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South Trumpington

Sites Submission Consultation
Environmental Report

RAMBOLL

Bright ideas.
Sustainable change.

South Trumpington
Sites Submission Consultation Environmental Report

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Contents

1. Introduction

Ramboll UK Limited ('Ramboll) has been appointed by British Land (the 'Client') to undertake a strategic environmental appraisal of the potential future development opportunity of land located at South Trumpington, Cambridge (the 'Site').

The promoter, British Land, owns the Site at South Trumpington, Cambridge and are committed to promoting the Site through the emerging Greater Cambridge Local Plan.

British Land have a strong reputation of delivering state-of-the-art developments, in the best strategic locations, built and managed to British Land's industry-leading standards. They do this by bringing together their unique expertise in the delivery of complex developments, as well as their award-winning sustainability practices.

The submission, which this document forms part of, demonstrates that the Site is suitable, achievable, and deliverable for allocation and, ultimately, development, subject to future planning permission(s).

This submission replaces all technical information provided to Greater Cambridge by the previous landowner (Grosvenor).

2. Purpose of Report

The purpose of the strategic environmental appraisal is to accompany the Client's response to the 'Sites Submission Consultation' process of the Cambridge City Council (CCC) and South Cambridgeshire District Council (SCDC) as part of the Greater Cambridge Local Plan making process.

The report summarises the findings of desk-top reviews of publicly available environmental data, site surveys and technical reports in order to:

- establish a robust and evidenced baseline;
- summarise sensitive receptors;
- identify potential environmental impacts and effects; and
- identify design, enhancement and mitigation measures that would be explored by the Client to avoid and minimise significant environmental effects.

The technical reports have been prepared by specialist teams appointed by the Client (including Ramboll), which also accompany the Sites Submission Consultation.

The outcomes of the strategic environmental appraisal are presented in this report and serve to provide supporting documentation to support the future promotion and vision for the Site.

3. Vision for Land at South Trumpington

The Vision is to provide an exemplar and deliverable growth proposition for Cambridge, offering a rich mix of uses to potentially include, floorspace for a wide range of jobs (Offices, Science and Technology, Research and Development (R&D), Mid-Tech), a range of housing types including private, affordable and/or essential worker housing, community facilities, mobility hubs, complementary retail, and supporting infrastructure. There is an opportunity to extend the

existing Country Park and provide attractive public routes through, connecting into the neighbouring Trumpington Meadows local centre.

4. Scope and Methodology

This strategic environmental assessment has given consideration to the following environmental topics in collaboration with the respective specialist consultants:

- Socio-Economics (Volterra);
- Transport and Access (KMC);
- Air Quality (Ramboll);
- Noise and Vibration (Ramboll);
- Ecology (Greengage);
- Ground Conditions and Contaminated Land (Ramboll);
- Water Resource and Flood Risk (WSP/Ramboll);
- Archaeology (Museum of London Archaeology (MoLA));
- Built Heritage (MoLA); and
- Landscape and Visual (FPCR).

In respect of wind microclimate; daylight, sunlight and overshadowing; waste; climate; and major accidents and disasters, these would be given due consideration during the design evolution process with standard design mitigation measures embedded and/or committed to.

Example mitigation measures that would be explored during design evolution process include the following:

- Wind microclimate: Use of landscape planting in areas of public realm and open space to reduce wind speeds;
- Daylight, sunlight and overshadowing: Use of spatial buffers/building set-backs between the edge of the Site boundary and adjacent existing residential properties to the east, as well as commensurate on-site building height;
- Waste: Adoption of sustainable waste management principles and practices to minimise resource use and waste generation, following established whole lifecycle principles;
- Climate: Use of materials with a long design life and minimising greenhouse gas emissions; and
- Major accidents and disasters: Compliance with fire safety building regulations, minimising the risk of on- and off-site flooding and implementation of secure by design principles to reduce the risk of crime.

The appraisal for each environmental topic considers the following:

- Proposed consultations during the pre-application process;
- Baseline conditions at the site and within the identified study area;
- Sensitive receptors;
- Potential impacts and effects; and
- Anticipated mitigation and enhancement measures.

The anticipated mitigation and enhancement measures identified for each environmental topic have given consideration to the design, mitigation and enhancement measures which would be explored and embedded in the masterplan design (as appropriate) and would be

implemented/committed to during the construction and completed development stages (as appropriate).

5. The Opportunity

It should be noted that this report has been prepared to support a vision and evolving opportunity at the Site. At this stage, there is an opportunity to provide a deliverable growth proposition for Cambridge comprising a mixed-use urban extension comprising between approximately 400-1,000 homes and up to approximately 260,000 m^2 (GEA) of non-residential floorspace including flexible employment uses and supporting infrastructure. The range of floorspace and land use is necessary for flexibility at this early stage of the planning process, as explained more fully in the supporting 'Vision Document' (AAM), and will be explored further through design evolution and pre-application discussions with Greater Cambridge Shared Planning Service (GCSPS).

In order to undertake an initial strategic environmental appraisal and assess the Site's potential for development, an 'Illustrative Development Option' has been considered which comprises:

- approximately 225,000 m^2 GEA (non-residential floorspace); and
- approximately 400 homes.

Each technical topic provides further commentary on potential impacts, effects and mitigation that may be required in respect of the wider range of floorspace and land use optionality.

The Illustrative Development Option as shown on Figure 1 represents a commercially led, mixed-use proposal for the Site, the preferred approach and land use (at present) of the landowner, British Land.

Figure 1: Illustrative Development Option

The height profile for the Illustrative Development Option currently comprises the following:

- Northen plots (north of the Green Common) up to 5 storeys; and
- Southern plots (south of the Green Common) up to 5 storeys.

The proposals have the scope to change up to the maximum range (or above) subject to design evolution, viability and/or securing additional grant funding. The Opportunity seeks to promote the Site for Use Classes B, E, F, C1, C3, Sui Generis and car parking / travel hub(s).

6. Site

6.1 Site Location

The site is located in Trumpington, Cambridge (centred at UK national grid reference TL 437 539), approximately 3.7 km south-west of Cambridge city centre as presented in Figure 2.

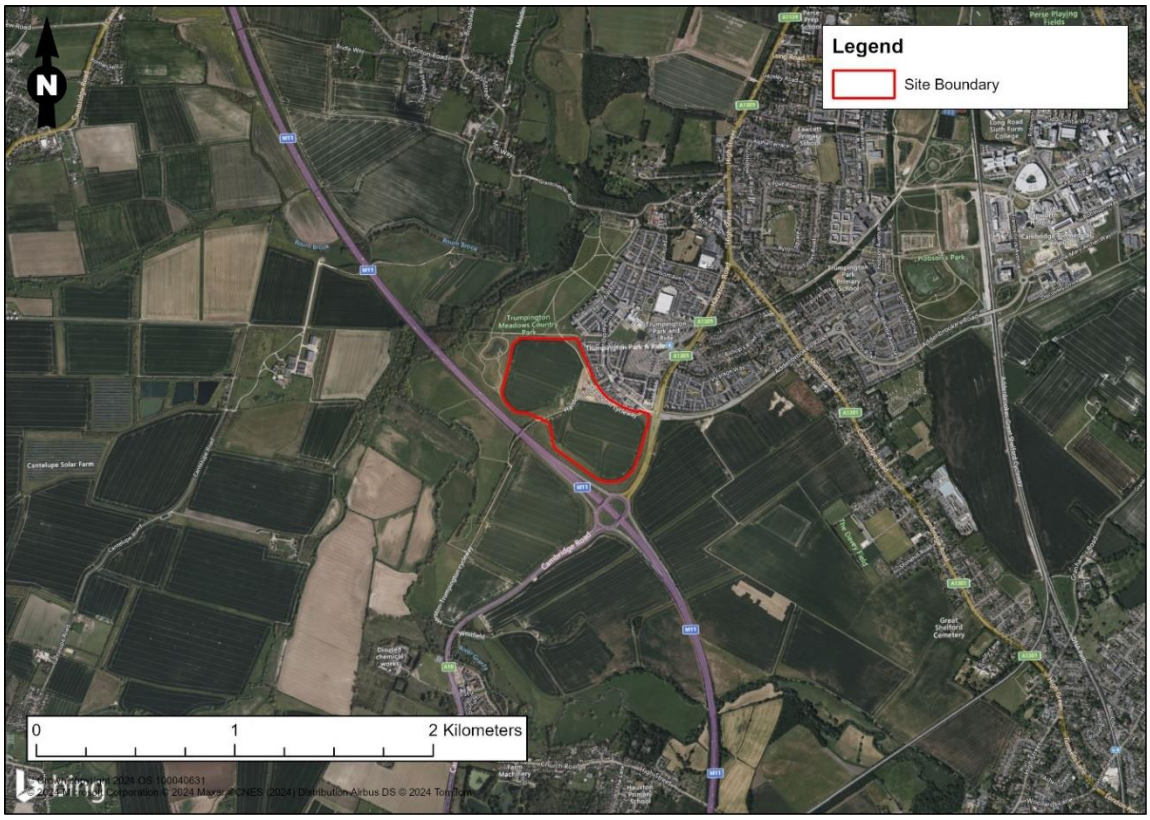

Figure 2: Site Location

The land use context of the site is defined by a mix of road infrastructure, predominantly residential and agricultural land.

The boundaries and surroundings of the site comprise the following:

- North-west, North: Trumpington Meadows Country Park, beyond which is the River Cam;
- North-east, East: Forester Road/Jupiter Way, Trumpington Meadows residential development, Trumpington Meadows Primary School, Trumpington Park&Ride, Trumpington residential development;
- South-east: Hauxton Road (A1309), beyond which are agricultural fields; and
- South, south-west and west: M11 and M11 Junction 11 beyond which are agricultural fields, as well as the proposed (and approved) Cambridge South-West Travel Hub. An earth bund (approximately 3 m tall), covered with vegetation, has been formed along the majority of the site boundary with the M11.

The South Western Travel Hub (SWTH) is currently under construction to the south-west of the site by the Greater Cambridge Partnership (GCP).

6.2 Site Description

The Site comprises a single parcel of agricultural land separated into smaller parcels by existing hedgerows and extends to approximately 30.1 hectares (ha). The Site is also dissected by a cycle path that links Trumpington to the village of Harston to the south.

The Site is relatively level, with a gentle fall west to east, but can appear to rise when looking eastwards from the west/north-western edges of the Site.

The Site is located to the south-west of Cambridge city centre. Part of the Site is currently used as construction welfare/ logistics associated with Trumpington Meadows.

7. Policy Framework

The Site is located within the administrative areas of CCC and SCDC. CCC and SCDC are located within the jurisdiction of Cambridgeshire County Council (CCoC).

The statutory development plan for the Site located within CCC comprises the following:

- Cambridge Local Plan, 2018[1] (including adopted policies map); and
- Cambridgeshire and Peterborough Minerals and Waste Local Plan[2].

The statutory development plan for the Site located within SCDC comprises the following:

- South Cambridgeshire Local Plan, 2018[3];
- Cambridge Southern Fringe Area Action Plan, 2008[4]; and
- Cambridgeshire and Peterborough Minerals and Waste Local Plan.

CCC and SCDC are currently working together to develop a joint local plan, for the two administrative areas, referred to as Greater Cambridge Local Plan[5]. This process has been ongoing since 2019, with public consultations taking place in 2020, and late 2021, ahead of both councils agreeing the 'Development Strategy Update' in early 2023. An update to the Local Plan making timetable was agreed in March 2024, aiming for Examination Submission in Summer/Autumn 2025.

[1] Cambridge City Council, 2018. Cambridge Local Plan. Online. Available at: https://www.cambridge.gov.uk/media/6890/local-plan-2018.pdf [accessed 18/09/2024]

[2] Cambridgeshire County Council, 2021. Cambridgeshire and Peterborough Minerals and Waste Local Plan. Online. Available at: https://www.cambridgeshire.gov.uk/business/planning-and-development/planning-policy/adopted-minerals-and-waste-plan [accessed 21/08/2024]

[3] South Cambridgeshire District Council, 2018. South Cambridgeshire Local Plan. Online. Available at: https://www.scambs.gov.uk/media/17793/south-cambridgeshire-adopted-local-plan-2018.pdf [accessed 18/09/2024]

[4] South Cambridgeshire District Council, 2008. Cambridge Southern Fringe Area Action Plan. Online. Available at: https://www.scambs.gov.uk/planning/local-plan-and-neighbourhood-planning/the-adopted-development-plan/cambridge-southern-fringe-area-action-plan-aap/ [accessed 18/09/2024]

[5] Greater Cambridge Shared Planning, 2021. Greater Cambridge Local Plan. Online. Available at: https://consultations.greatercambridgeplanning.org/sites/gcp/files/2021-10/First%20Proposals%20-%20FINAL%20FURTHER%20REVISED%2028.10.21-red.pdf [accessed 18/09/2024]

8. Baseline Position

To characterise the existing baseline position the Client has undertaken or is scheduled to undertake the following surveys:

- Ecology
  - Badger;
  - Bats (activity surveys static monitoring and walked activity transects);
  - Breeding birds;
  - Reptiles;
- Baseline noise survey (Undertaken 12 August 2024); and
- Agricultural land classification (Undertaken February 2024).

The detailed baseline for each environmental topic (including the outcomes of surveys undertaken) and the requirement for any further surveys are summarised in Section 9.

9. Assessment of Proposal

This section summaries the potential environmental impacts and likely effects that are at this stage anticipated to arise in connection with all stages of the Illustrative Development Option, as outlined in the methodology.

9.1 Socio-Economics

Socio-Economics
Proposed Consultations Consultation would be sought from a range of potential stakeholders, which may include the following: • CCC; • SCDC; • East of England Ambulance Service NHS Trust; • NHS Cambridgeshire and Peterborough Integrated Care Board; • Cambridgeshire Fire and Rescue Service; • Cambridgeshire Constabulary; • Local business / business bodies; • Local residents; • Environment Agency; • Natural England; • National Highways; • Skills and education bodies – such as local schools, colleges, higher education and any bespoke skills providers; • Local community groups and assets; and • Equality groups and religious institutions.
Baseline Conditions The socio-economic baseline conditions for the existing site and the study area have been established through a process of initial desk-based research. Baseline conditions have been assessed at the following geographic study area levels: • Local: Trumpington, and Harston and Comberton wards; • Neighbourhood/District: Cambridge, South Cambridgeshire, Greater Cambridge; • County: Cambridgeshire; • Regional: East of England; and • National: England. Where baseline conditions for a certain geography are not reported it is because data is not available at that level. Data sources used in this process of desk-based research to establish existing baseline conditions include the Office of National Statistics (ONS) and NOMIS. <u>Demographics</u> • The Local Area has a higher proportion of residents aged 0-19 (26 %) than Greater Cambridge, the East of England, and England (all at 23 %).[6] • Both the Local Area and Greater Cambridgeshire have higher qualification levels than the East of England and England. In the Local Area, 8 % of residents have no qualifications, and in Greater Cambridgeshire, it's 11 %, compared to 18 % for both the East of England and England. [7]

[6] ONS, 2021. Census 2021 TS007B - Age by broad age bands
[7] ONS, 2021. Census 2021 TS067 - Highest level of qualification

Socio-Economics

- In the Local Area, 62 % of residents hold level 4 qualifications (equivalent to the first year of a university degree), compared to 52 % in Greater Cambridgeshire, 32 % in the East of England, and 34% in England.
- In 2022/23 76.4 % of students in Cambridge achieved strong GCSE results, but only 54.9 % of those eligible for free school meals did. In South Cambridgeshire, 74.7 % of students achieved strong GCSE results, but only 40.4 % of students eligible for free school meals did, below the national average (43.2 %).
- In the English Indices of Multiple Deprivations (IMD), Lower Super Output Areas (LSOAs) across Cambridge on average rank in the 6th most deprived decile nationally. LSOAs that make up South Cambridgeshire rank on average in the 8th most deprived decile nationally.
- Concentrations of poverty are found in areas in the north and north-east of Cambridge, rather than the south.
- Between July 2023 and July 2024, the Cambridgeshire postcode area had a crime rate of 26.3 per 1,000 workday people, compared to 34.1 across England and Wales. Cambridge had the 20th lowest crime rate out of 99 postcode areas. Crime is more concentrated in the north of the city, with lower levels south of the city, where the site is located.
- 23 % of adults reported high anxiety levels from 2020-22, and Cambridge underperforms on young people's mental health.

