



Wixams End

A Vision for the land west of A6, Bedford

Wates
DEVELOPMENTS

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Professional Team



This Vision document has been prepared on behalf of Wates Development as a response to Bedford Borough Council (BBC) Call for Sites invitations for proposals to sustainably support housing growth in Bedford through the emerging BBC local plan.

The document seeks to set out the vision for delivery of a new sustainable residential-led development complementing the Wixams development to the south of Bedford and building on the framework for delivery of the new settlement.

Bounded by the A6 to the east and Wixams to the north and west, the proposals will provide a logical and complimentary extension to the existing settlement. The proposals maximise the opportunities offered by the site's sustainable location.

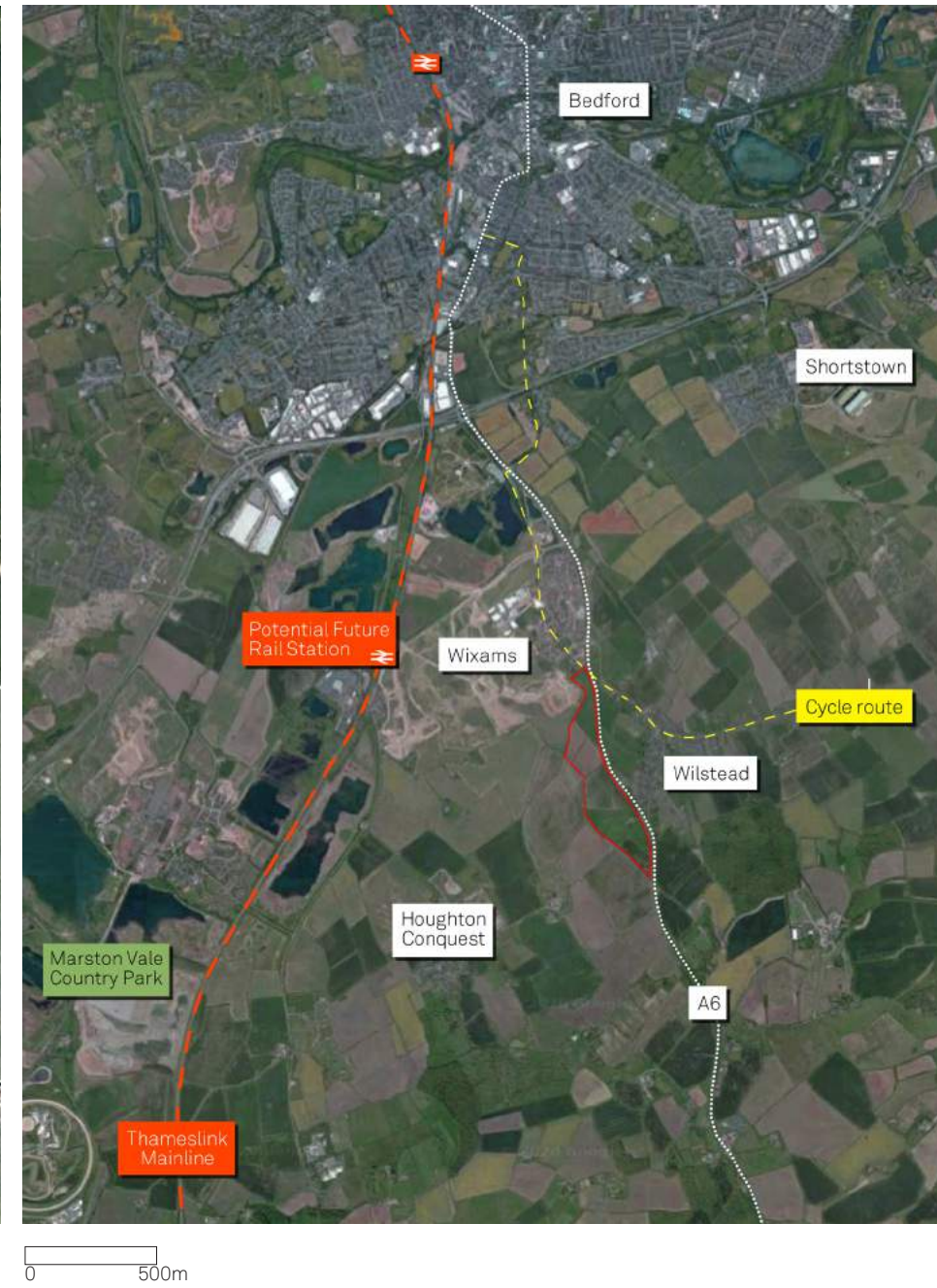
Wixams is designated as a Key Service Centre in the adopted Local Plan. The Council aspiration is for the development of the main new settlement to continue and key services including the village centre and a new railway station at Wixams as identified in the adopted Local Plan 2030.

Technical work undertaken by third-party consultants, including transport, landscape and ecological consultants, have informed the current proposals and are summarised in this document. These have identified no significant technical constraints. The site is entirely deliverable and achievable within the next five years.



1.0 Introduction

This section presents the design development of the illustrative masterplan, taking into account the key considerations from the site assessment.



1.3 Site & Context

Location

Wixams is a new town and civil parish located in Bedfordshire, England, which has been under construction since early 2007. With 4,500 homes, it is expected to become the third largest settlement in the Borough of Bedford after Bedford itself and Kempston, and one of the largest new settlements founded in England in recent times. The settlement is located to the south of Bedford and is bounded by the A6 to the east and the Thameslink Mainline to the west.

