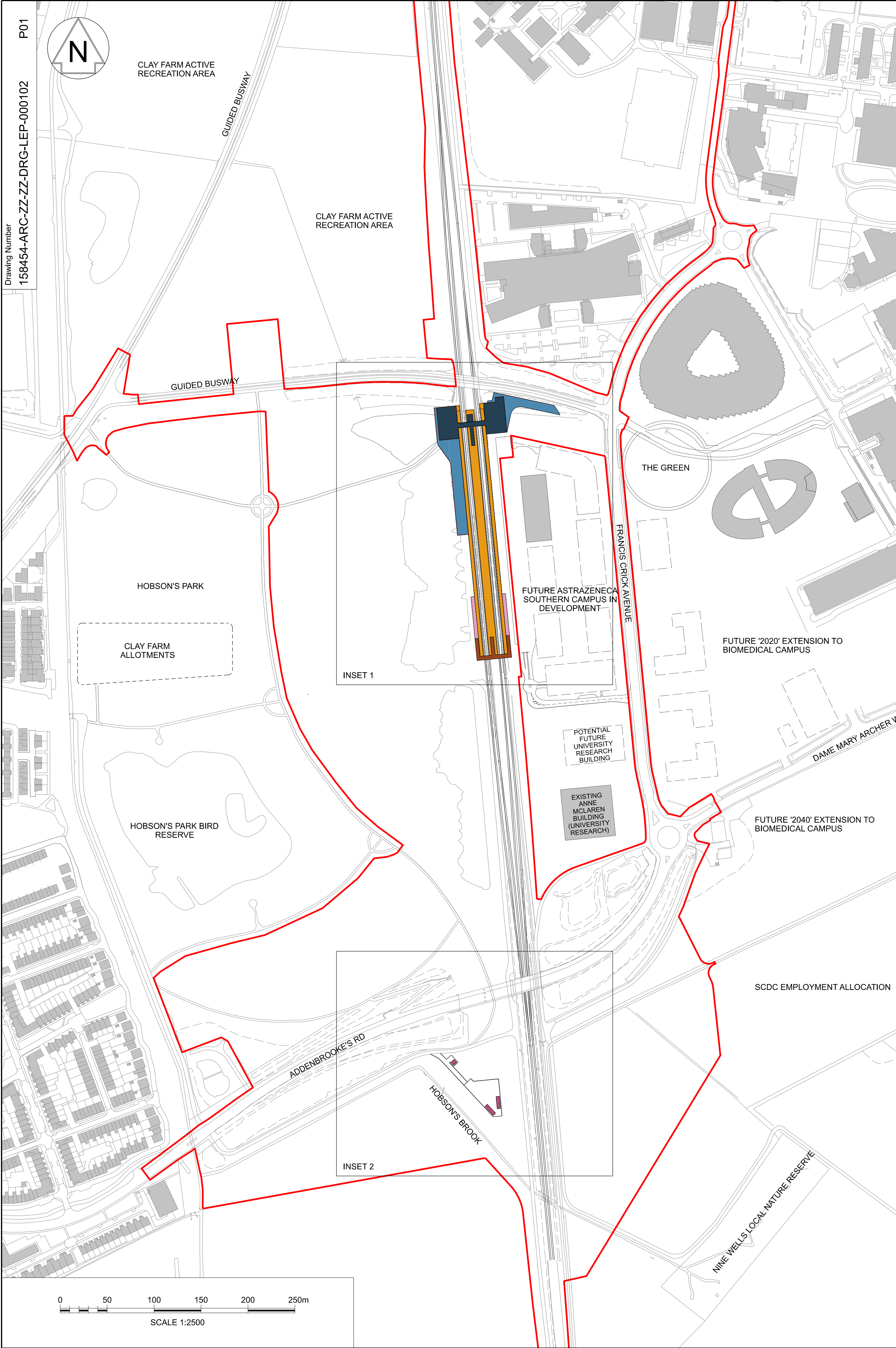


Project  
Cambridge South Infrastructure  
Enhancement Scheme

Drawing Title  
DEEMED PLANNING DRAWINGS  
PARAMETER PLANS  
LAND USE AND LANDSCAPE

Scale(s) 1:2500	@A1	ELR & Mileage to	Revision P01
Drawing Number 158454-ARC-ZZ-ZZ-DRG-LEP-000101			





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- LEVELS SHOWN IN METERS TO NEWLYN ORDNANCE DATUM. PROPOSED LEVELS ARE SUBJECT TO A VERTICAL LIMIT OF DEVIATION OF 1.5m.

KEY:

- SITE BOUNDARY
- STATION BUILDING ZONE INCORPORATING A BUILDING TO EACH SIDE OF THE RAILWAY AND THE ASSOCIATED CONNECTING BRIDGE AND LIFTS.
- 30.5m ABOVE DATUM LEVEL INCLUDES:  
1.5m LIMIT OF VERTICAL DEVIATION  
3m LIMIT OF HORIZONTAL DEVIATION
- CYCLE PARKING AND STATION ACCESS/FORECOURT
- 22m ABOVE DATUM LEVEL INCLUDES:  
1.5m LIMIT OF VERTICAL DEVIATION  
3m LIMIT OF HORIZONTAL DEVIATION
- STATION PLATFORM ZONE INCORPORATING PLATFORMS, ASSOCIATED CANOPIES AND WAITING STRUCTURES.
- 22m ABOVE DATUM LEVEL INCLUDES:  
1.5m LIMIT OF VERTICAL DEVIATION  
1.5m LIMIT OF HORIZONTAL DEVIATION.
- FOOTBRIDGE
- 28.5m ABOVE DATUM LEVEL INCLUDES:  
1.5m LIMIT OF VERTICAL DEVIATION  
3m LIMIT OF HORIZONTAL DEVIATION FOR NORTH AND SOUTH.
- PLATFORM FIRE ESCAPE INCORPORATES RAMPED ACCESS FROM PLATFORM LEVEL DOWN TO EXISTING GROUND LEVELS
- ANCILLARY STRUCTURES INCORPORATING A SUBSTATION AND RAILWAY SYSTEMS COMPOUND.
- NOTE:  
PLAN SHOWS THE INDICATIVE LOCATIONS OF THE ANCILLARY STRUCTURES. DETAILED DESIGN OF THESE STRUCTURES WILL BE SUBJECT TO APPROVAL BY THE LOCAL PLANNING AUTHORITY AS PART OF THE DEEMED PLANNING CONDITIONS.
- 18m ABOVE DATUM LEVEL INCLUDES:  
1.5m LIMIT OF VERTICAL DEVIATION.

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
P01	08/06/21	First Revision	WS	ET	JK

**Network Rail**

Project  
Cambridge South Infrastructure Enhancement Scheme

Drawing Title  
DEEMED PLANNING DRAWINGS  
PARAMETER PLANS  
HEIGHTS

Scale(s)  
1:2500 @A1 to

Drawing Number  
158454-ARC-ZZ-ZZ-DRG-LEP-000102

Revision  
P01

Sheet Size A1 594 x 841