Economy and Labour Market

- Employment in the Local Area grew by 37 % between 2015 and 2022, from 15,900 to 22,800, significantly outpacing Greater Cambridgeshire (9 %), the East of England (9 %), and England (8 %). Growth was driven by the professional, scientific, and technical sector, which grew by 14 % (4,100 people).
- The unemployment rate in Cambridge (6.1 %) and South Cambridgeshire (6.6 %) is higher than in the East of England (3.8 %) and England (4.0%).[8]
- The claimant count is lower in Cambridge (2.1 %) and South Cambridgeshire (1.9 %) than in the East of England (3.5 %) and England (4.4 %). In Trumpington ward, it is 3.2 %, while in Harston and Comberton ward, it is 1.8 %.[9]
- The Cambridge office and laboratory market has grown significantly since the start of the millennium, with total stock rising from 0.5 m² in the year 2000 to over 1 m² at the end of 2022. The rate of growth has accelerated with +0.3 m² of the growth delivered since 2013.[10]
- In 2023, Cambridge recorded an actual take-up of 60,400 m² of office and laboratory space. According to Bidwells, companies are currently seeking 74,300 m² of office space and 64,100 m² of laboratory space. This comparison highlights that current market demand significantly exceeds 2023's actual take up levels, showing strong demand.[11]
- Rising living costs have led to increased food bank reliance, with 13,121 food parcels distributed in 2022/23, up from 9,467 in 2020/21.
- The income gap between the highest and lowest earners is the second-largest among 58 UK cities, with the top 80th percentile earning 4.2 times more than the bottom 20th percentile.
- Cambridge ranked 275th out of 324 UK local authorities in the Social Mobility Index, particularly for young people from poorer backgrounds.

Housing

- In 2023, the median house price in Cambridge was £500,000 and in South Cambridgeshire, £425,000, both significantly higher than in the East of England (£340,000) and England (£290,000).[12]
- The house price-to-earnings ratio in Cambridge was 12.2 and 10.1 in South Cambridgeshire, compared to 9.4 in the East of England and 8.3 in England.[13]

[8] ONS, 2024. Annual Population Survey
[9] ONS, 2024. Annual Population Survey
[10] Bidwells, 2023. Max Bryan summary of proof of evidence: Cambridge North
[11] Bidwells, 2024. Offices & Labs Databook Cambridge - July 2024
[12] ONS, 2024. House price to residence-based earnings ratio
[13] ONS, 2024. House price to residence-based earnings ratio

Socio-Economics

Social Infrastructure

- **Early years:** Facilities across Cambridge, particularly nearby Trumpington, are under pressure.[14]
- **Primary and secondary schools:** The fall in annual births and other demographic changes have resulted in a reduction in the roll in some parts of the district; however, the district has experienced a relatively high influx of families from Ukraine, which has put pressure on the roll at some schools. [15]
- **SEND schools:** Growth in the number of pupils with special education needs and disabilities (SEND), and with an education health and care Plan (EHCP), means that additional places will be required across the age range, need types and districts. SEND schools in the area are operating at capacity and unable to take on new students.
- **Community centres and libraries:** Existing local facilities are meeting current demand generated by the existing population.[16]
- **Indoor and outdoor sports facilities:** Existing facilities do not have sufficient capacity to meet the demands of a growing population.[17]
- **GPs:** Existing GPs are slightly over the recommended patient to GP full-time equivalent ratio.

Sensitive Receptors

Identified sensitive receptors comprise the following:

- **Existing off-site and future on-site residents:** for effects relating to employment, community, open, green and play space, social infrastructure and crime;
- **Existing off-site and future operational workers on-site:** for effects relating to employment and public realm;
- **Construction workers on-site:** for effects relating to employment skills and opportunities;
- **Existing and future businesses:** for effects relating to commercial floorspace need, public realm, and crime;
- **Existing and future social infrastructure assets and users:** for effects relating to GP provision, education provision, and open, green, and play space; and
- **Local Economy:** for effects relating to spending in the local economy by workers and residents.

Potential Impacts and Effects

The following table summarises the potential socio-economic impacts and effects considered likely to arise during the construction and completed development stages.

Construction Stage		Completed Development Stage	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Construction of the Illustrative Development Option and introduction of a construction workforce	• Construction employment generation	• Completion of the Illustrative Development Option and provision of commercial floorspace	• Employment generation
	• Construction worker expenditure within the local economy		• Demand for commercial floorspace needs and contribution towards specific office and R&D floorspace (Use Class E(g)) needs
	• Employment skills and opportunities		• Employment and skills opportunities for local residents

[14] CCC, 2024. Cambridgeshire's 0-25 Education Organisation Plan
[15] CCC, 2024. Cambridgeshire's 0-25 Education Organisation Plan
[16] CCC, 2019. Community Centres Strategy
[17] GC, 2016. Indoor Sports Facility Strategy 2015-2031

Socio-Economics			
		• Completion of the Illustrative Development Option and provision of housing	• Contribution toward housing provision and affordability
			• Crime and community safety
		• Completion of the Illustrative Development Option and introduction of resident and worker population	• Spending in the local economy by workers and residents
			• Demand for GP services
			• Demand for education provision (primary and secondary)
			• Contribution towards open space, green space, and play space need

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

Design Stage

- The Illustrative Development Option would be designed to prioritise sourcing from local suppliers.
- The Illustrative Development Option would incorporate green space, health amenities, and sports/leisure space that would not only support the population of the Illustrative Development Option but also provide a community use for residents within the local and neighbourhood areas.
- The proposed development provides an opportunity to potentially deliver much-needed social infrastructure and recreational spaces, benefiting the wider community.
- Growth in Cambridge has been driven by the professional, scientific, and technical sector. The Illustrative Development Option would support the continued growth of these industries.
- Ensuring access to employment and economic benefits by promoting a mixed-use development (residential, commercial, and recreational).
- Suitably flexible development parameters and specifications would allow flexibility for the outline components of the Illustrative Development Option to respond to changing market demands.

Construction Stage

- Industry best standard mitigation measures would be followed through the delivery of a construction employee code of conduct.
- During construction stage, there would be opportunities to deliver construction training and apprenticeships for local people.

Completed Development Stage

- The Illustrative Development Option would deliver a wide range of housing tenure types to residents on a range of incomes.
- The Illustrative Development Option would integrate commercial and business spaces that would attract and retain skilled workers.
- The Illustrative Development Option would provide a large contribution to commercial floorspace, of a type in line with Greater Cambridgeshire's policy ambitions.
- There is expected to be employment generation in both low and high-skilled roles. The Client would commit to measures to support employment and skills in the section 106 agreement.

Summary

- During construction, the Illustrative Development Option has the potential to generate local employment opportunities, boost spending in the local economy, and provide construction training and apprenticeships, with disruptions mitigated through a construction employee code of conduct.

Socio-Economics
• The Illustrative Development Option also has the potential to deliver much-needed social infrastructure, and recreational spaces, alongside green spaces and amenities for community use. It could support affordable housing to promote socio-economic diversity and housing equity, while accommodating flexibility to meet changing market demands. Upon completion, it may increase demand for public services, offer a range of housing types, and provide commercial floorspace aligned with Greater Cambridgeshire's policy ambitions, generating employment across skill levels.

9.2 Transport and Access

Transport and Access
Proposed Consultations Consultation would be sought from a range of potential stakeholders, which may include the following: • CCC and SCDC (Greater Cambridge Shared Planning Services) – in their role as the local planning authorities, with a focus on matters relating to design and parking. • CCoC – Consultation with the transport authority to scope the Transport Assessment (which will inform the EIA) and agree the Transport Strategy. • National Highways – to agree the assessment of the Strategic Road Network (SRN). • Greater Cambridge Partnership – with a focus on the new South West Travel Hub and Busway link that passes through the Site. Other stakeholders such as Camcycle would be consulted on matters relating to cycle infrastructure.
Baseline Conditions To assess transport related effects, a study area for transport will be agreed with the wider EIA team and transport authorities. In accordance with standard practice, a wider assessment area will be agreed which will be refined through initial 'sifting' to identify the study area where effects may potentially be significant. The Institute of Environmental Management and Assessment (IEMA) identifies the following 'rules' that direct this initial sifting stage: • Highway links where traffic flows will increase by more than 30 % (or HGVs will increase by more than 30 %), and/or; • Highway links of high sensitivity where traffic flow are increased by 10 % or more. Sensitive receptors include people at home/work, young/old, locations with schools, hospitals, churches, recreational areas, junction with capacity issues or routes with road safety concerns. Based on the above and to inform this initial appraisal, it is likely that the study area will comprise of the area shown on Figure 3; however, this will be subject to consultation and scoping at a later stage. The anticipated study area has been determined on the basis of numerous sensitive receptors such as Trumpington Meadows Country Park, adjacent residential developments, a primary school, existing public rights of way and the potential for local highway thresholds to be increased by more than 10 % or even 30 % on the A1309. Given the high volume of traffic on the M11, it is considered unlikely that the Illustrative Development Option would increase the required thresholds, but this would be confirmed through a trip generation exercise.

Transport and Access

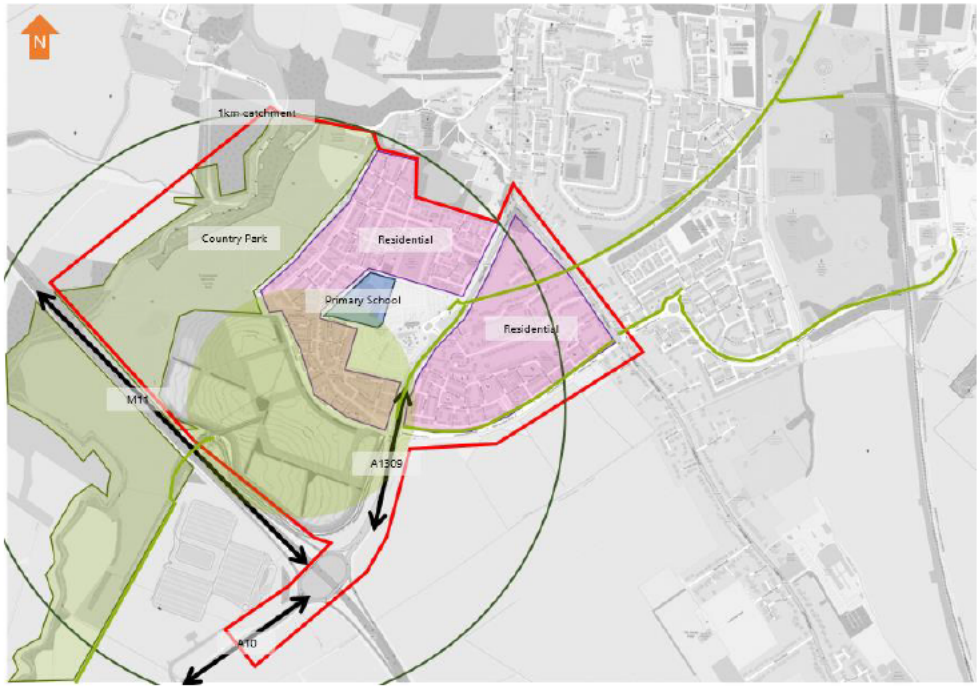

Figure 3: Anticipated Transport Study Area

Active Travel

The active travel within the Site and study area is shown in Figure 4 and comprises the following:

- Existing bridleways through the existing agricultural land (surrounding the Site), which connect to paths in Trumpington Meadows Country Park.
- High-quality active travel link from the Site to the south via the Melbourn Greenway.
- High-quality active travel link to the east towards Cambridge Biomedical Campus via Addenbrooke's Road.
- High-quality active travel link from Trumpington Park&Ride towards the emerging Cambridge South Station and Cambridge Station via the Cambridgeshire Guided Busway.
- Poor active travel link between Melbourn Greenway through the Site and Cambridgeshire Guided Busway via Trumpington Park&Ride due to the permeability being impacted by the built environment. Available links are either shared with mix-traffic or shared-use but not of best practice standard. Wayfinding is also poor.
- Trumpington Meadows Country Park is used by walkers, runners, buggies and dogs (observational, no current survey data).

Transport and Access

Figure 4: Active Travel Links within Site and Study Area

Public Transport

The public transport within the Site and study area is shown in Figure 5 and comprises the following:

- Buses that operate to those destinations with relatively low congestion due to the Cambridgeshire Guided Busway and bus lanes. Existing bus stops closest to the Site are located at Trumpington Park&Ride. Here, buses are available at high-frequency (approximately six buses per hour) towards the future Cambridge South railway station (opening 2025), Cambridge Biomedical Campus, Cambridge City Centre and to the north of Cambridge.
- The approved SWTH is located to the south of the Site, on the opposing side of the M11. Here, bus services are proposed to similar destination as Trumpington Park&Ride, also at a high-frequency (approximately six buses per hour). Current GCP forecast indicates that SWTH is targeted for completion in 2026. The Client's project team is in ongoing communication with the SWTH GCP team.
- Neither Trumpington Park&Ride or SWTH provide access to bus stops within 400 m (the suggested walking distance to bus stops by the Charted Institute for Highways and Transportation) from the majority the Site.
- Cambridge South railway station is due to open in Summer 2025. The walking distance between the centre of the Site and the station will be approximately 2.7 km. This would be approximately 35 minutes walking or 10 minutes cycling (based on high-level google maps assessment). It is considered that this will be a strong trip attractor from the Illustrative Development Option for connectivity to London and the rest of East Anglia.