Wixams is formed of four villages which are being built in phases. The completed Village 1, now known as Lakeview, contains a wide range of facilities needed to service daily needs including employment, education, convenience retail, community and leisure facilities, these are complimented by the good range of facilities in nearby Wilstead. Wilstead Industrial Park is a local source of employment and will continue to expand as Wixams develops whilst Bedford and its services and facilities can be accessed in less than 25 minutes by cycle, bus or car.

Site Description

The site comprises agricultural fields of 55.44ha (137 acres) located adjacent to the southern built-up edge of Wixams. The A6 runs along the east boundary, and agricultural fields adjoin the west boundary.

Access

The site is well located to significant existing and planned facilities both within Wixams and Wilstead and is in a sustainable location.

The longer term delivery development of Wixams as a New Town will see the delivery of a new town centre, strategic employment areas and a wide range of leisure uses. These enhanced facilities will mean that many of resident's everyday needs can be fulfilled within the local area, without the need for wider travel.

Walking accounts for circa 80% of journeys up to one mile (1,600m) and around one third of journeys up to two miles (3,200m) (ref: National Travel Survey: England 2018). Typical daily cycling journeys of 5km are regularly achieved. Table 1 demonstrates that many local facilities fall comfortably within walking distance of the site, and a short cycle journey, offering good potential for sustainable movement.

The delivery of the further Wixams Villages in the future will enhance local facilities. In particular to deliver:

- A new Town Centre (Village 3) – 1,850m (~20 minute walk, 7 minute cycle)
- Key Sports Facilities (Village 2 and 3) – 1,650m – 2,050m (~20 minute walk, 6 minute cycle)
- Strategic Employment Area – 2,350m (<25 minute walk, 10 minute cycle)
- Potential Rail Station – 3,450m (13 minute cycle)

Purpose	Destination	Distance (m)	Walk Time (Mins)	Cycle Time (Mins)
Leisure	Portu Gallos Restaurant	1100	13	4
	Lakeview Village Hall	1100	13	4
	The Red Lion Pub	1350	16	5
	The Woolpack Pub	1400	17	5
	Wilstead Jubilee Centre	1450	17	5
	Wixam Hatters F.C	1550	18	6
	Jubilee Playing Fields	1550	18	6
Retail	Wilstead BOWLS Club	1550	18	6
	Wilstead Park	1750	21	7
	Budgens	1100	13	4
	Wilstead Post Office & Stores	1550	18	6
	Wilstead Industrial Park	1550	18	6
Education	Lakeview School	1050	13	4
	Wixamtree Primary	1300	15	5
	Wixams Academy	1450	17	5
	Wilstead Lower School	1550	18	6
Healthcare	Wilstead Pharmacy	1400	17	5

Source: Consultants Measurements from centre of site



2.0 Land Use & Delivery Timetable

2.1 Land Uses Table

The actual proposed site is the area adjacent to Wixams Village 2. The total area of this part of the site is 23.74 ha, with 11.87 ha being developable area and the remaining 11.87 ha being designated as public open space. At a density of 35 dwellings per hectare, the site will provide 415 homes.

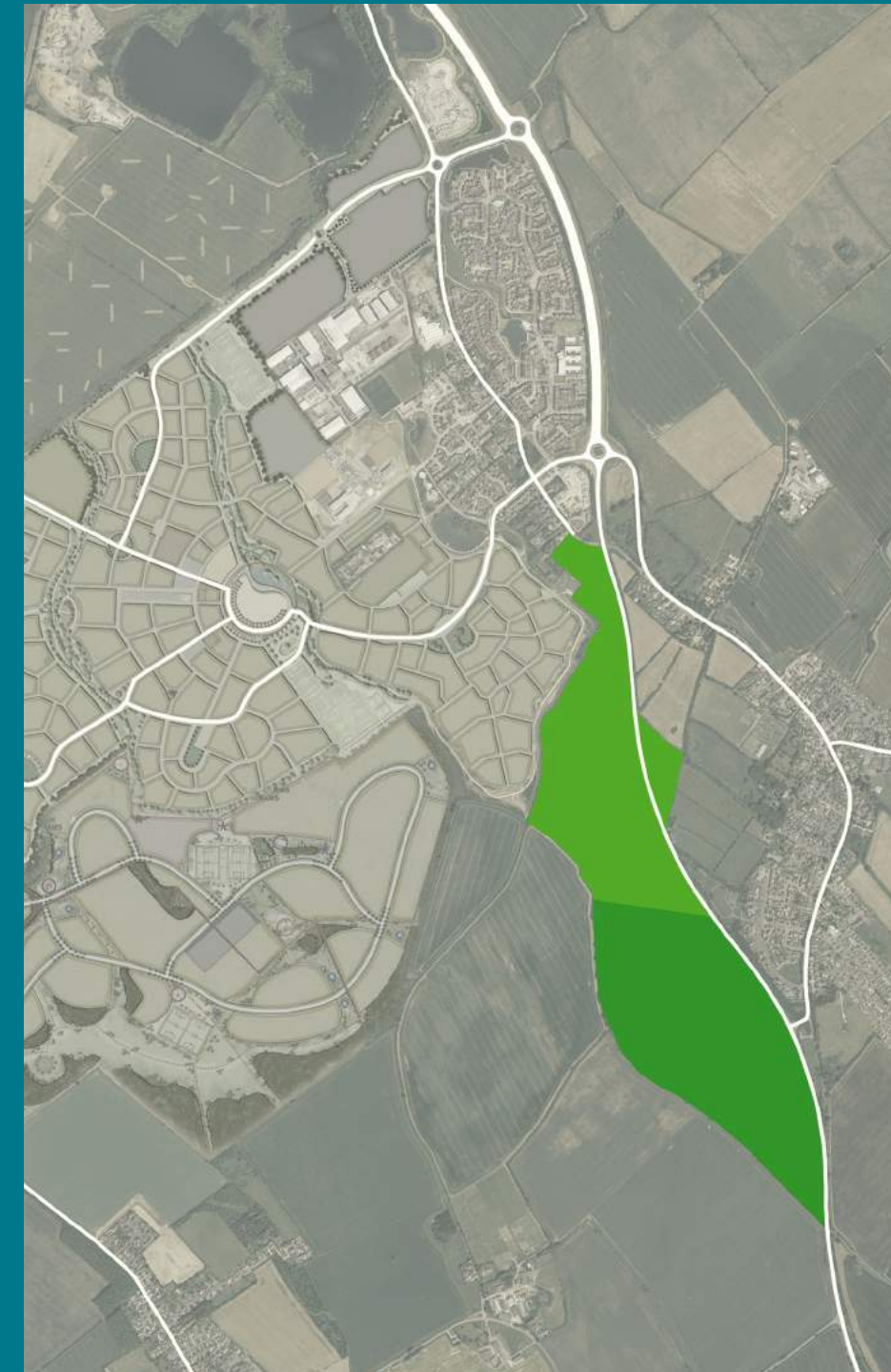
The remaining land under legal control, to the south of the proposed site, is currently arable land with the potential future uses including; a country park, a wooded area supporting Forest of Marston Vale policy, a Biodiversity Sink or a future allocation area. There is also potential for the redevelopment of the existing agricultural building into a Community Centre, Farm Shop or Visitor Information Point.