Transport and Access

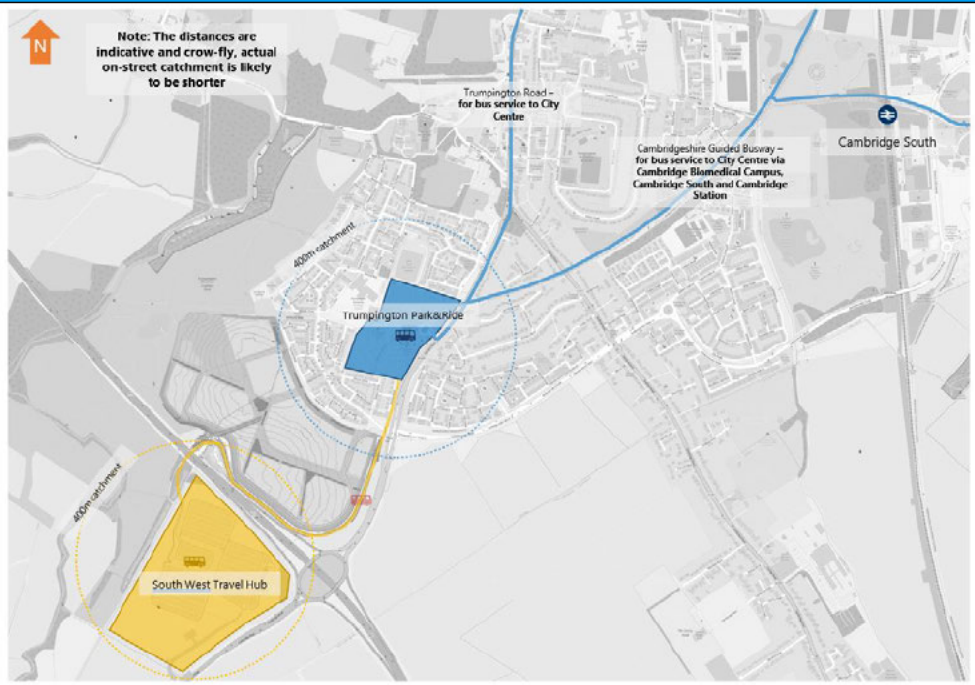

Figure 5: Public Transport Links with Site and Study Area

Driving

- The Site currently has no vehicular access. However, vehicular access to the Site can be achieved via a new junction from Osprey Drive that will provide a route through to Hauxton Road. This will provide a vehicular link to the highway utilising land that is available to the Client.
- The Site is bounded to the south by the M11 and M11 Junction 11. At this point, there are two lanes in each direction, plus a slip lane in each direction. The Annual Average Daily Flow (DfT, 2023) is approximately 77,000 total vehicles, including 9,400 HGVs.
- The Site is bounded to the east by A1309 Hauxton Road. Here, there are three lanes in each direction, with one lane in a northbound direction being dedicated for access to Trumpington Park&Ride. The Annual Average Daily Flow (DfT, 2023) is approximately 33,000 total vehicles, including 420 HGVs.
- The Site is bounded to the north by Forester Road/Jupiter Way. Both are lightly trafficked residential streets at the edge of the Trumpington Meadows development.
- The closest junction to the Site is the A1309/Addenbrooke's Road/Osprey Drive.

Other

The are no Public Rights of Way through the Site; however, it is understood that the paths in the surrounding agricultural land and land within Trumpington Meadows Country Park are used by equestrians.

Transport and Access

Sensitive Receptors

Receptors located along highway links within the initial assessment area will be identified with consideration of the core EIA criteria for transport which will be used to assess effects.

At this stage, identified sensitive receptors are likely to comprise pedestrians, cyclists, public transport and drivers along the following links:

- Osprey Drive;
- Melbourn Green way through the Site;
- Future Busway through the Site; and
- M11 junction 11.

Potential Impacts and Effects

The following table summarises the potential transport and access impacts and effects considered likely to arise during the construction and completed development stages.

Construction Stage		Completed Development Stage	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Construction of the Illustrative Development Option and associated change in trip generation.	• Driver delay • Accidents and safety • Pedestrian and cycle amenity • Pedestrian and cycle severance • Pedestrian and cycle delay • Pedestrian and cycle fear and intimidation • Public transport demand	• Operation of the Illustrative Development Option.	• Driver delay • Accidents and safety • Pedestrian and cycle amenity • Pedestrian and cycle severance • Pedestrian and cycle delay • Pedestrian and cycle fear and intimidation • Public transport demand

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

<u>Design Stage</u>

- A transport assessment would be prepared which would assess the effects of vehicle trips associated with the Illustrative Development Option on the local highway network. Transport effects in respect of highway capacity would be assessed using appropriate traffic models such as the emerging model which is under preparation to assess the emerging Local Plan. The likely effects would be assessed against key IEMA criteria.
- Where significant effects are identified, appropriate mitigation measures would be considered. Mitigation measures would either be embedded into the design or control documents.
- When developing parking provision for the Illustrative Development Option, consideration would be given to the CCC Parking criteria. However, car parking provision would be below the maximum standards, in accordance with the vision-led approach of the Client which aims to minimise the environmental effects of the Illustrative Development Option.
- The design would be developed to maximise access by sustainable modes of transport (following a transport hierarchy of walking, cycling, wheeling, public transport).
- The Illustrative Development Option would incorporate a parking strategy that promotes sustainable travel patterns; reduces reliance on the private car; and monitors need across the demolition and construction phases. Consolidated car parking would minimise traffic and enable people focused streets.

Transport and Access
• The design and layout of the Illustrative Development Option would be developed to prioritise active travel movements based on best practice design guidance. • Accessibility, permeability and legibility would be delivered through the masterplan design, Parameters and Design Code. Secure by Design principles would be outlined in the Design Code. <u>Construction Stage</u> • Cumulative transport and accessibility impacts of cumulative schemes in South Cambridge would be considered and where significant effects are identified mitigation would be proposed. • Opportunities for minimising the construction impact of traffic through consolidation of construction worker parking, consolidation/reduction of deliveries where possible and the maintenance of public rights of way (PRoW)/active travel routes which could be impacted by construction routing. • A Framework Construction Traffic Management Plan (CTMP) would be developed. • A Construction Worker Travel Plan would be prepared. <u>Completed Development Stage</u> • Active travel routes would be maintained through the Illustrative Development Option. • The Illustrative Development Option would be designed to maximise the number of people living in/working in/visiting South Trumpington who travel by sustainable means. • A Framework Travel Plan would be developed for the Illustrative Development Option including land-use specific travel plans to monitor the completed development stage. • A continuous Car Parking Management Plan would be put in place to review the need for parking in later phases. • A monitor and manage approach would be adopted across the phases of the Illustrative Development Option to ensure the most appropriate transport interventions are implemented.
Summary • Robust technical assessments would be undertaken and would seek to inform the masterplanning design evolution process. • The effects of construction traffic would be managed through the implementation of a Construction Traffic Management Plan and Construction Worker Travel Plan. • The Illustrative Development Option would adopt a vision-led transport strategy. Key considerations in this regard will be the utilisation of public transport infrastructure, a scheme that supports active travel and low car parking provision. • The location of the Illustrative Development Option would fully utilise the local facilities that are in place.

9.3 Air Quality

Air Quality
Proposed Consultations Consultations would be sought from the following stakeholders: • CCC – Regarding the proposed scope and methodology of the air quality assessment. • SCDC – Regarding the proposed scope and methodology of the air quality assessment.
Baseline Conditions <u>Background</u> Planning policy requires compliance with national air quality objectives (NAQOs); however, there is increasing divergence between NAQOs and purely health-based criteria developed by the World Health Organisation (WHO). Many Local Planning Authorities (LPAs) are working towards compliance with WHO interim targets although these may not be adopted into formal planning policy. Throughout this appraisal pollutant concentrations have been compared to the NAQOs and the following WHO interim targets: • WHO interim target 3 for nitrogen dioxide (NO2) (20 µg/m³). • WHO interim target 4 for particulate matter 10 micrometres or less in diameter (PM10) (20 µg/m³) and • WHO interim target 4 for particulate matter 2.5 micrometres or less in diameter ($PM_{2.5}$) (10 µg/m³). To understand what air quality is like within the study area of the Site, and the Site itself, it is necessary to identify and understand the baseline air quality conditions in and around the study area. This provides a reference level. <u>Baseline Data</u> The Site is not within or adjacent to an Air Quality Management Area (AQMA). The nearest AQMA (Cambridge) is located approximately 3 km to the north-east of the northern Site boundary which was declared by CCC for exceedances of the annual mean NO_2 air quality objective. *Nitrogen Dioxide* As presented in Figure 6, CCC and SCDC carry out air quality monitoring at several locations near the Site as part of their responsibilities under the Local Air Quality Management regime.

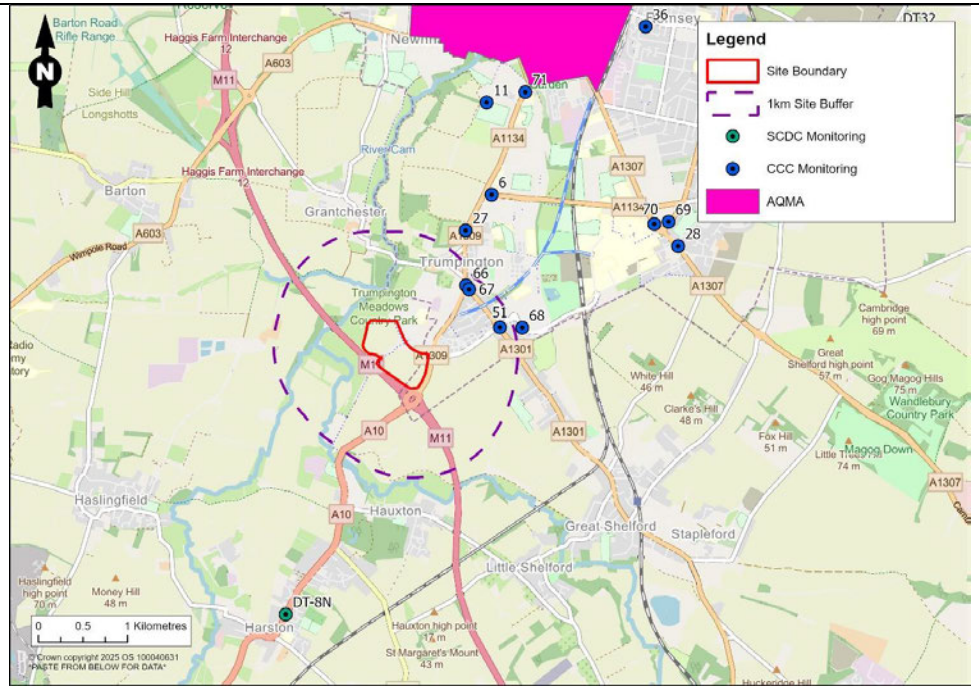

Figure 6: Cambridge City Council and South Cambridgeshire District Council Air Quality Monitoring Locations

A summary of annual mean NO_2 concentrations from these monitoring sites are presented in Table 1.

Table 1: Annual Mean NO_2 Diffusion Tube Concentrations Within CCC and SCDC in proximity to Site

Site ID	Site Type	Within AQMA	Local Authority	Annual Mean NO_2 ($\mu g/m^3$)					
				2018	2019	2020	2021	2022	2023
6	K	No	CCC	37.0	34.0	24.3	25.6	28.7	26.3
11	UB	No	CCC	10.0	11.0	7.4	7.2	8.6	7.6
27	R	No	CCC	20.0	18.0	13.0	12.4	15.7	14.1
28	R	No	CCC	32.0	33.0	21.5	19.6	18.1	16.1
36	S	Yes	CCC	16.0	15.0	11.1	10.9	14.7	11.2
51	R	Yes	CCC	22.0	25.0	14.9	16.5	18.7	15.4
66	K	Yes	CCC	30.0	28.0	20.9	21.1	23.5	24.0
67	K	No	CCC	18.0	19.0	13.8	13.2	14.1	13.6*
68	R	No	CCC	17.0	16.0	12.5	12.2	14.1	14.6

69	K	No	CCC	22.0	21.0	15.4	17.2	19.7	18.2
70	R	No	CCC	21.0	21.0	16.7	16.2	17.8	17.6
71	K	No	CCC	26.0	25.0	14.5	18.7	18.9	18.2
DT-8N	R	No	SCDC	17.3	15.3	12.3	13.1	13.0	11.3
National Air Quality Objective (NAQO)				**40**					
World Health Organisation (WHO) Interim Target 3				**20**					
Notes: S = Suburban K = Kerbside R = Roadside UB = Urban Background *Data capture = 50%									

The most recent Air Quality Annual Status Reports (ASR) available at the time of writing[18,19] confirmed that the NO_2 annual mean NAQO were met at all monitoring locations within the study area over the past six years. There is a decreasing trend in NO_2 concentrations between 2018 and 2023 which is expected to continue in the future.

The monitoring locations nearest to the Site are 51, 66, 67 and 68 and in 2023 recorded annual mean NO_2 concentrations of 15.4µg/m³, 24.0µg/m³, 13.6µg/m³, and 14.6µg/m³ respectively, well below the NAQO and WHO interim target 3 (apart from location 66). Monitoring locations 51 and 68 are classified as roadside (greater than 1 m from the kerb) whilst locations 66 and 67 are defined as kerbside (less than 1 m from the kerb). Locations 51, 66 and, 67 are located along the A1301 (Shelford Road) and therefore, monitored pollutant concentrations at these locations will be heavily influenced by road traffic emissions.

The reported 2023 annual mean concentrations for the nearest monitoring locations are well below the NAQOs, with the highest monitoring concentration of 26.3 µg/m³ reported at location 6 which is situated along the A1134 and is less than 1 m from the kerb. Satellite imagery shows that there is queuing along this road which will likely influence the concentrations at this location. This monitoring location is located approximately 1.7 km from the Site boundary and therefore, it is unlikely to reflect air quality concentrations across the Site.

Available monitoring data indicates that concentrations of NO_2 are currently likely to meet the long and short term NAQOs within the Site.

Particulate Matter

CCC undertake continuous monitoring for PM_{10} and $PM_{2.5}$. The nearest monitoring location CM1, is in Gonville Place in central Cambridge and therefore is not representative of the Site or its environs. However, CCC report that '*Recorded levels of PM_{10} and $PM_{2.5}$ either remained stable or decreased at all monitoring locations in 2023. It is also worth noting that the levels of PM_{10} in Cambridge are below objective levels.*' SCDC report that in 2023 '*For PM_{10} the UK objective and interim target were achieved at all three continuous monitors that returned an annual mean value and two of the continuous monitors achieved the WHO guideline value.*'

Although particulate matter monitoring is not undertaken near the Site, monitoring undertaken by CCC and SCDC within their jurisdictions indicate that concentrations of PM_{10} and $PM_{2.5}$ are likely to meet the long and short term NAQOs within the Site.

Background Concentrations

In addition to measured concentrations, estimated background concentrations from the national maps provided by Defra[20] were obtained for NO_2, PM_{10} and $PM_{2.5}$ for the years 2025, 2030, and 2035 across the Site. The results are presented in Table 2 to Table 4.

Estimated annual mean NO_2 concentrations for 2025, 2030, and 2035 are presented in Table 2.

[18] Cambridge City Council, 2024. Cambridge City Council Annual Status Report 2024.

[19] South Cambridgeshire District Council, 2024. South Cambridgeshire District Council Annual Status Report 2024

20 Background Mapping data for local authorities - 2021 - Defra, UK

Air Quality

Table 2: Estimated NO_2 Annual Mean Background Concentrations

Grid Square	Location	NO_2 Annual Mean (µg/m³)		
		2025	2030	2035
543_254	North-west	6.5	5.2	4.5
544_254	North-east	7.1	5.7	4.9
543_253	South-west	6.8	5.4	4.6
548_253	East	5.8	4.8	4.2
	NAQO	**40**		
	WHO Interim Target 3	**20**		

All the predicted background NO_2 concentrations in Table 2 are well below the NAQO and WHO interim target 3 of 20 µg/m³. Concentrations are highest in to the north-east of the Site within Trumpington and in the south-eastern extent of the Site for the grid square encompassing the M11 and the A1309. Predicted reductions in background NO_2 concentrations between 2025 and 2035 are in the region of 1.6 to 2.2µg/m³ which is reflective of reducing vehicle emissions. The total reduction in pollutant concentrations adjacent to the road network will therefore be higher than this as there will also be a reduction in the direct component from the road. Figure 7 presents the distribution of the background NO_2 concentrations across the Site for 2035.