Northern Area

Residential (units)		Community Infrastructure	Open Space Types
Private units	Affordable units		
290	125	Contributions to facilities in Wixams and opportunity for live/work units within the development. New play areas and sports facilities to be provided.	Green way created along existing public right of way with village green at centre, Circular walking routes, play trails, LEAP, NEAP, woodland buffer zones.

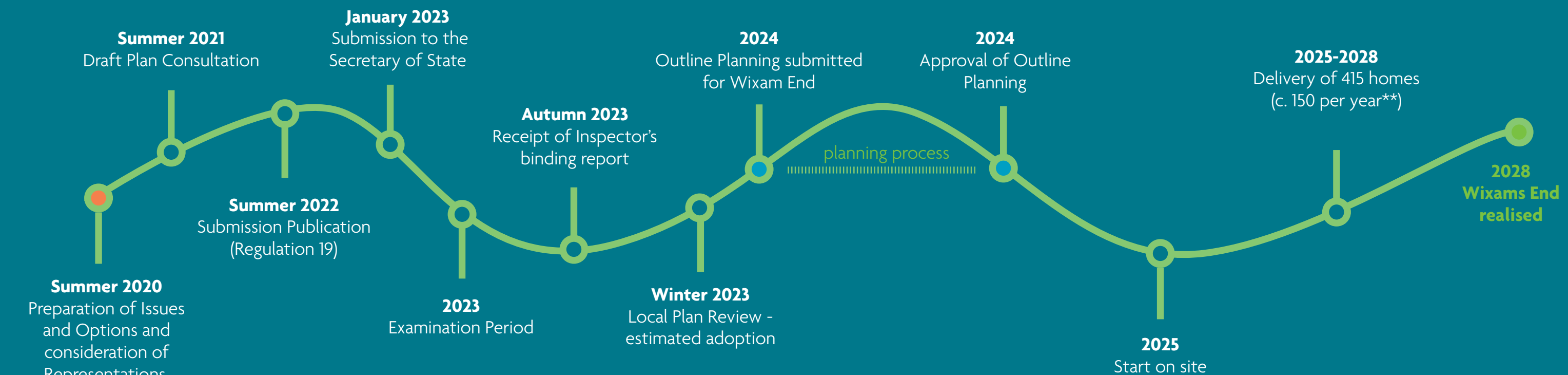
Southern Area

Residential (units)		Community Infrastructure	Open Space Types
Private & Affordable units			
Potential as future allocation area		Potential for community centre, visitor information point or farm shop.	Potential to become a country park, a wooded area supporting Forest of Marston Vale policy or a Biodiversity Sink.



Proposed Site (Northern Area) ■
Remaining land under legal control (Southern Area) ■

2.2 Delivery Timetable



** Average of 2 developer on site at delivery rate of 75 units per annum per developer.



3.0 Site Assessment

Wates Developments have carried out a detailed assessment of the key planning and technical influences on the site. The following pages summarise the key considerations and findings of the work carried out to date and how they have influenced the illustrative masterplan.

3.1 Planning

Introduction

The site is located entirely within the administrative boundary of Bedford Borough Council (BBC) but abuts the administrative boundary with Central Bedford District Council on its southern boundary. The site is within the Parish of Wilhamstead. Part of the subject site's northern and western boundaries forms the parish boundary with relatively newly created Wixams Parish boundary.

Bounded by the A6 to the east and Wixams to the north and west, the proposals will provide a logical and complimentary extension to the existing settlement. The proposals maximise the opportunities offered by the site's sustainable location.