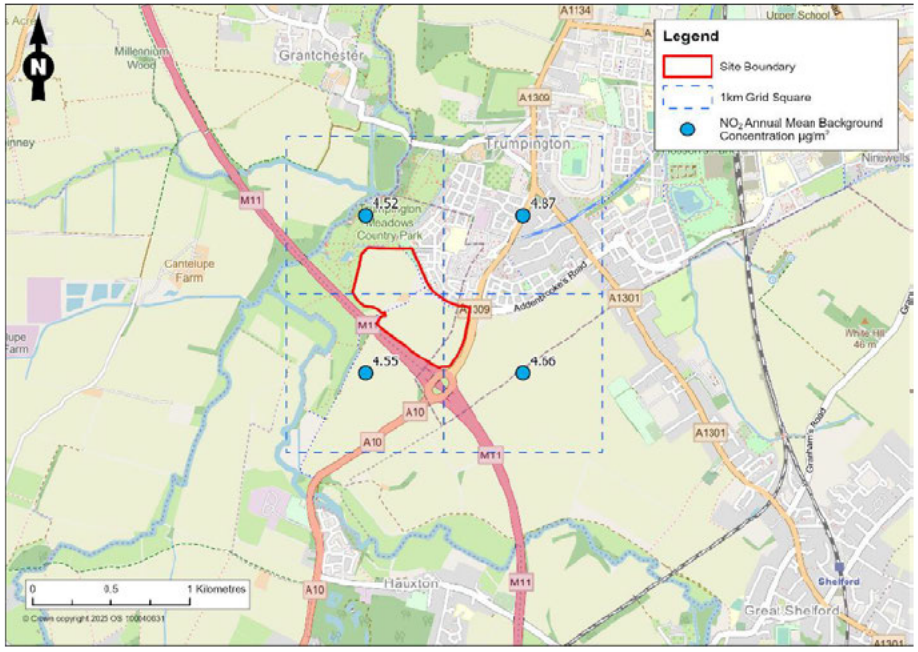

Figure 7: 2035 Annual Mean Background NO_2 Concentrations

Air Quality

Estimated annual mean PM_{10} and $PM_{2.5}$ concentrations for 2025, 2030, and 2035 are presented in Table 3 and Table 4 respectively.

Table 3: Estimated PM_{10} Annual Mean Background Concentrations

Grid Square	Location	PM_{10} Annual Mean (µg/m³)		
		2025	2030	2035
543_254	North-west	14.3	13.9	13.6
544_254	North-east	13.1	12.7	12.4
543_253	South-west	15.0	14.5	14.3
548_253	East	12.7	12.3	12.0
NAQO		**40**		
WHO Interim Target 4		**20**		

The PM_{10} background map data indicates that in 2025 concentrations are below the WHO interim target 4 of 20µg/m³ for all grid squares. Concentrations are highest in the southern half of the Site for the grid squares encompassing the M11. The data shows only small reductions in $PM_{2.5}$ concentrations between 2023 and 2035 of approximately 0.7µg/m³. Figure 8 presents the distribution of the background PM_{10} concentrations across the Site for 2035.

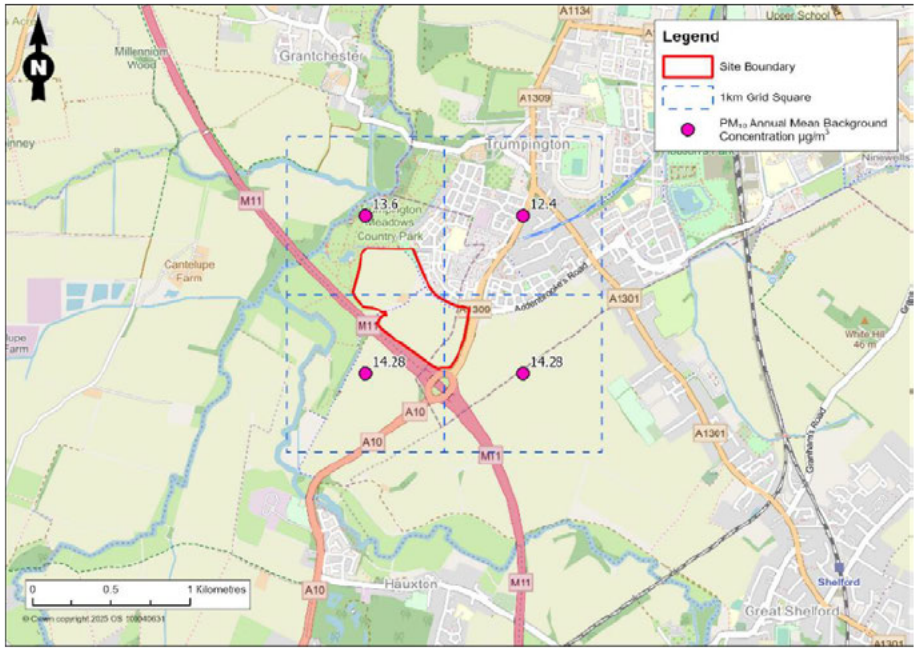

Figure 8: 2035 Annual Mean Background PM_{10} Concentrations

Table 4: Estimated $PM_{2.5}$ Annual Mean Background Concentrations across Site				
Grid Square	**Location**	**$PM_{2.5}$ Annual Mean (µg/m³)**		
		2025	**2030**	**2035**
543_254	North-west	6.6	6.2	6.0
544_254	North-east	6.7	6.3	6.1
543_253	South-west	6.6	6.3	6.0
548_253	East	6.3	6.0	5.7
	NAQO	**20**		
	WHO Interim Target 4	**10**		

The $PM_{2.5}$ background map data indicates that in 2025 concentrations are below the WHO interim target 4 of 10µg/m³ for all grid squares. Concentrations are marginally higher to the north-east of the Site within Trumpington and in the south-eastern extent of the Site for the grid square encompassing the M11 and the A1309. The data show only small reductions in $PM_{2.5}$ concentrations between 2023 and 2035 of approximately 0.6µg/m³. Figure 9 presents the distribution of the background $PM_{2.5}$ concentrations across the Site for 2035.

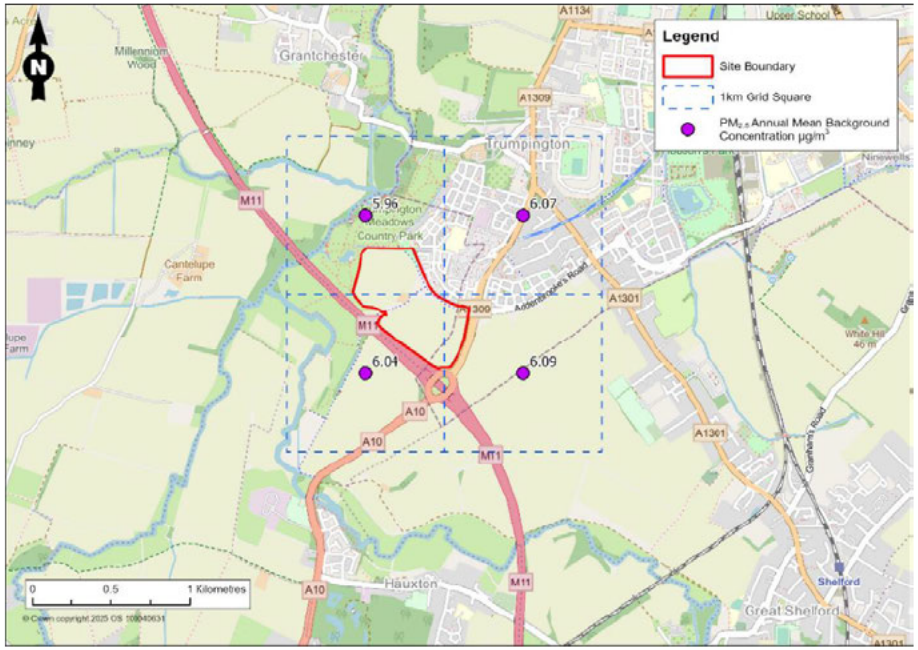

Figure 9: 2035 Annual Mean Background $PM_{2.5}$ Concentrations

Air Quality

The background data presented in Table 2 show a significant reduction in background NO_2 concentrations between 2023 and 2030 which is reflective of the predicted reductions in vehicle NOx emissions over time. In contrast, only small reductions in PM concentrations are predicted. Figure 10 helps to illustrate how vehicle emissions are generally predicted to reduce over time.

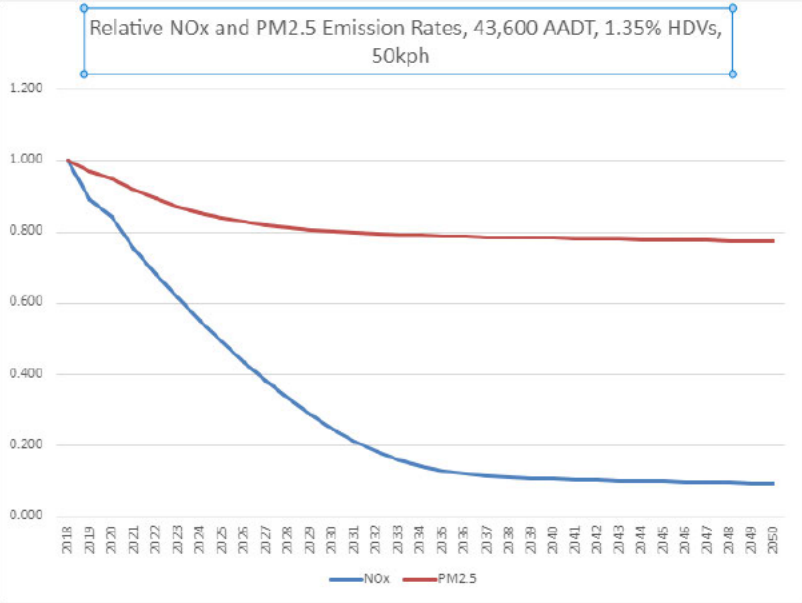

Figure 10: Trends in Vehicle Emissions

Sensitive Receptors

Identified sensitive receptors comprise the following:

- Occupants of existing residential properties within the study area of the Site and of the links where a potential significant increase in transport movements is predicted by the transport consultant;
- Trumpington Meadows Primary School;
- Users of Trumpington Meadows Country Park;
- Future users and occupants of the Illustrative Development Option, taking account of the phased delivery of the Illustrative Development Option; and
- Byrons Pool Local Nature Reserve (ecological receptor).

Air Quality

The Site is located within a Site of Special Scientific Interest (SSSI) Impact Zone[21]. However, the Illustrative Development Option does not meet the following criteria for affecting a terrestrial SSSI[22]:

- Infrastructure: Airports, helipads, and other aviation proposals.
- Air Pollution: Livestock & poultry units with a floorspace > 500 m², slurry lagoons > 750 m² & manure stores > 3,500 tonnes.
- Combustion: General combustion processes >50MW energy input. Including: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/combustion.

This indicates that the Illustrative Development Option is unlikely to have a harmful effect on terrestrial SSSIs and the Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites that they underpin.

Potential Impacts and Effects

The following table summarises the potential air quality impacts and effects considered likely to arise during the construction and completed development stages.

Construction Stage		Completed Development Stage	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Dust and PM_{10} emissions during construction activities.	• Annoyance due to dust soiling. • Risk of human health effects due to the increase in exposure to PM_{10} concentrations for existing off-site and future on-site sensitive receptors (occupants of early phases). • Damage to vegetation and ecosystems.	• Road traffic emissions associated with the operational Illustrative Development Option and associated pollutant concentrations.	• Risk of human health effects due to the increase in exposure to NO_2, PM_{10} and $PM_{2.5}$ concentrations for existing off-site and future on-site sensitive receptors. • Potential for eutrophication and acidification effects on protected conservation areas and habitats.
• Emissions from construction vehicles and associated pollutant concentrations.	• Risk of human health effects due to the increase in exposure to NO_2, PM_{10} and $PM_{2.5}$ concentrations for existing off-site and future on-site sensitive receptors (occupants of early phases).	• On-site combustion plant emissions and associated NOx pollutant concentrations (life safety or back-up generators).	• Risk of human health effects due to the increase in exposure to NO_2, PM_{10} and $PM_{2.5}$ concentrations for existing off-site and future on-site sensitive receptors. • Potential for eutrophication and acidification effects on protected conservation areas and habitats.

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

<u>Design Stage</u>

- The Site boundary alongside the M11 is set back from the motorway by a minimum of approximately 30 m and this offset distance is such that even on the Site boundary Defra background maps indicate that the NO_2 WHO interim target 3 is currently met.

[21] SSSI Impact Risk Zones are a GIS tool developed by Natural England to assess potential risks posed by development proposals to SSSI's.

[22] Natural England, 2024. Impact Risk Zone Threshold Criteria. Online. Available at: https://irz.geodata.org.uk/IRZ/step2.html?irzcode=0300000530000&notes=&location=542293,256879%20(IRZ%20polygon%20centre) [accessed 27/09/2024]

Air Quality
• The Illustrative Development Option would locate sensitive development (residential properties/schools) away from the M11. • The Site boundary alongside Hauxton Road is set back from the road by approximately 30 m. As demonstrated by existing monitoring along the A1309 away from congested junctions, even close to the kerb of the road, the pollutant concentrations are below the NO_2 WHO interim target 3 level. • Whilst vegetation does not absorb pollution appropriate planting can increase atmospheric dispersion and therefore marginally reduce pollutant concentrations. Therefore, where appropriate, planting would be included along the Site boundary. • The Illustrative Development Option would account for internal vehicle movements and the preferred location of non-residential uses in proximity to main circulation routes. <u>Construction Stage</u> • Construction stage dust assessments are qualitative and consider the risk of elevated dust deposition and particulates (PM_{10} and $PM_{2.5}$) concentrations; however, with standard mitigation in place construction dust effects are typically considered to be 'not significant'. An outline Construction Environmental Management Plan (CEMP) would be produced and would outline industry best practice management and control measures to be adopted during the demolition and construction stage • Construction stage traffic impacts are normally below thresholds for an assessment to be necessary as construction traffic is not significant on an annual average basis. Even if construction traffic was such as to require an assessment it is highly unlikely to lead to a significant effect, which would pose a constraint on the Illustrative Development Option. However, routing of construction HGVs would demonstrate sensitivity in respect of existing receptors. • The implementation of a CEMP and Construction Travel Plan would reduce the use of combustion equipment on-site and vehicles travelling to and from the Site. The CEMP would incorporate standard air quality protection measures such as dust management controls. <u>Completed Development Stage</u> • Use of sustainable transport options and minimisation of private vehicle use would be implemented. • Where road traffic accesses the Site, it would be segregated from other road users. • Provision for EV charging would be considered for all development plots. • No significant combustion plant would be introduced with the commercial, community and residential land uses as energy provision for the buildings would be all electric. • The Client is currently considering the feasibility of a data centre on-site. Further modelling and assessment would be required should a data centre facility be explored at the Site in order to consider any adverse air quality impacts. It is anticipated that the effects would be not-significant, assuming standard design practice and the use of selective catalytic reduction (SCRE) to abate NOx emissions.
Summary • Air quality within the Site varies both spatially and temporally due to proximity to pollution sources (the M11 and the local road network) and changes in pollutant emission rates over time. However, the long and short term NAQOs and WHO interim targets for NO_2, PM_{10} and $PM_{2.5}$ are currently likely to be met everywhere within the Site. • Key air quality considerations include potential air quality impacts associated with the construction stage and completed development stage of the Illustrative Development Option. Construction activities have the potential to generate fugitive dust emissions which may give rise to annoyance due to the soiling of surfaces, risk of health effects due to the increase in exposure to PM_{10} concentrations and damage to vegetation and ecosystems (where very high levels of soiling occur). Emissions from vehicles and combustion plant associated with construction and operation of the Illustrative Development Option may affect local air quality and mitigation may be necessary if air quality objectives are exceeded. • Anticipated design and mitigation measures for the construction and completed development stages would ensure that effects on air quality at local sensitive receptors are not significant.