Wixams is designated as a Key Service Centre in the adopted Local Plan. The Council aspiration is for the development of the main new settlement to continue and key services including the village centre and a new railway station at Wixams as identified in the adopted Local Plan 2030.

Future Context

The Council recognises that there is need to review its Local Plan in order to accommodate a higher level of growth. Key to this would be to identify further development opportunities, particularly for housing.

The Oxford to Cambridge Arc

With respect to the wider context, the Oxford to Cambridge Arc includes an arching sweep of land between Oxford, Bedford and Cambridge. The area within the Arc includes Buckinghamshire and Oxfordshire authorities in the south and west to Cambridgeshire authorities in the east and north.

Bedford Borough is located within the centre of the Arc.

The recent Government announcement on the Oxford Cambridge Growth Arc includes specific growth targets for Bedford, being a key component of the Arc.

The Budget sets out:

“The government has designated the corridor of land connecting Oxford, Milton Keynes, Bedford and Cambridge (the OxCam Arc) as a key economic priority. Earlier this year, the government announced the East West Rail Company's preferred route for the new line between Bedford and Cambridge. The government will also, subject to planning consents, build a new rail station at Cambridge South, improving connectivity to the world-leading research facilities of the Cambridge Biomedical Campus – the largest cluster of medical and life sciences research in Europe.

The Budget announces plans to develop, with local partners, a long-term Spatial Framework to support strategic planning in the OxCam Arc. This will support the area's future economic success and the delivery of the new homes required by this growth up to 2050 and beyond. The government is also going to examine and develop the case for up to four new Development Corporations in the OxCam Arc at Bedford, St Neots/Sandy, Cambourne and Cambridge, which includes plans to explore the case for a New Town at Cambridge, to accelerate new housing and infrastructure development.”

As such, there is a clear imperative to deliver more homes in sustainable locations as well meeting the wider housing needs.

The Government's long-term ambition for the Arc is to see it as a driver for major economic growth, identifying it

has having the potential to become an economic asset of international standing – a place that demonstrates the very best of British business and innovation, and for the benefit of local communities and the country as a whole. A major pillar of the Government's strategy is to deliver sufficient, affordable, high quality homes to increase affordability and support growth in the Arc.

The Government published a statement in March 2019 entitled Government Ambition and Joint Declaration between Government and Local Partners which set out a collaborative declaration of ambition between the Government and organisations within the Arc including local authorities within it alongside its four Local Enterprise Partnerships (LEPS).

The long-term economic aspirations for the Arc include an ambition for up to one million high-quality new homes by 2050, to tackle the severe housing affordability issues faced by many, and unlock the Arc's full potential.

As part of the Government's commitment to the Arc, it has committed to completing a new East-West rail route joining Oxford to Cambridge, which forms a key strategic infrastructure project within Bedford Borough Council's recently adopted Local Plan (2020).

The corridor for the new East-West Rail route will bring the route through Bedford Midland Station, connecting the town directly to Oxford and Cambridge and supporting economic growth and prosperity by attracting businesses and jobs to the area. With this route East West Rail is forecast to bring additional economic activity to the borough.

Bedford Borough Context

The Bedford Local Plan 2030, adopted in January 2020

contains a mechanism to respond to the Arc's ambitious growth strategy policy. The plan commits the Council to a challenging timescale to review and if necessary update the plan and an updated or replacement plan must be submitted for examination by January 2023 (LP 2030, policy 1). The examining Planning Inspectors required the Council to have a plan that responds appropriately to longer term growth requirements as soon as possible, which includes the Oxford to Cambridge Arc. Housing need will form a critical part of the plan review.

The ongoing BBC Issues and Options Consultation states that work on the new local plan will focus on how to meet Bedford Borough's own growth requirements based on the Government's published standard method for calculating housing need. It identifies that this will be a significant challenge as it represents a 35% increase in the annual level of housing growth contained in the recently adopted Local Plan 2030 (adopted January 2020).

National Context

In terms of the wider direction of travel, the Government has indicated a radical overhaul of the planning system, with the objective of ensuring speed, national infrastructure delivery, and further deregulation to stimulate economic growth with increased housing delivery a core tenet of this strategy. The Government envisages the most radical alteration since the 1940s. Housing delivery will constitute a key tenet of these reforms.

Relevant Planning Policy and Other Considerations

This section provides an overview of national, regional and local policies and other material considerations. It should be noted that for the purposes of this Vision Document, policies relating to general development principles, and key development designations and parameters have been

considered.

As further design work is undertaken, the requirements of detailed planning policies in respect of issues such as more detailed design matters as acoustics, daylight / sunlight etc. which will fall to be considered outside of this Vision Document and in due course as more detailed proposals come forward.

National Context

Government Planning Policy is contained within the National Planning Policy Framework (NPPF, published in 2018 and updated 2019). This is augmented by Planning Practice Guidance (PPG). The NPPF identifies that a supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements, provided they are well located and designed, and supported by the necessary infrastructure and facilities. It notes that strategic policy-making authorities should identify suitable locations for this type of larger scale development where this can help to meet identified needs in a sustainable manner. It states that planning authorities should:

- consider the opportunities presented by existing or planned investment in infrastructure, the area's economic potential and the scope for net environmental gains;
- ensure that their size and location will support a sustainable community, with sufficient access to services and employment opportunities in larger towns to which there is good access;
- set clear expectations for the quality of the development and how this can be maintained.

At the heart of the NPPF is a presumption in favour of sustainable development. Paragraph 11 sets out that in terms of plan-making “plans should positively seek opportunities

to meet the development needs of their area, and be sufficiently flexible to adapt to rapid change”. It also sets out that “strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses, as well as any needs that cannot be met within neighbouring areas”. The Framework sets out that that plans should (inter alia) “be prepared positively, in a way that is aspirational but deliverable” (para. 16).

The Development Plan

The relevant Development Plan in this instance comprises the following documents:

- Bedford Borough Local Plan (adopted January 2020);
- Saved policies from the Bedford Borough Local Plan (adopted October 2002)
- Saved policies from the Allocations and Designations Local Plan (adopted July 2013)

Key Allocations and Designations

The site is located directly abutting the defined settlement boundary of Wixams in the Development Plan. There are no specific land use designations for the site. The site is within the defined 'Forest of Marston Vale' in which development proposals are expected to deliver 30% tree cover across through a combination of planting new tree, woodlands and hedgerows (policy 365, Local Plan, adopted 2020).

The site is also identified as part of a 'Local Gap' between Wixams and Wilstead under saved policy AD42 of the adopted Local Plan. This policy seeks to restrict the coalescence of settlements and reduce harm to the character, identity and setting of these gaps. The policy states that proposers of development in or adjoining a local gap will be expected to demonstrate to the Local Planning Authority that

3.1 Planning (Continued)

their proposal does not conflict with the objectives of this policy.

A Neighbourhood Area was for the whole of the Wilhamstead Parish was designated in 2017 although there has been no formal consultation on an associated neighbourhood plan.

In relation to flood risk, there is a very limited part of the site lying east of the A6 located partly within Environment Agency defined Flood Zone 3 whilst the remainder of the site is in Flood Zone 1. However, the large scale published flood risk information does not cover the ordinary watercourses along the site's southern and northern boundaries and preliminary site specific hydraulic modelling was undertaken by Wates' retained consultants, JNP, to better assess risk at the development site. The conservative site specific modelling developed to support this vision document confirmed low risk of flooding from the adjacent watercourses.

All other potential sources of flood risk (i.e. surface water and groundwater) were also duly assessed and deemed to pose a low risk. In relation to heritage, the nearest statutorily listed buildings are located to the east of the A6 within Duck End and Wilstead. A heritage assessment has been undertaken as part of these proposals.

The definitive map shows there are two Public Rights of Way which cross the site, detailed on the mapping within this document.

A new railway station for Wixams is identified as a strategic infrastructure project which the Council is a key partner and is identified in the Local Plan to be delivered early in the plan period (LP 2030, para 12.29 and policy 90S). Planning permission has recently been approved for the new railway station located on the western edge of Wixams which will provide links with Bedford and Central London stations, once completed.

Wixams

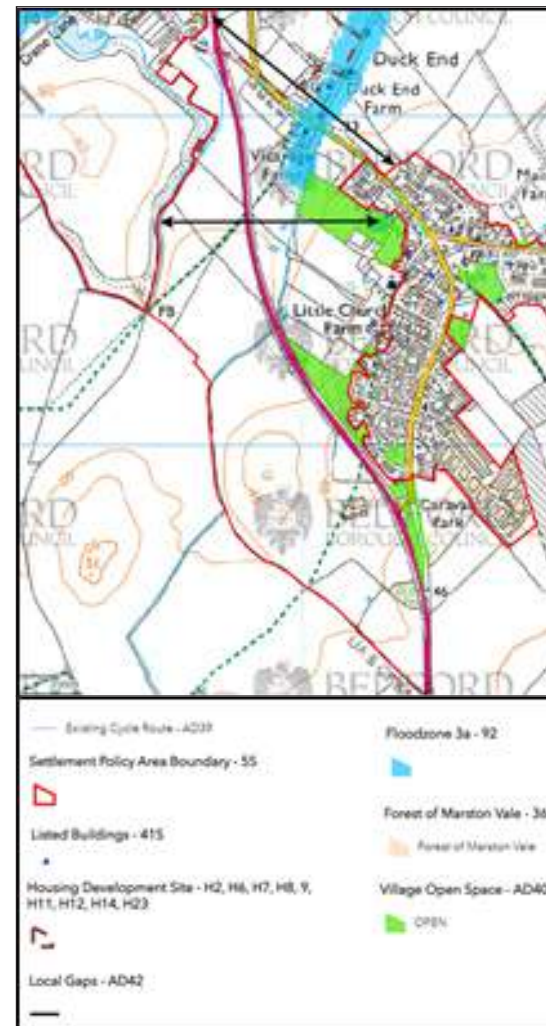
Wixams continues to be built out and the Local Plan (2020) defines it as a key service centre, which is recognised as containing a good range of

services and is well connected to larger town centres by regular public transport. They provide a strong service role for the local community and surrounding area.

The Wixams Masterplan was adopted by the adjoining LPA, Central Bedfordshire Council, for development management purposes in 2015. Outline planning permission was granted for the masterplan area under Bedford Borough Council reference 11/01380/M73 (approved 2011) and Central Bedfordshire Council under reference CB/11/02182 (approved 2011).