9.4 Noise and Vibration

Noise and Vibration
Proposed Consultations Consultations would be sought from the following stakeholders: • CCC – Proposed meeting to review noise and vibration assessment methodology with planning and environmental health officers. • SCDC – Proposed meeting to review noise and vibration assessment methodology with planning and environmental health officers. Both local authorities share a common noise policy, and it is anticipated that common noise and vibration assessment methodologies can be agreed for both authorities.
Baseline Conditions Noise levels were measured across the Site in August 2024. Unattended long-term measurements were taken along the M11 and A1309 Site boundaries, while attended short-term measurements were taken along the residential and Country Park boundaries, as well as at the M11 off-ramp. The measurements confirmed that M11 road traffic is the dominant source of noise. Other sources comprised Hauxton Road traffic, insects chirping, wind in trees/long grass and a small number of light aircraft (three noted during the entire attended survey period). A 3D noise model was produced of the Site based upon the Illustrative Development Option and the results of the noise survey. The model was used to predict the noise levels across the Site. The Site is subject to noise from the traffic on roads bounding the Site, primarily the M11 and Hauxton Road. The Illustrative Development Option proposes commercial buildings located between the residential properties and the M11 motorway. Residential buildings would be set back a significant distance (>150 m) from the M11 motorway, helping to reduce noise levels at residential facades. Furthermore, the commercial buildings would help to screen the residential buildings from road traffic noise on the M11. Based upon the Illustrative Development Option modelling, noise levels at the facades of the majority of residential facades would be in the range of 40 to 50 dBA and the internal ambient noise level guidance from BS8233:2014 could typically be met with windows open for ventilation. In addition the majority of residential bedrooms would be capable of meeting the internal ambient noise level guidance of Approved Document O with windows open. The majority of residential facades that face towards the M11 and Hauxton Road could meet the internal ambient noise level guidance from BS8233:2014 with trickle vents for ventilation. However, some residential facades that face towards the M11 and Hauxton Road would be subject to slightly higher noise levels in the range of 45 to 55 dBA and may need boosted mechanical ventilation with heat recovery (MVHR)/peak lop cooling and / or strategies on limiting when windows can be open to help reduce overheating to meet the internal ambient noise level guidance of Approved Document O. The extent of affected properties would be confirmed following detailed modelling and assessment. The BS8233:2014 external amenity level guideline limit of 50 to 55 dBA can be achieved in all areas currently proposed for gardens. Noise levels predicted at the proposed locations of the commercial properties will be in the range of 60 to 70 dBA, dependent upon precise location. This means that no onerous façade or glazing specifications are required to achieve typical internal ambient noise level requirements within R&D/office/commercial spaces, based upon these buildings having mechanical ventilation.

Noise and Vibration

Sensitive Receptors

Identified sensitive receptors comprise the following:

- Occupants of existing residential properties within the study area of the Site and of the links where a potential significant increase in transport movements is predicted by the transport consultant;
- Trumpington Meadows Country Park; and
- Future noise and vibration sensitive receptors introduced as part of the Illustrative Development Option.

Potential Impacts and Effects

The following table summarises the potential noise and vibration impacts and effects considered likely to arise during the construction and completed development stages.

Construction Stage		Completed Development Stage	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Construction noise during construction activities.	• Potential effects on human health for existing off-site and future on-site sensitive receptors (occupants of early phases).	• Road traffic noise associated with the operational Illustrative Development Option	• Potential effects upon human health for existing off-site and future on-site sensitive receptors.
• Construction vibration during construction activities.	• Potential effects on human health and potential cosmetic damage to buildings for existing off-site and future on-site sensitive receptors (occupants of early phases).	• Plant and building services noise from the new operational commercial sources within the Illustrative Development Option.	• Potential effects upon human health for existing off-site and future on-site sensitive receptors.
• Construction traffic noise	• Potential effects on human health	• Commercial activity noise associated with the operation of the new commercial premises within the Illustrative Development Option (e.g. deliveries).	• Potential effects upon human health for existing off-site and future on-site sensitive receptors.
		• Noise from existing sources affecting noise sensitive receptors within the Illustrative Development Option (including transportation and industrial noise sources).	• Potential effects on human health for receptors introduced as part of the Illustrative Development Option.

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

Environmental Constraints

<u>Design Stage</u>

- The Site is subject to noise from the traffic on roads bounding the Site, primarily the M11 and Hauxton Road.

Noise and Vibration
• The Illustrative Development Option proposes commercial development along the M11 boundary, which is considered good acoustic design. Therefore, the majority of the Site where residential development is currently proposed is considered 'low' risk by reference to the methodology of ProPG: Planning and Noise. Some small areas fall into the 'medium' risk category during night-time only. • Commercial buildings would be located between the residential properties and the M11 motorway. The commercial buildings would help to screen the residential buildings from the road traffic noise on the M11. • Residential buildings would be set back a significant distance (>150 m) from the M11, helping to reduce noise levels at residential facades. • Based on the Illustrative Development Option modelling, the majority of residential facades can meet the internal ambient noise level guidance from BS8233:2014 with windows open for ventilation. The majority of residential bedrooms can meet the internal ambient noise level guidance of Approved Document O with windows open for comfort cooling. • The majority of residential facades of the Illustrative Development Option that face towards the M11 and Hauxton Road could meet the internal ambient noise level guidance from BS8233:2014 with trickle vents for ventilation. • However, some residential facades of the Illustrative Development Option scheme that face towards the M11 and Hauxton Road may need boosted mechanical ventilation with heat recovery (MVHR)/peak lop cooling and / or strategies on limiting when windows can be open to help reduce overheating to meet the internal ambient noise level guidance of Approved Document O. The extent of affected properties would be confirmed following detailed modelling and assessment. • BS8233:2014 external amenity levels can be achieved in all areas currently proposed for gardens. • Noise levels at the proposed locations of the commercial properties of the early illustrative scheme mean that no onerous façade or glazing specifications are required to achieve typical internal ambient noise level requirements within R&D/office/commercial spaces, based upon these buildings having mechanical ventilation. <u>Construction Stage</u> • Embedded mitigation by use of Best Practicable Means (BPM), CEMP and signing up to voluntary schemes such as Considerate Constructors Scheme (CCS) would be utilised to reduce the risk of significant noise effects. <u>Completed Development Stage</u> • A new access road would be provided for the Illustrative Development Option to limit traffic increases on roads serving the existing residential properties. • A centralised car parking area is proposed close to the entrance of the Illustrative Development Option to limit on-site traffic. • Commercial properties would operate within agreed noise limits in line with local authority planning requirements.
Summary • The prevailing noise environment of the Site boundaries is affected by road traffic noise. • The likely effects due to noise from proposed commercial activity would be assessed for the reasonable worst-case scenario. Limits on noise break-out throughout the proposed building envelope would be determined through consultation with the LPAs with the aim of avoiding significant adverse effects. • Significant adverse effects would be avoided through appropriate siting of commercial activity noise sources and specification of the building envelope. • The suitability of the Site will be assessed with reference to indoor and outdoor noise guidelines within best practice guidance and standards and any local policy documents. • The good acoustic design process within ProPG: Planning and Noise will be followed. Indoor noise level criteria will be established for each proposed use and the suitable methods of ventilating the building will be determined along with outline specifications for the building envelope.

9.5 Ecology

Ecology
Proposed Consultations Consultations would be sought from the following stakeholders: • CCC – Consultation with the CCC regarding Biodiversity Net Gain approach, if required. • SCDC – Consultation with the SCDC regarding Biodiversity Net Gain approach, if required.
Baseline Conditions A site walkover was undertaken on 7 May 2024 to identify on-site habitats alongside data received from Cambridgeshire and Peterborough Environmental Records Centre (CPERC). The Site comprises the following habitats: • Other cereal crops; • Modified grassland; • Other neutral grassland; • Mixed scrub; • Bare ground; • Sparsely vegetated land; • Developed land sealed surface. Native species hedgerows and species rich native hedgerows are present within the Site, along with three medium sized rural trees. The survey and desk top study identified that the Site has potential to support a range of protected species including; badger *Meles meles*, bats, reptiles, otter *Lutra lutra*, breeding birds, and three Biodiversity Action Plan (BAP) species. Further surveys will be undertaken, where appropriate. Three statutory designated sites were present within 2 km. Byron's Pool Local Nature Reserve (LNR), lies 230 m to the north of the Site and forms an important corridor for wildlife through the landscape. Nine Wells LNR is located 2.5 km east and Paradise LNR is located 3.2 km north of the Site. Trumpington Meadows Local Nature Reserve is located adjacent to the north and north-western site boundary. A pond is located within the nature reserve adjacent to the north-western site boundary.
Sensitive Receptors Identified sensitive receptors comprise the following: • Statutory designated sites; • Habitats; • Badger; • Bats; • Otter; • Amphibians • Reptiles; and • Breeding birds.

Ecology			
Potential Impacts and Effects The following table summarises the potential ecological impacts and effects considered likely to arise during the construction and completed development stages.			
Construction Stage		**Completed Development Stage**	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential effects**
Construction of the Illustrative Development Option including the removal of existing vegetation.	On-site habitats: • Removal of habitats	Completion of the Illustrative Development Option including introduction of new vegetation and biodiversity enhancements.	On-site habitats: • Creation of new habitats • Damage to habitats through increased recreational foot fall and use.
	Statutory Designated Sites: • Potential indirect disturbance, through potential pollution events (e.g. Air, noise, contamination, lighting) • Loss of connectivity between Byron's Pool LNR and the Site.		Statutory Designated Sites: • Increased recreational foot fall and use affecting habitats and species within Byron's Pool LNR due to the proximity to the Illustrative Development Option and new on-site population. • Potential loss of connectivity between new habitats on-site and Byron's Pool LNR
	Badgers: • Disturbance / damage of badger setts, if present, loss of suitable foraging habitat		Badgers: • Loss of connectivity between the site and the wider area if found to be present, risk of increased mortality rate to badgers through increased traffic, recreational footfall and use on-site and increased human disturbance.
	Bats: • Disturbance to commuting / foraging bats through increased lighting / noise levels and loss of habitat		Bats: • Disturbance to commuting / foraging bats through increased lighting levels
	Reptiles • Disturbance / accidental death of reptiles • Loss of suitable foraging / commuting habitats for reptiles potentially leading to on-site population declines.		Reptiles: • Disturbance / accidental death of reptiles caused by increased recreational foot fall and use

Ecology			
	Otter: • Disturbance / accidental death of otter • Disturbance / damage to otter holts • Loss of suitable foraging and commuting habitat		Otter: • Loss of suitable commuting / foraging habitat
	Amphibians • Ground water discharge into the waterbody located within South Trumpington Meadows. Potential impacts on amphibians present		Amphibians • Ground water discharge into the waterbody located within South Trumpington Meadows. Potential impacts on amphibians present.
	Breeding Birds: • Disturbance of breeding birds and nests • Loss of suitable breeding bird habitat potentially leading to on-site population declines.		

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

Design Stage

The following surveys for protected species are underway and the results of these surveys will inform mitigation recommendations, creation and enhancement for the Illustrative Development Option:

- Badger;
- Bats (activity surveys static monitoring and walked activity transects);
- Breeding birds; and
- Reptiles.

If protected species are confirmed to be present on-site, mitigation would be developed which could include measures such as habitat creation, translocation or timing of construction activities in respect of seasonality constraints, e.g. breeding bird season. Statutory licenses will be obtained, where relevant.

- A sensitive lighting strategy would be adopted, in line with best practice guidance (Institute for lighting professionals, Bat Guidance), for the construction and completed development stages to minimise impacts on commuting and foraging bat species using the existing Site and in the immediate study area.
- Existing on-site habitats would be enhanced through planting of habitats of a higher distinctiveness. Where possible, the design of the Illustrative Development Option would aim to preserve existing hedgerows as part of the biodiversity strategy.
- Compensatory planting for habitat loss for certain species would be provided, for example night scented stock to compensate for lack of bat foraging habitats.
- Bat and bird boxes would be provided within the Illustrative Development Option along with other habitat enhancements such as invertebrate features (bug hotels etc) and hedgehog corridors. Numbers / locations to be determined on the outcome of surveys.

Construction Stage

- Precautionary Method of Works (PRoW) would be provided to aid in the avoidance of disturbing protected species that may be present within the Site.
- A CEMP would detail sensitive lighting design for commuting / foraging bats.

Ecology
• Dependent on the outcome of the surveys, an Ecological Clerk of Works (ECoW) presence may be needed during construction to supervise the works. • Landscaping would be installed at the earliest possible opportunity within the appropriate season of the construction programme and will be maintained to enable replacement/new habitats to establish. Completed Development Stage • Appropriate maintenance/management and monitoring of habitats would be in accordance with a Habitat Management and Monitoring Plan (HMMP). • 'Biodiversity Areas' would be signposted and awareness raised amongst the new population and general public. • Home information packs would be provided to the new population to advise on the importance of biodiversity and potential impacts of domestic pets.

9.6 Ground Conditions and Contamination

Ground Conditions and Contamination
Proposed Consultations Consultations would be sought from the following stakeholders: • CCC – Consultations with the Environmental Health Department relating to environmental conditions, incidents and known contamination risks and on CCC Contaminated Land Strategy. – Consultations with the Petroleum Enforcement Authority at CCC may be needed to establish whether records indicate the current or historical bulk storage of petroleum on-site. • SCDC – Consultations with the Environmental Health Department relating to environmental conditions, incidents and known contamination risks and on SCDC. – Consultations with the Petroleum Enforcement Authority at SCDC may be needed to establish whether records indicate the current or historical bulk storage of petroleum on-site. • Environment Agency (EA) – Consultations with the EA to discuss the Illustrative Development Option and any potential impacts in regard to controlled waters.
Baseline Conditions The Site is situated in an area of mixed agricultural and residential use, with residential properties bounding the Site to the north-east and agricultural fields to the south, beyond the M11. The Site slopes gently downwards towards the north-west, consistent with the surrounding topography. Historical Mapping A review of historical mapping and aerial imagery has been undertaken, the findings of which are summarised as follows: *Site* • The site has historically been undeveloped and in agricultural use from the earliest historical map dated 1884, with the exception of a small residential building in the centre of the Site. A pump was labelled adjacent to the building from 1927. • In 1948, aerial imagery shows the south-eastern area of the Site to be occupied by a prisoner of war camp (occupying around 15 % of the total land area). The camp was later marked as 'Hostel' by 1960 mapping and was removed by 1974.

Ground Conditions and Contamination

Site Study Area

- The Site study area has generally been undeveloped agricultural land from the earliest historical map dated 1884.
- A railway line was located approximately 15 m north from at least 1884 and was dismantled by 1974.
- Various pits occupied the land 120 m west from 1928 until the mid-1970's and an elongated pit, later labelled as a pond, has been present 15 m south-west of the Site since 1928. It is understood that the purpose of the pits was for the excavation of phosphate rich clays used for fertiliser during the mid-1800s and again for munitions during WWI. They have since been left and filled to be used as ponds.
- 'Cambridge Plant Breeding Institute' was constructed 500 m north-east by 1964 and expanded to be located 210 m north-east of the Site by the late 1970's. Multiple tanks are shown to have been in use at the facility until it was redeveloped into a primary school by 2015.
- The M11 was constructed immediately south of the Site by the 1980's and residential development in South Trumpington had expanded to be immediately adjacent to the north-east of the Site from 1980s to present day.

Environmental Database

- There are no records of contaminated land register entries/notices within a 1 km radius of the Site boundary.
- There are no records of current or former landfills within 1 km of the Site boundary and there is one record of a waste management facility (mobile plant for remediation of land), located 900 m north-west.
- A petrol filling station is located 960 m north-west of the Site boundary.
- According to the environmental database the Site does not lie in a 'Radon Affected Area' as defined by Public Health England.
- The Site has a low risk from Unexploded Ordnance (UXO), using online information from Zetica UXO database23. The mapping does not show any UXO finds within a 1 km radius of the Site boundary.

Geology and Hydrogeology

According to British Geological Survey (BGS) 1:50,000 mapping of the area, the Site is directly underlain by the solid geology of West Melbury Marly Chalk Formation (chalk, a Principal Aquifer, high groundwater vulnerability). Beneath which lies the Gault Formation (mudstone, an Unproductive Aquifer) which outcrops immediately west of the Site.

According to the Coal Authority, the Site is not located in a Coal Mining Affected Area.

Publicly available BGS borehole logs indicate the geology in the north-east of the Site to be as follows:

- Topsoil to 0.6 m below ground level (bgl);
- Chalk to 3 mbgl;
- Gravel to 4.3 mbgl;
- Chalk Marl to 13.7 mbgl;
- Gault Formation to 52.7 mbgl; and
- Lower Greensand Formation to 54.9 mbgl (water bearing from 54.3 mbgl), at which point the borehole was terminated.

Groundwater beneath the Site (Cam and Ely Ouse Chalk) is classified as having 'poor' chemical quality and of 'poor' quantitative status under the Water Framework Directive classification scheme.

There are no records of sensitive groundwater abstractions within 2 km radius of the Site boundary. There are seven groundwater abstractions within 2 km of the Site boundary, the closest of which is 390 m north-east for agricultural purposes. None of the abstractions are for sensitive use (public water supply or domestic use); however, there may also be private (unlicensed) abstractions (that are generally of smaller scale).

[23] Zetica, 2024. UXO Risk Maps. Online. Available at: https://zeticauxo.com/downloads-and-resources/risk-maps/ [accessed 11/09/2024]

Ground Conditions and Contamination

There are twelve BGS recorded mineral extraction sites within 1 km of the Site, all of which have ceased operation. The nearest is located approximately 50 m south of the Site where coprolite was extracted from the West Melbury Marly Chalk Formation. The Site is reportedly not located in an area that might be affected by coal mining.

Hydrology

A pond within Trumpington Meadows Country Park and unidentified drains are located immediately north-west of the Site. The nearest identified surface watercourse is the River Cam located approximately 230 m north-west of the Site at its nearest point, which flows to the north-west. It is expected that the drains flow into the River Cam.

The EA classifies the River Cam as being of 'moderate' ecological quality and 'does not require assessment' of chemical quality under the Water Framework Directive classification scheme. There are 31 surface water abstractions within 2 km of the Site, the closest of which is 230 m north-west from the River Cam for agricultural purposes. None of the abstractions are for sensitive use (public water supply or domestic use); however, there may also be private (unlicensed) abstractions (that are generally of smaller scale).

Water resource and flood risk are assessed within separate sections of this report which considers ground water and surface water features in respect of quantity and flood risk.

Ecologically Sensitive Areas

Three local nature reserves have been identified within a 2 km radius of the Site boundary. Trumpington Meadows Country Park is located immediately to the north and north-west of the Site, Byron's Pool is located 230 m north and Nine Wells is located 2 km north-east. No other ecologically sensitive areas such as areas of Outstanding Natural Beauty (AONB), Ramsar, a SSSI, SAC, and SPA have been identified within a 2 km radius of the Site boundary. However, the Site is within a SSSI Impact Zone.

The Illustrative Development Option does not meet the following criteria in respect of affecting a terrestrial SSSI:

- Infrastructure: Airports, helipads and other aviation proposals.
- Air Pollution: Livestock & poultry units with a floorspace > 500m², slurry lagoons > 750 m² and manure stores > 3,500 tonnes.
- Combustion: General combustion processes >50MW energy input. Including: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/combustion.

This indicates that at the Site, the Illustrative Development Option is unlikely to have a harmful effect on terrestrial SSSIs and the SACs, SPAs or Ramsar sites that they underpin. Consultation with Natural England in respect of the SSSIs is therefore not required.

The Site is located within a nitrate vulnerable zone.

Summary

Historically, the Site has been undeveloped agricultural land with a small residential building in the centre until 1948, when a prisoner of war camp was constructed in the south-east, until it was demolished in the mid-1970's. Potential contaminants associated with the identified current and historical site activities include: hydrocarbons associated with potential fuel use and storage at the residential property and prisoner of war camp; asbestos associated with building materials; and pesticide / herbicides associated with agricultural activities. A railway bounded the north of the Site from at least 1886 until the 1970's and a plant nursery with tanks was present to the north-east from the mid-1960's until 2015. No other significant contaminative activities have been identified in the immediate Site study area.

It is considered that the Site is in a moderately sensitive setting with regard to groundwater resources and a low to moderately sensitive setting with regard to surface water. The Site is not located within a Groundwater Source Protection Zone; however, it is located on a Principal Aquifer with minimal hardstanding. Whilst there are no surface water features on-site and no sensitive surface water abstractions within a 2 km radius, there are ponds and drains immediately off-site which lead into the River Cam.

Ground Conditions and Contamination

On the basis of this high level assessment, it is considered that there is a low to moderate risk of ground contamination being present at the Site. Further assessment in the form of a Phase 1 desk study and subsequent post-planning ground investigation would be required by the LPA to accompany any future planning application.

Sensitive Receptors

Identified sensitive receptors comprise the following:

- A pond within Trumpington Meadows Country Park and unidentified drains, located immediately north-west of the Site;
- The River Cam located approximately 230 m north-west of the Site;
- Underlying principal aquifer (Cam and Ely Ouse Chalk);
- Residential properties immediately north-east of the Site;
- Three local nature reserves within a 2 km radius of the Site;
- Future on-site construction workers;
- Future on-site residential uses; and
- Future buried services and landscaping.

Potential Impacts and Effects

The following table summarises the potential ground conditions and contamination impacts and effects considered likely to arise during the construction and completed development stages.

Construction Stage		Completed Development Stage	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Construction of the Illustrative Development Option	• Interruption of groundwater flow through piling and excavations. • Soil erosion and / or soil compaction via construction plant and vehicle movement. • Mobilisation of existing contaminants in soils and underlying groundwater. • Potential health effects on Site users and neighbouring users through dermal contact, inhalation or ingestion of pre-existing contamination within the underlying soils and groundwater. • Generation of waste soils from ground works requiring management and off-site disposal. • De-watering of excavations that encounter groundwater and require groundwater management.	• Completion of the Illustrative Development Option and introduction of residential and commercial floorspace.	• Potential for accidental release of hazardous materials / contaminants to soils and / or controlled waters resulting from commercial activities. • Reduced surface water leaching to underlying groundwater in areas of hardstanding across the Illustrative Development Option • Reduced groundwater recharge.

Ground Conditions and Contamination			
	• Accidental discharges of hazardous materials or creation of contaminant pathways (such as through piling activities).		
• Introduction of a construction workforce	• Potential health effects on construction workers through dermal contact, inhalation or ingestion of pre-existing contamination within the underlying soils and groundwater.	• Introduction of a commercial / residential site users.	• Potential exposure of future site users, to contamination during the completed development stage.

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

Design Stage

- Further assessment (Preliminary Risk Assessment) would be undertaken to reduce uncertainty around the potential risks to human health and controlled waters at the Site and within the study area and to inform a subsequent environmental site investigation.
- The geo-technical properties of ground underlying the Site would be assessed. A geotechnical investigation would be undertaken during the design stage.
- Mitigation measures may be required during subsequent ground investigations to minimise the risk of creating preferential pathways for potential contamination to the underlying Principal Aquifer. These would be identified following completion of the PRA.
- If remediation is required, then a remediation options appraisal would consider sustainable remediation techniques.

Construction Stage

- Following geo-environmental investigations during the design stage, further targeted ground investigations would be undertaken in advance of works commencing on-site. The investigations would inform the detailed design stage, would confirm the ground profile and would allow a detailed assessment of potential contaminant linkages.
- Should the ground investigation identify active contaminant linkages, a Remediation Options Appraisal and Remediation Strategy would be produced to specify protective measures for the construction stage. The Remediation Options Appraisal would consider the available options for each contaminant linkage and would establish the most effective and sustainable approach. The conclusions of the Options Appraisal would be used to devise a Remediation Strategy which would set out measures to break the contaminant linkages, where identified.
- Watching briefs would be required during groundworks to monitor for any previously unidentified potentially contaminated material.
- If future assessment identifies a risk associated with contamination or ground gas / vapours at the Site, then mitigation measures would be incorporated into the design of buildings.
- Standard mitigation measures would be adopted to reduce the risk of contamination resulting from construction activities, such as appropriate fuel storage. These would be set out within the CEMP.
- A construction stage Surface Water management strategy and drainage plan is required and would be produced to ensure that surface water runoff during construction phases is captured and treated prior to discharge to ground or watercourse, with approval required from the LLFA and the EA.
- Further assessment would be undertaken to determine if on-site materials may be re-used under appropriate controls (such as a Materials Management Plan) as part of the Proposed Development or will require off-site disposal.
- Appropriate delineation and segregation of potentially contaminated materials (if identified) and stockpile management would be required to minimise the amount of waste requiring disposal off-site during ground works.
- Opportunities for the re-use of site won materials would be considered at the construction stage.

Ground Conditions and Contamination

- In the event that additional topsoil needs to be imported to the Site, these would be free of contamination.
- Further assessment would be undertaken to determine if temporary dewatering of excavations would be required during construction works, based on expected groundwater levels at the Site.

Completed Development Stage

- Once the Site has been developed, there are likely to be limited constraints associated with ground conditions. However, if remedial or mitigation works have been undertaken, then such works must be detailed in a Health and Safety file for the Site.
- In the event that localised contamination hotspots are identified, the Illustrative Development Option offers an opportunity to remediate these hotspots.

Summary

- It is considered that the Site is in a moderately sensitive setting with regard to groundwater and a low to moderately sensitive setting with regard to surface water.
- Based on current understanding, there is considered to be a low to moderate risk of ground contamination present at the Site. However, limited ground geotechnical or environmental investigation have been undertaken to date therefore, additional investigations are likely to be required to inform the Illustrative Development Option. If future assessment identifies a risk associated with contamination or ground gas / vapours at the Site, then remediation may be required and mitigation measures may have to be incorporated into the design of the building.
- Watching briefs are required during groundworks to monitor for any previously unidentified potentially contaminated material. If encountered, impacted material / groundwater would require suitable management.
- A CEMP would be developed to outline the various mitigation measures to reduce the risk of contamination and impact to sensitive receptors resulting from construction activities, such as appropriate fuel storage.
- Further assessment would be undertaken to determine if on-site materials may be re-used under appropriate controls (such as a Materials Management Plan) as part of the Illustrative Development Option or will require off-site disposal.
- A SuDS strategy is proposed to manage both surface water run-off and pollution control through a SuDS treatment train.

9.7 Water Resource and Flood Risk

Water Recourses and Flood Risk

Proposed Consultations

Consultations would be sought from the following stakeholders:

- CCoC
  - Consultation with CCoC as the lead local flood authority (LLFA).
  - The Surface Water strategy would be developed based on LLFA guidance. Pre-application advice will be requested, including a meeting with the LLFA Officer and written advice feedback on concept proposals, particularly to agree in principle the proposed SuDS strategy, flow control measures and outfall arrangements.
- Anglian Water
  - A pre-planning application will be submitted to Anglian Water during the masterplan development process to confirm that no downstream network or treatment plant upgrades are required. Pre-development enquiries are valid for 1 year. The foul water strategy would be based on Anglian Water Local Practice for Pumping Stations 2020; however, the consultation will also confirm the required on-site storage and pumping station flow rates, as well as specific considerations relating to the commercial development types.

Water Recourses and Flood Risk
• EA – The Surface Water Strategy is anticipated to include both infiltration to ground and discharge to a water body (in South Trumpington Meadows via a proposed flow control feature). The proposed discharge would not be effected by the EA designated main river (The River Cam). However the EA would be consulted to provide comments on the proposed Surface Water discharge mechanisms. • Wildlife Trust (South Trumpington Meadows Country Park) – The Surface Water Strategy is anticipated to include discharge to a water body (in South Trumpington Meadows). The Wildlife Trust manage the South Trumpington Meadows and would be consulted in relation to the proposed outfall and discharge into the existing water feature within the South Trumpington Meadows land.
Baseline Conditions An existing potable water main crosses the centre of the Site in an east-west direction. <u>Flood Risk from Rivers and Sea</u> The Site is located entirely in Flood Zone 1, indicating a low probability of flooding, i.e. in any year the Site has less than 0.1% chance of flooding from rivers or the sea, as presented in Figure 15. The Level 1 Strategic Flood Risk Assessment (SFRA), carried out by Stantec[24] contains mapping of predicted flood extents for extreme events, including an allowance for climate change through increases in the peak flows used within the model. The extents of flooding with climate change allowance for the future scenario do not extend significantly beyond the present day scenario and are contained to the natural flood plain of the River Cam. The Site is, therefore, not considered to be affected by climate change impacts on fluvial flood risk.

[24] Stantec (on behalf of Greater Cambridge Shared Planning), 2021. Online Available at: https://greatercambridgeplanning.org/media/2552/strategicfloodriskassessment_gclp_210831_accessible.pdf [accessed 27/09/2024]

Water Recourses and Flood Risk

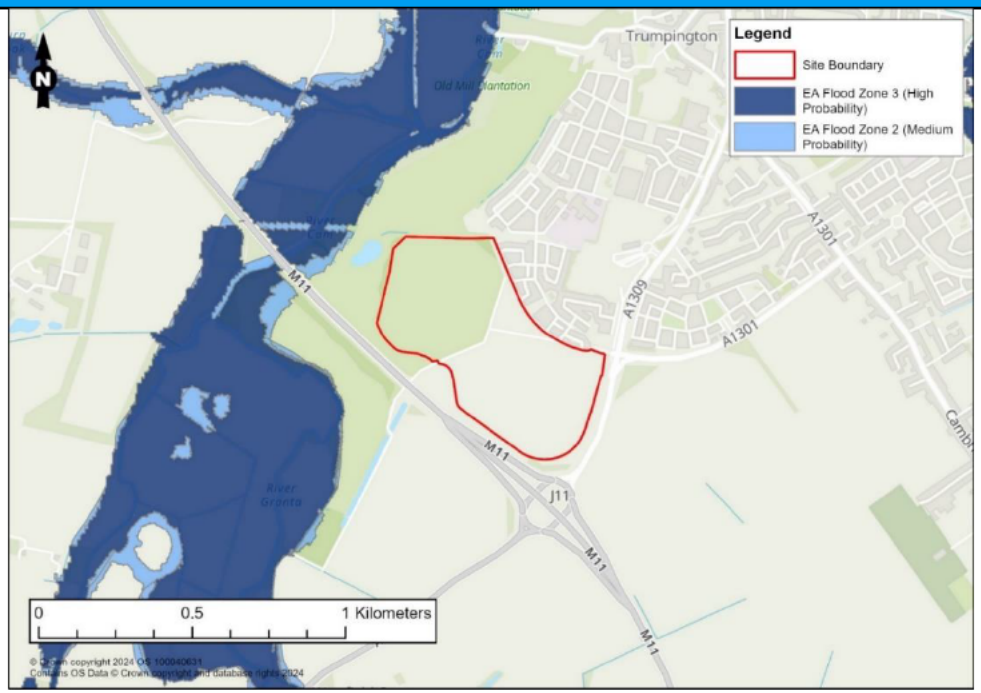

Figure 15: Existing Rivers and Sea Flood Zones

Flood Risk from Surface Water

The risk of flooding from surface water (RoFSW) EA maps show that the majority of the Site is at Very Low risk of surface water flooding, defined as having a chance of flooding of less than 1 in 1,000 (<0.1% AEP). Therefore, the EA data shows that surface water flooding does not present a flood risk to the majority of the Site (Figure 16). Small areas of isolated flood risk appear to originate on-site at low points and will not present a risk to the Site post-development. There are no risks indicated from off-site contributions or overland flow paths crossing the Site.