The overall Masterplan consists of four villages. Village One is the eastern most village adjacent to the A6 and can be considered the existing completed area of Wixams, directly north of the subject site. The Masterplan identified development to the south west of Wixams for around 1,500 new dwellings in what is known as 'village 2' of the Masterplan. This is shown in the below in the extract from the Wixams Detailed Design Brief and Code (2015), highlighted against the wider Wixams masterplan background (shown in darker colour). The subject site is located immediately east of Village 2 which is currently under construction.

Village 2, once complete, will comprise approximately 1,290 units, a primary school, secondary school and a local centre. A current reserved matters application was submitted in September 2019 for 268 units by Barratt Homes and approved in April 2020 (reference 19/02071/MAR) and reserved matters applications have now been approved for around 900 units in village two at the time of writing. The adopted Local Plan 2030 identifies that over the last ten years, major sites such as the Wixams, Great Denham and West of Kempston have been developed, providing a large number of new homes. The Plan's stated strategy is to continue to focus growth in this area as much as possible and it is noted that capacity in the urban area is becoming increasingly constrained due to the large amount of development that has already taken place (Local Plan 2030).



Extract from Development Plan policies map including policies of the Bedford Borough Local Plan 2030, adopted January 2020, Allocations and Designations Local Plan, adopted July 2013 and Local Plan 2002, adopted October 2002

Conclusion - An Opportunity for Sustainable Housing Growth

The proposed site provides a sustainable residential – led extension to the existing and emerging settlement of Wixams. The proposals will provide over 400 new homes and the Vision Document illustrates how this will logically interlink with the wider Wixams development. Located directly adjacent to the existing settlement's south east boundary, the land is also bounded to the east by the defensible boundary of the A6 restricting physical coalescence with adjacent settlements including Wilstead.

The proposals will include the following key benefits:

- 415 new homes including 125 affordable homes in close proximity of existing and planned facilities both within Wixams and Wilstead, which are both defined as Key Service Centres in the Local Plan;
- A wide variety of different tenures and house types for both sale and rent;
- Extensive public open space within and adjacent to the site
- New highways infrastructure, footpath connections, including retaining Public Rights of Way (with modifications to the routes where required), a new roundabout on the A6 to the east, opportunities for new public transport infrastructure, footpath and cycle connections in to the existing Wixams development and a 'green way' along the route of one of the existing Public Rights of Way.
- Green infrastructure in the form of extensive planting and enhancements to existing landscape features will provide key corridors which will interact with the built development whilst providing biodiversity and environmental net gain.
- A number of basins and swales which will provide three primary benefits:
 1. enrich the landscape character of the development;
 2. enhance the site's biodiversity; and,
 3. improve drainage using SUDs principles.
- An opportunity to provide a new fully sustainable community with distinctive, well built homes, adaptable design, using modern energy

efficient sustainable construction methods and technology alongside pedestrian and cycling routes and new public transport links.

- The area south of the site is within the control of Wates. Future uses on this 'southern' site could offer significant benefits not just to the residents of Wixams End, but for residents within Wixams and Wilstead and further afield. Potential uses could include a country park, enhanced woodland supporting the Forest of Marston Vale policy or a future allocation.

A series of third-party technical reports have informed the Wixams End proposals. These are summarised elsewhere within this document and as follows:

- In relation to landscape, the site lies within the Local Gap, under saved policy AD42 in the Allocations and Designations Local Plan. The landscape appraisal undertaken to inform this submission has helped set the parameters for the proposals.
- An extended phase 1 ecological appraisal has shown the majority of the site is of low ecological value, although with potential to support foraging and commuting bats. The proposed layout has sought to retain areas of ecological value. Provision of open space and green corridors at the southern extent of the site will maintain ecological connectivity and provide areas for new habitat creation.
- In relation to trees, the scheme is designed to maintain existing tree cover and the hedgerows and provides opportunities to safeguard the long-term retention of trees that have the potential to become veteran and ancient trees.
- A heritage assessment has shown there are some non-designated heritage assets within the study area although further work is required to assess these fully and that there are no designated heritage assets within or immediately adjacent to the site.

In summary the site provides an outstanding opportunity - it is deliverable, available now and offers a suitable and sustainable location for new development, complimenting the emerging Wixams community. There is a realistic and achievable prospect that new homes will be delivered on the Wixams End site within the next five years.



Wixams Village Detailed Design Brief and Code (October 2015). Village 2 highlighted, directly adjacent to the subject site.

3.2 Landscape

Appraisal

The site is not within any designations for valued landscapes, such as AONBs or National Parks. It forms part of the “Local Gap”, Policy AD42, a saved policy, and is with the Forest of Marston Vale (Policy AD25) both of which are defined within the “Allocations and Designations Local Plan Policies” (2013). A footpath (FP3) extends through the site. There are no other landscape or landscape-related designations on the site. Land to the north and west of the site is currently under development as housing and for mixed use development.

In the conjoined Bedford Borough and Central Bedfordshire Landscape Character Assessment (January 2015) the larger part of the site (to the west of the A6) is classified as being within area 5D: Clay Vales – North Marston Clay Vale. The smaller, triangular part of the site to the east of the A6 is classified as part of area 5E: Clay Vales – East Marston Clay Vale although no development has been proposed within this part of the site.

Key characteristics of the North Marston Clay Vale include the following:

- “A large scale landscape with a mix of agricultural and industrial use;
- Bedford... brings strong urban fringe characteristics to the landscape – large scale industrial estates/ retail parks;
- A number of busy transport routes cut north south through the landscape – including the A421, the A6 and the main railway lines running from Bedford to London and Milton Keynes; and
- Open character with expansive views across the vale to the prominent landscapes of the Mid Greensand Ridge and the Cranfield to Stagsden Clay Farmland within Central Bedfordshire”.