There is a substantial area of high surface water flood risk alongside the M11, adjacent to the Site's western boundary. However this area is at a lower elevation than the Site and does not present a risk to the Site.

The RoFSW maps include a future scenario with Climate Change impacts for the period 2040 to 2060. The future scenario map shows no substantial impact to flood risk extents at the Site, but shows a moderate increase in areas at high risk of flooding. However as with the current scenario, these are small isolated areas that appear to originate on-site. Climate change does not contribute to any increased risks from off-site contributions or overland flow paths crossing the Site.

Water Recourses and Flood Risk

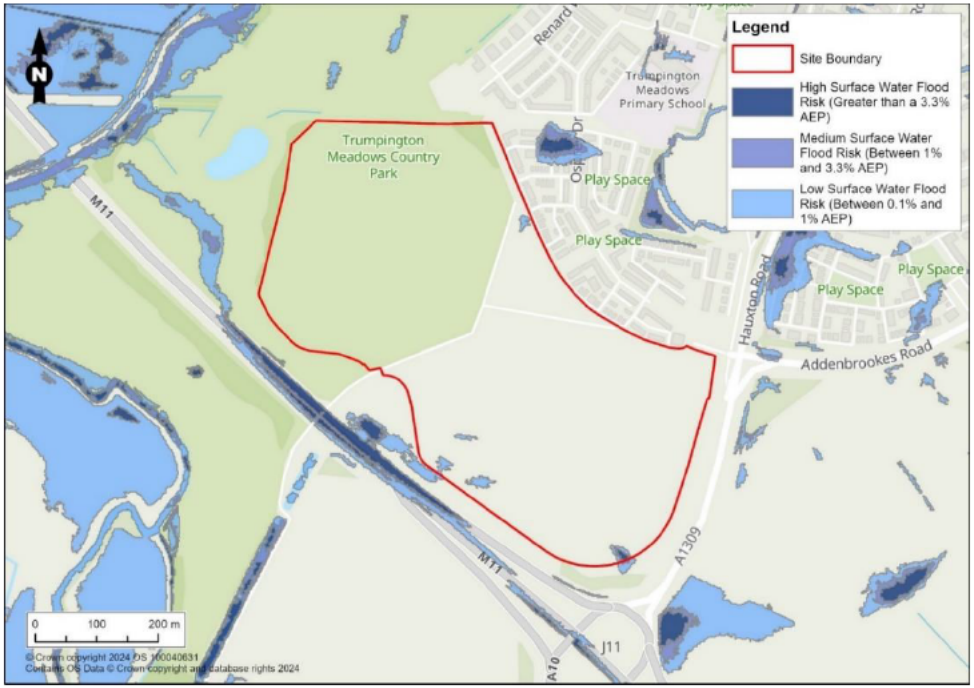

Figure 16: Existing Surface Water Flood Zones

Flood Risk from Groundwater

Groundwater flood risk maps are available within the SFRA, and it appears that the Site may have areas with 'Potential for groundwater flooding of property situated below ground level'. Ground investigations, including groundwater monitoring would be undertaken to determine seasonal variation of groundwater levels more precisely.

Groundwater Abstractions

Cambridgeshire water supplies are abstracted from a chalk aquifer. New developments are being obligated to reduce water demand – building legislation is under review with new targets proposed for water stressed areas. The current guidelines are targeting 110 litres/person/day. The Illustrative Development Option would target industry best practice and would future proof against potential revisions to the water consumption targets based on an approach on water efficiency fittings and utilisation of grey water harvesting.

Existing Drainage

The Site is not served by an existing drainage network. The Anglian Water asset plan shows that there are no public sewers crossing the Site. Based on the topography and lack of existing drainage features it is assumed the Site drains through a combination of diffuse infiltration and overland run-off to the north-west, with flows ultimately discharging to the River Cam.

Water Recourses and Flood Risk

The Trumpington Meadows public foul water drainage network drains to an Anglian Water foul water pumping station located to the north of the Site. Foul water is then pumped to the north.

Sensitive Receptors

Identified sensitive receptors comprise the following:

- Existing off-site drainage system;
- Proposed completed development future on-site drainage system;
- Construction stage drainage system;
- Groundwater quantity;
- Off-site properties at risk of flooding in the catchment of the River Cam; and
- On-site properties at risk of flooding.

Potential Impacts and Effects

The following table summarises the potential water resources and flood risk impacts and effects considered likely to arise during the construction and completed development stages.

Construction Stage		Completed Development Effects	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Construction of the Illustrative Development Option	• Changes to the surface water runoff regime and associated flood risk to on-site and off-site receptors within the catchment area	• Completion of the Illustrative Development Option, including changes in finished floor levels, new surface water drainage features and foul water drainage features.	• Changes to the surface water runoff regime and associated potential for flood risk
	• Compaction of natural ground caused by heavy plant and traffic, leading to reduced infiltration rates and the associated risk of flooding		• Creation of potable water demand and groundwater quantity
	• Irreparable damage or increased maintenance of on-site and off-site existing and proposed drainage systems due to construction debris and sediment leading to increased flood risk		• Creation of foul water demand
	• Construction water demand		

Water Recourses and Flood Risk

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

Design Stage

- Topography. The design of the SuDS strategy would take into account the existing and proposed topography of the Site. The Site levels strategy would be developed to minimise earthworks. However some earthworks would be needed to rationalise the two distinct levels on the Site and facilitate an appropriate gradient for two principal swale/ surface water conveyance routes.
- The proposed SuDS would be designed to avoid these areas.
- Ground conditions and groundwater levels. Groundwater investigations, including groundwater monitoring and infiltration testing to BRE365 would be undertaken to determine infiltration potential as well as the groundwater constraints, which may confine SuDS to shallow features only.
- Existing utilities. The proposed swale crosses the path of the existing potable water main. Coordination would be undertaken with the proposed water main diversion levels and the level of the proposed surface water drainage features.
- Masterplan/ landscape integration. The SuDS strategy would be designed to spread SuDS across the Illustrative Development Option, providing opportunity to integrate the SuDS features into the masterplan and landscape strategy. All SuDS features would be designed to be multi-functional.
- Consideration would be given to Source Control measures in the SuDS strategy to provide multiple benefits. Rain Gardens, Green Roofs and Permeable Paving would be considered for the development zones.
- Swales and exceedance zones would be designed as multi-functional spaces, to be integrated into the landscape strategy, maximising amenity and biodiversity value.
- Sustainability: The Illustrative Development Option would meet the highest BREEAM standards to demonstrate reduced water demand. The objective is to demonstrate that the Illustrative Development Option would target industry best practice. Water reuse would be encouraged through the use of rain water harvesting and grey water recycling.

Construction Stage

- Phasing Strategy. SuDS strategy would be designed to be operational for each phase.
- Appropriate measures should be used during construction to avoid compaction of natural ground, especially areas designated for landscape and SuDS features, as well as ecologically sensitive areas.

Completed Development Stage

- An adoption strategy for SuDS would be developed. However, if the Illustrative Development Option including the main perimeter access road remain un-adopted by the local highways authority, the potential for a fully integrated SuDS strategy is retained. Adoption of SuDS and maintenance responsibility could fall to one or more of the following: Anglian Water, local authority and private estate management.
- Maintenance. The SuDS strategy would maximise surface water management at or near the surface and the use of nature based systems.
- Incorporating SuDS into the wider landscape strategy, promotes passive irrigation of landscape features. There is an opportunity to design the SuDS strategy such that no potable water would be needed for irrigation, whilst not impacting the quality and health of the landscape.
- Water Usage: Smart Meter (AMI Meters) would be installed in residential units that provide a reading up to every 15 minutes via a remote signal to a server and working Cambridge Water. An integrated water management strategy would be prioritised, including monitoring domestic and commercial utilisation.

Summary

Flood Risk, Surface and Foul Water Drainage Strategy

The Site sits entirely within Flood Zone 1, indicating a low probability of flooding from rivers or the sea. The Site is also considered to have a low probability of flooding from other sources including surface water flooding. The required land take has been estimated to allow for sufficient attenuation prior to discharge for storms up to the 1 in 100 year event plus 40% for climate change. Therefore, environmental effects in relation to flood risk are low.

Water Recourses and Flood Risk
Foul water would be disposed of through a dedicated below ground pipe network which will drain to an adoptable pumping station before discharging to the local gravity Anglian Water foul water sewer network.

9.8 Archaeology

Archaeology
Proposed Consultations Consultations would be sought from the following stakeholders: • CCC – To be undertaken: Appropriate study area for Cambridgeshire Environment Record (CHER) data to be agreed with Archaeological Advisor to CCC. • SCDC – To be undertaken: Appropriate study area for Cambridgeshire Environment Record (CHER) data to be agreed with Archaeological Advisor to SCDC.
Baseline Conditions • There are no nationally designated heritage assets within the Site. However, five Scheduled Monuments lie within 1 km of the Site boundary, one of which, a Romano-British settlement site, is located approximately 35 m to the north of the Site boundary. • The Site is not located within a conservation area. • Cambridgeshire does not designate archaeological priority areas. Planning applications that have the potential to affect archaeology are dealt with on a case-by-case basis. • The underlying geology of the Site comprises chalk of the West Melbury Marly Chalk Formation. • In order to set the Site into its full archaeological and historical context, information was collected on the known historic environment features within a 1 km study area buffered around the Site boundary, as held by the Cambridgeshire Historic Environment Record (CHER). There have there been two investigations which extended into the Site. In 2005 fieldwalking, metal detecting, geophysical survey and a watching brief were undertaken over a large area which included the entire Site. In 2012–13 fieldwalking, a metal detector survey and a geophysical survey were undertaken for a previous development scheme (Proposed Sports Village), covering the south-eastern half of the Site. These investigations identified clear evidence of activity dating from the Prehistoric period through to the post-medieval. The work also recorded the layout of the WWII prisoner of war camp in the south-east of the Site. There have been 36 other archaeological investigations within the study area which have recorded significant remains from all periods. • There have been 36 other archaeological investigations within the study area which have recorded significant remains from all periods. These remains have included prehistoric settlement and funerary remains, Roman settlement, early medieval settlement and burials, and later medieval agriculture. • Historic mapping shows that majority of the Site remained in fields until World War II when a prisoner of war camp was constructed in the south-eastern part of the Site. The fields on the Site were subsequently used by the Cambridge Plant Breeding Institute before being returned to agricultural use.
Sensitive Receptors Identified sensitive receptors comprise the following: • Prehistoric remains of isolated finds of flints or pottery of low heritage significance; • Prehistoric remains of cut features of medium heritage significance; • Prehistoric remains of settlement or funerary remains of high heritage significance; • Roman remains of isolated finds of low heritage significance;

Archaeology

- Roman remains of cut features of medium heritage significance;
- Roman remains of settlement of high heritage significance;
- Early medieval remains of isolated finds of medium heritage significance;
- Early medieval remains of settlement or burials of medium heritage significance;
- Later medieval agricultural remains of low heritage significance; and
- Post-medieval remains of a World War II prisoner of war camp of medium heritage significance.

Potential Impacts and Effects

The following table summarises the potential archaeological impacts and effects considered likely to arise during the construction and completed development stages.

Construction Stage		Completed Development Stage	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Works carried out as part of the initial Site set up, including the installation of Site fencing and welfare facilities.	• Reduction of asset significance.	• Any potential impacts and effects on buried heritage assets will occur as a result of ground disturbance during construction works. No impacts or effects would occur on buried heritage assets on completion of the Illustrative Development Option since no further ground disturbance would occur.	
• Construction of basements. Any archaeological remains would be entirely removed within the footprint of any proposed basements to the maximum depth of excavation.	• Reduction or loss of asset significance.		
• Insertion of piled foundation. Any archaeological remains within the footprint of each pile would be removed as the pile is driven downwards.	• Reduction or loss of asset significance to nil.		
• Landscaping and other shallow groundworks. Excavation of new service trenches and drains, tree planting and landscaping works would entirely remove any archaeological remains within the trench footprint.	• Reduction or loss of asset significance.		

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

<u>Design Stage</u>

- Given the high potential for archaeological remains within the Site, it is possible that a programme of archaeological evaluation may be required pre-planning determination to confirm the nature, extent and significance of any assets present.

Archaeology

- The setting of the Scheduled Romano-British settlement just north of the Site boundary may need to be considered at the Design Stage.
- The design would be developed to minimise impacts on archaeology through early engagement with LPAs' Archaeological Advisor to determine appropriate mitigation measures and incorporate these into the Illustrative Development Option design.
- The design would include opportunities using archaeology for input into legacy planning, social value, place making etc.

Construction Stage

- Impacts on archaeological remains typically occur during the construction stage where ground disturbance takes place. Effects are limited to the area of the physical impact and are permanent.
- Given the high potential for archaeological remains within the Site, it is likely that a programme of archaeological investigation would be required to offset and reduce archaeological effects. This would inform an appropriate strategy to offset the removal of buried heritage.
- All archaeological work would be undertaken in accordance with an approved Written Scheme of Investigation.
- Opportunities for public engagement with audiences would be identified during design stage and implemented where appropriate.
- The results of the programme of archaeological investigation would be disseminated at an appropriate level to increase knowledge and appreciation of the buried heritage assets.

Summary

The site has potential for historical remains of low to high heritage significance. Given the potential for historical remains of high heritage significance within the site, a programme of archaeological evaluation may be required pre-planning and a programme of archaeological investigation would be required during the demolition and construction stage to offset and reduce archaeological effects.

9.9 Built Heritage

Built Heritage

Proposed Consultations

Consultations would be sought from the following stakeholders:

- CCC
  - Conservation Officer
- SCDC
  - Conservation Officer
- Historic England (HE)
  - Regional inspector – East of England Regional Office

Baseline Conditions

The Site is not located within a conservation area.

In order to set the Site into its full archaeological and historical context, information was collected on the known upstanding designated built heritage features within a 1 km study area buffered around the Site boundary, as held by the CHER, by HE on the National Heritage List for England (NHLE) and on the local heritage list.

There are 27 Listed Buildings and six locally listed buildings within 1 km of the Site boundary as presented in Figure 17 and summarised in Tables 5 and 6.

Built Heritage

Figure 17: Designated and Non-Designated Built heritage Assets

Built Heritage

Table 5: Listed Buildings within 1 km of Site

Listed Buildings		Grade	CHER Ref	NHLE Ref	Location	Distance	
1	Yew Garth	II	DCB6965	1331095	Grantchester	1 km	N
2	Ivy Deane	II	DCB4971	1162891	Grantchester	1 km	N
3	Old Vicarage	II	DCB4661	1127790	Grantchester	900 m	N
4	Garden building at the Old Vicarage	II	DCB6406	1127791	Grantchester	900 m	N
5	Mill House	II	DCB6593	1309403	Grantchester	850 m	N
6	Trumpington Hall	II	DCB7118	1111859	Trumpington	910 m	NE
7	Forecourt screen, gate piers and gates at Trumpington Hall	II	DCB7561	1331832	Trumpington	910 m	NE
8	Anstey Hall Farmhouse	II	DCB7047	1081493	Trumpington	820 m	NE
9	Dovecote at Anstey Hall Farm	II	DCB7406	1126219	Trumpington	750 m	NE
10	Barn at Anstey Hall Farm	II	DCB7048	1081497	Trumpington	780 m	NE
11	Garden wall at Anstey Hall Farmhouse	II	DCB7590	1331860	Trumpington	850 m	NE
12	Church of St Mary and St Michael	I	MCB5904	1081526	Trumpington	850 m	NE
13	Churchyard Wall of the church of St Mary and St Nicholas (at above)	II	DCB7045	1126218	Trumpington	880 m	NE
14	Nos. 20 & 22 Grantchester Road	II	DCB7591	1331861	Trumpington	900 m	NE
15	Nos. 16 & 18 Grantchester Road	II	DCB7049	1081504	Trumpington	900 m	NE
16	Nos. 10, 12 & 14 Grantchester Road	II	DCB7407	1126220	Trumpington	910 m	NE
17	The School House	II	None	1126220	Trumpington	950 m	NE
18	The Vicarage	II	DCB7589	1331859	Trumpington	870 m	NE
19	Anstey Hall	I	DCB7606	1331876	Trumpington	840m	NE
20	Gateway of Anstey Hall	II	DCB7356	1126169	Trumpington	900 m	NE
21	Lodge and gate piers at Anstey Hall	II	None	1478099	Trumpington	900 m	NE
22	The Old House	II*	DCB7119	1111864	Trumpington	970 m	NE
23	Maris House	II	DCB7075	1101728	Trumpington	920 m	NE
24	No. 52 High Street	II	DCB7057	1099185	Trumpington	1 km	NE

Built Heritage

25	Nos 60 & 62 High Street	II	DCB7580	1331850	Trumpington	940 m	NE
26	Milestone, south of junction with Shelford Road	II	MCB18034	1126190	Trumpington	76 m	NE
27	Milestone, Hauxton Mill Bridge	II	MCB18316	1127840	Hauxton	1 km	SW

Table 6: Locally Listed Buildings within 1 km of Site

Locally Listed Buildings			Location	Distance	
1	The Red House, 50, High Street		Trumpington	990 m	NE
2	87, High Street		Trumpington	1 km	NE
3	91-93 High Street		Trumpington	1 km	NE
4	105-107 (odd) High Street		Trumpington	970 m	NE
5	17, 18 & 19 Church Lane		Trumpington	970 m	NE
6	2,4,6 & 8, Grantchester Road		Trumpington	900 m	NE

Sensitive Receptors

Following the desk-based study, the walkover survey and an assessment of the prepared wireframe models of the Illustrative Development Option within the landscape, a targeted list of two Listed Buildings has been compiled, the settings of which may be affected by the Illustrative Development Option. Although the Illustrative Development Option may appear within views of the designated heritage assets, the intervisibility is interrupted. The remaining 29 designated heritage assets and six undesignated heritage assets within the study area have been scoped out of this assessment at this stage because they will not be affected by the Illustrative Development Option, for reasons of distance, intervisibility and the degree of change to their settings.

Thus the identified sensitive receptors comprise the following:

- The Church of St Mary and St Michael; and
- Milestone, south of the junction with Shelford Road, Hauxton Road.

Refer to the baseline heritage statement for further explanation on the baseline which forms part of the Sites Submission Consultation pack.

Potential Impacts and Effects

The following table summarises the potential built heritage impacts and effects considered likely to arise during the construction and completed development stages.

Built Heritage			
Construction Stage		**Completed Development Stage**	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Construction of the Illustrative Development Option.	• Potential indirect change to the significance of designated heritage assets within the study area through an alteration of their setting, although considered to be very low.	• Completion of the Illustrative Development Option	• No or little indirect change to the significance of designated heritage assets within the study area through an alteration of their setting, although considered to be very low.

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

Design Stage

- The design stage would be developed to minimise the impact on built heritage through early engagement with the LPAs' Conservation Officers to determine appropriate mitigation measures.
- The design would include opportunities using built heritage, alongside buried archaeology, for input into legacy planning, social value and place making etc.

Construction Stage

- Impacts on built heritage occur during the construction stage where localised disturbance of townscapes and landscapes takes place. These impacts are indirect, temporary and are subject to change until the construction stage is complete.

Completed Development Stage

- Opportunities for public engagement with audiences identified during the design stage.

Summary

The built heritage appraisal has been based upon a walkover survey and an assessment of the prepared wireframe models of the Illustrative Development Option.

Impacts on built heritage would be mitigated through design development and consultation with statutory consultees and stakeholders.

9.10 Landscape and Visual

Landscape and Visual
Proposed Consultations Consultations would be sought from the following stakeholders: • CCC and SCDC via the Greater Cambridge Shared Planning Service. – Agree viewpoint locations with relevant landscape officer(s) and agree methodology for assessment in-line with The Guidelines for Landscape and Visual Impact Assessment (GLVIA3), published by the Landscape Institute and the Institute of Environmental Management and Assessment.
Baseline Conditions The Site comprises a single parcel of agricultural land separated into smaller parcels by existing hedgerows. The Site is relatively level, with a gentle fall west to east, but can appear to raise when looking eastwards from the west/north-western edges of the Site.

Landscape and Visual

The Site is located to the south-west of Cambridge city centre. Land to the:

- north is the residential development of Trumpington Meadows, which continues to be developed;
- north-east is further residential development of Trumpington;
- east is the A1309 Hauxton Road, with land further east beyond the road also in agricultural use;
- south is the M11, beyond which is land currently in agricultural use but has planning consent for the SWTH facility; and
- west of the Site forms Trumpington Meadows Country Park.

At a national scale, the Site is located within National Character Area 87 - East Anglian Chalk. At a more local level, a small parcel of land to the north falls within an area identified as 'urban'. The remainder of the Site is located within Greater Cambridge Landscape Character Type LCT3: LOWLAND FARMLANDS. This area is noted for the following:

- Key Characteristics
  - Low-lying, gently rolling topography crossed by river corridors and drained by small streams;
  - Open character and often extensive views;
  - Productive, intensively farmed, predominantly arable landscape that has experienced significant modification during the 20th century, resulting in amalgamation of fields;
  - Generally sparse woodland cover and fragmented network of hedge boundaries;
  - Woodland and traditional orchards often define the edge of settlements;
  - Scattered Medieval moated sites and stone churches are characteristic features; and
  - A well settled landscape with a relatively dense rural settlement pattern comprising large and small villages and outlying farmsteads.
- Biodiversity
  - Tree cover is characterised by groups of trees around settlements and farmsteads and scattered, small blocks of mixed woodland across the undulating landform. Fields and roadsides are occasionally bound by hedges that are generally low and well-trimmed and often gappy. Treed watercourses are distinctive features through the lower-lying landform. Trees around settlement edges contribute to localised, more intimate landscape scale and a large number of these are protected by Tree Preservation Orders (TPO).
- Settlement Form and Built Character
  - A well settled landscape that is crossed by the major river corridors. There is a relatively dense, largely nucleated, rural settlement pattern composed of large and small villages, and outlying farmsteads. The main building materials through the Lowland Farmlands include Gault Clay, brick, clay tile, render and thatch. Church spires and towers are prominent features on the skylines through the Lowland Farmlands.
  - The relatively high density of settlement, intensive agriculture and major transport routes that pass through it mean that it is often a busy, rural landscape. The western part of the LCT is generally less populated, with smaller isolated villages. Settlement size increases east, towards Cambridge and villages are more closely located and have grown to meet commuter demand.
- Key Landscape Sensitivities
  - Rural tranquillity;
  - Hierarchy of water courses that provide valuable networks of wetland habitat;
  - Scattered pattern of small woodlands;
  - Surviving Medieval moated sites;
  - Dispersed, rural settlement pattern;
  - Guidance for Landscape Management;
  - Manage the agricultural landscape and soils both for production and opportunities to improve biodiversity;

Landscape and Visual

- Conserve and enhance existing watercourses to enhance the ecological value of the farmed landscape;
- Conserve areas of grazing marsh, and scattered deciduous woodland and orchards of high ecological value;
- Conserve and enhance existing hedgerows and consider opportunities for replanting hedgerows where these have been lost/become fragmented;
- Protect the sites and features of archaeological and historic interest; and
- Encourage opportunities to expand and link woodland, hedgerows and other seminatural habitats to benefit biodiversity and managing key views across the rural landscape.

Landscape Character Area 3D: CAM AND GRANTA TRIBUTARIES LOWLAND FARMLANDS LANDSCAPE is a sub-area within LCT3: LOWLAND FARMLANDS identified above. Area 3D is noted for the following:

- Cam and Granta Tributaries Lowland Farmlands Landscape Character Area (LCA) is distinguished by its wooded appearance, which makes it more visually enclosed than the other Lowland Farmlands, and by the relatively built up and suburban character of its villages.
- Key Characteristic:
  - Wider floodplain of the River Cam or Rhee and River Cam or Granta;
  - Shelterbelts and scattered blocks of deciduous woodland including historic parkland at Sawston Hall provide visual enclosure;
  - Dense pattern of large commuter villages with a suburban character and industrial influences, eroding rural character;
  - Transport networks including railway and major road networks fragment the area; and
  - Green corridor including Hobson's Park and the rising foothills.
- Specific Landscape Guidelines:

  In addition to the generic landscape guidelines for this landscape character type, the following guidelines are specific to this character area:
  - Ensure development enhances existing landscape features, creates links between villages and recreational assets and is in keeping with the rural character;
  - Conserve and manage woodland to maintain a visually enclosed character and separation; and
  - Conserve parkland and enhance the specific features that give character and its context within the wider landscape in areas where it has been fragmented.

The PRoW network within the local study area comprises PRoW FP116/5 at St Margarets Mount south of Hauxton and the permissive footpath across farmland north of Hauxton. There is an existing footpath through the Site linking Melbourn Greenway and Cambridgeshire Guided Busway via Trumpington Park&Ride.

Sensitive Receptors

Identified sensitive landscape receptors comprise the following:

- The Site and its immediate context (including Trumpington Meadows Country Park).

Visual receptors identified as part of the baseline study are likely to have a range of sensitivities in accordance with the GLVIA3 methodology. Residential receptors, users of public rights of way and visitors of attractions where landscape enjoyment is part of the experience are typically the most sensitive to development of the type proposed. Beyond the existing settlement edge, the immediate context of the Site is sparsely settled and poorly served by PRoW. Identified residential and PRoW receptors comprise the following:

- Residents of Trumpington Meadows and along the edge of Trumpington;
- Residents to the northern edge of Hauxton;
- Residents to the west of A1301 Cambridge Road;
- Users of Permissive Bridleway and Footpath through Trumpington Farm Company Land, to the north of Hauxton;
- Users of PRoW FP 116/5;

Landscape and Visual

- Visitors to Trumpington Meadows Country Park;
- Visitors to Coton Countryside Reserve and using View Point Walk; and
- Visitors to Magog Downs, Wandlebury Country Park and routes around Gog Magog Hills.

Away from scenic routes, road users typically fall into a lower category of sensitivity. Road receptors considered to have potential for visual effects include:

- Users of M11;
- Users of A1309;
- Users of Addenbrooke's Road;
- Users of A10 Cambridge Road;
- Users of Cantelupe Road; and
- Users of Wort's Causeway.

Strategic Viewpoint locations identified in the CCC Local Plan, October 2018, where relevant will be included in the visual appraisal.

Potential Impacts and Effects

The following table summarises the potential landscape and visual impacts and effects considered likely to arise during the construction and completed development stages.

Construction Stage		Completed Development Stage	
Potential Impacts	**Potential Effects**	**Potential Impacts**	**Potential Effects**
• Construction of the Illustrative Development Option on an agricultural/ greenfield site.	• Loss of landscape features - Direct loss of on-site landscape features. • Landscape Character - Indirect change in Site landscape character by virtue of the removal of the existing landscape features/cover and introduction of temporary and phased construction activities and emerging built form. • Landscape Character - Indirect change to the local, regional and national landscape character.	• Introduction of the completed Illustrative Development Option.	• Landscape Character - Change in Site landscape character by virtue of the introduction of new permanent built form and landscaping. • Landscape Character - Indirect change to the local, regional and national landscape character.
	• Visual - Changes to views		• Visual - Changes to views
	• Visual - Changes to visual amenity of the viewer		• Visual - Changes to visual amenity of the viewer

Landscape and Visual

Anticipated Design, Mitigation and Enhancement Measures

This section summarises the matters to be considered during the masterplan design evolution process.

Design Stage

- The Illustrative Development Option would consider landscape character, key views, development scale and building heights carefully. Work around building heights should ensure that built form is an appropriate scale to existing features and the landscape and townscape setting within adjacent views of the proposals.
- The masterplan would seek to retain physical landscape features and habitats of value. This would include the retention of as many hedgerows and areas of existing vegetation within the Site as is reasonably practicable. In addition, existing hedgerows and vegetation would be reinforced where possible as part of the defining structure of the Proposed development's green infrastructure networks.
- The landscape strategy would create habitats of value on existing arable land, including flowering grassland, diverse scrub, orchard and varied wetland habitats. Species of local provenance and species offering climate resilience would be prioritised.
- The landscape strategy would integrate with the SuDS strategy and be resilient to climate change factors. It would strategically expand and connect existing habitats across and beyond the Site, including 'The River Cam (South of Cambridge City)' strategic initiative corridor.
- The Illustrative Development Option would deliver attractive, high-quality, accessible, inclusive and safe green infrastructure.
- The Illustrative Development Option would incorporate space for residents, employees, and visitors to relax, socialise, play and exercise. Areas created would comprise landscape areas for community events and direct, logical, traffic-free movement corridors that support active and healthy lifestyles and ensure the proposals are well-connected and tie seamlessly into existing travel networks.
- The tree cover and canopy on-site would be increased to reinforce landscape character and deliver visual enclosure and separation. Mixed areas of scrub and broadleaf wooded margins would be implemented to soften the edges of the new settlement, views of built form and reinforce a new green belt boundary that features the enduring features of the M11, Trumpington Meadows Country Park and Hauxton Road;
- The Illustrative Development Option would seek to respond to context and local landscape and townscape character, but also to deliver a distinct and high quality built intervention;
- The landscape strategy would provide appropriate buffers to Trumpington Meadows Country Park and landscape the proposed buffers sensitively to form a complementary extension to parkland.
- The design of the Illustrative Development Option would respond to the existing townscape character and complement and enhance the existing urban edge of Trumpington Meadows.

Construction Stage

- All retrained vegetation and landscape features would be protected in line with BS 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'.
- Planting and implementation of the landscape strategy would occur at the earliest opportunity for early establishment and planting would be maintained carefully during construction to ensure establishment.

Completed Development Stage

- Planting and habitats would be maintained in-line with landscape plan and Habitat Management Plan to ensure BNG.

Summary

- Through an iterative design process, informed by the emerging findings of landscape and visual work, it is considered that the Illustrative Development Option can be successfully incorporated and assimilated into the receiving landscape. Whist there would be a high degree of landscape change within the site a positive new built and green infrastructure environment could be created.

10. Summary

The aim of the Environmental Report is to demonstrate that British Land is committed to establishing a comprehensive understanding of the environmental baseline conditions and sensitive receptors at the Site and within the surrounding study area.

The Client aims to use the environmental impact assessment process to proactively inform the masterplanning process and to enhance the environmental performance of the Illustrative Development Option and to help GCSPS with the Local Plan making process. The design, enhancement and mitigation measures outlined in Section 9 would be explored by the Client for the design, construction and completed development stages. In addition, consultation would be undertaken with the identified stakeholders on the emerging design proposals. With these identified measures in place, the potential for adverse significant effects to occur would be avoided, reduced and mitigated.