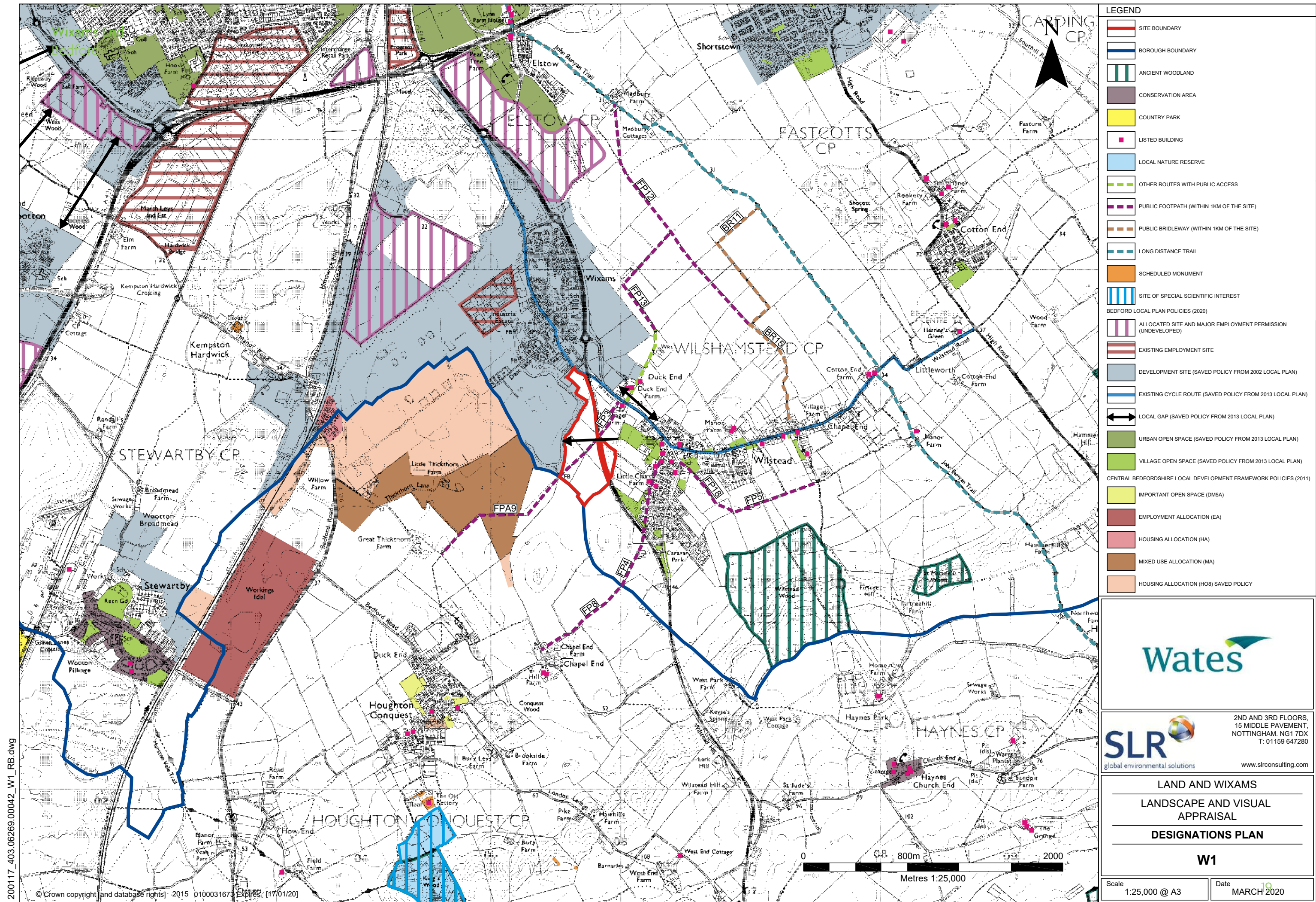
In summary, the site is within an area which is recognised as being influenced by the urban fringe, industrial use and busy transport routes, but is large-scale and open with a visual connection to the Mid Greensand Ridge. Recently permitted uses are likely to cause further changes in the localised character of the area.

SLR was instructed to identify the potential landscape and visual effects of the proposed development, and to advise on the potential form of development. The following elements have been incorporated into the layout to minimise the landscape and visual effects of the development:

- Development has been limited to the larger area of the site, set back to the west of the A6, to form an extension to the existing settlement and to respect the Local Gap. Development has been pushed back from the narrowest part of the gap and a combination of tree planting and areas of open space reinforce its openness at this point.
- Woodland buffers have been proposed between the A6 and the proposed development area, in line with Policy AD25 which encourages provision of woodland within this area, and to maintain the effectiveness of the Local Gap (Policy AD 42).
- Existing hedgerows would largely be retained and would be reinforced with mixed, native, shrub planting.
- Proposed development has been set back from Footpath 3 which extends through the site and this would form a green way connecting through the proposed local centre out to the open countryside and to residential and mixed use development to the west.
- A country park has been proposed to the south which would maintain the openness of land at the highest elevation and maintain expansive open views across the vale.

The landscape assessment has identified that development of the site result in localised major to moderate effects on some landscape elements within the site which would reduce over time as mitigation planting reaches semi-maturity. There is potential for moderate to minor effects on the localised area of LCA North Marston Clay Vale reducing to minor effects on the wider LCA. Effects would reduce over time as the proposed woodland edge planting reaches semi-maturity.

The visual assessment identifies that development of the site would result in localised major and moderate/major effects for the closest residents, walkers along the footpath crossing the site (FP3 connecting to FP9) and the new footpath on the edge of new mixed-use development to the west.



LEGEND	
[Red outline]	SITE BOUNDARY
[Blue outline]	BOROUGH BOUNDARY
[Green hatched]	ANCIENT WOODLAND
[Grey]	CONSERVATION AREA
[Yellow]	COUNTRY PARK
[Pink square]	LISTED BUILDING
[Blue square]	LOCAL NATURE RESERVE
[Green dashed line]	OTHER ROUTES WITH PUBLIC ACCESS
[Purple dashed line]	PUBLIC FOOTPATH (WITHIN 1KM OF THE SITE)
[Orange dashed line]	PUBLIC BRIDLEWAY (WITHIN 1KM OF THE SITE)
[Blue dashed line]	LONG DISTANCE TRAIL
[Orange square]	SCHEDULED MONUMENT
[Blue hatched]	SITE OF SPECIAL SCIENTIFIC INTEREST
[Blue hatched]	BEDFORD LOCAL PLAN POLICIES (2020)
[Pink hatched]	ALLOCATED SITE AND MAJOR EMPLOYMENT PERMISSION (UNDEVELOPED)
[Red hatched]	EXISTING EMPLOYMENT SITE
[Blue hatched]	DEVELOPMENT SITE (SAVED POLICY FROM 2002 LOCAL PLAN)
[Blue hatched]	EXISTING CYCLE ROUTE (SAVED POLICY FROM 2013 LOCAL PLAN)
[Black arrow]	LOCAL GAP (SAVED POLICY FROM 2013 LOCAL PLAN)
[Green hatched]	URBAN OPEN SPACE (SAVED POLICY FROM 2013 LOCAL PLAN)
[Green hatched]	VILLAGE OPEN SPACE (SAVED POLICY FROM 2013 LOCAL PLAN)
[Green hatched]	CENTRAL BEDFORDSHIRE LOCAL DEVELOPMENT FRAMEWORK POLICIES (2011)
[Yellow hatched]	IMPORTANT OPEN SPACE (DMA)
[Red hatched]	EMPLOYMENT ALLOCATION (EA)
[Pink hatched]	HOUSING ALLOCATION (HA)
[Orange hatched]	MIXED USE ALLOCATION (MA)
[Light orange hatched]	HOUSING ALLOCATION (H08) SAVED POLICY

Wates

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**LAND AND WIXAMS
LANDSCAPE AND VISUAL
APPRAISAL
DESIGNATIONS PLAN**

W1

Scale: 1:25,000 @ A3 Date: MARCH 2020

3.3 Ecology

Appraisal

An ecological appraisal of the site has been undertaken based on an Extended Phase 1 habitat and general fauna survey together with a desktop review of background information.

No ecological designations are located within or bounding the site

The majority of the site is of low ecological value, dominated by intensively farmed arable land and improved grassland, although some habitats of interest are present, largely associated with the field boundaries, including areas of woodland, ponds, mature trees and a hedgerow network.

The site offers potential to support low numbers of foraging and commuting bats, and a limited assemblage of largely common and widespread bird species, with some potential to support Priority farmland bird species such as Skylark. Badger has also been recorded, whilst some opportunities are also present for species such as Great Crested Newt and reptiles.

Accordingly, the identified ecological interest has formed a key consideration for the scheme, with the layout seeking to retain such features as woodland, hedgerows and ponds, maintaining these key habitats for faunal species, and enhancing significant areas of the site as open space for the benefit of biodiversity.

Provision of open space and green corridors at the southern extent of the site will maintain ecological connectivity and provide areas for new habitat creation, whilst mitigation measures will be implemented to safeguard ecology during construction works.

Existing features, such as woodland and trees, are to be incorporated into green infrastructure to provide substantial areas for new habitat creation and maintain connectivity for wildlife across the site and beyond, whilst provisions for areas of wildflower grassland and the erection of bat and bird boxes form nesting and roosting opportunities for protected species.

Specific survey work in respect of faunal species including bats, breeding birds, Great Crested Newt and potentially Dormouse and reptiles (subject to habitats affected) will be carried out in advance of any future planning application.



Key:			
Site Boundary	Plantation Woodland	Hedgerow	Low Bat Roosting Potential Tree
Semi-improved Grassland	Scrub and Ruderal	Spoil heap	Low-Moderate Bat Roosting Potential Tree
Improved Grassland / Recently Sown	Bare Ground / Compound Area	Badger Set (Main / Outlier Set)	Moderate Bat Roosting Potential Tree
Arable	Pond	Moderate Bat Roosting Potential Tree Group	Moderate-High Bat Roosting Potential Tree
Semi-Natural Woodland	Watercourse	Tree / Mature Tree	

Aspect Ecology Limited - West Court - Hardwick Business Park
Noral Way - Banbury - Oxfordshire - OX16 2AF
01295 279721 - info@aspect-ecology.com - www.aspect-ecology.com

Land East of Wixams, Bedfordshire PROJECT TITLE

Habitats and Ecological Features

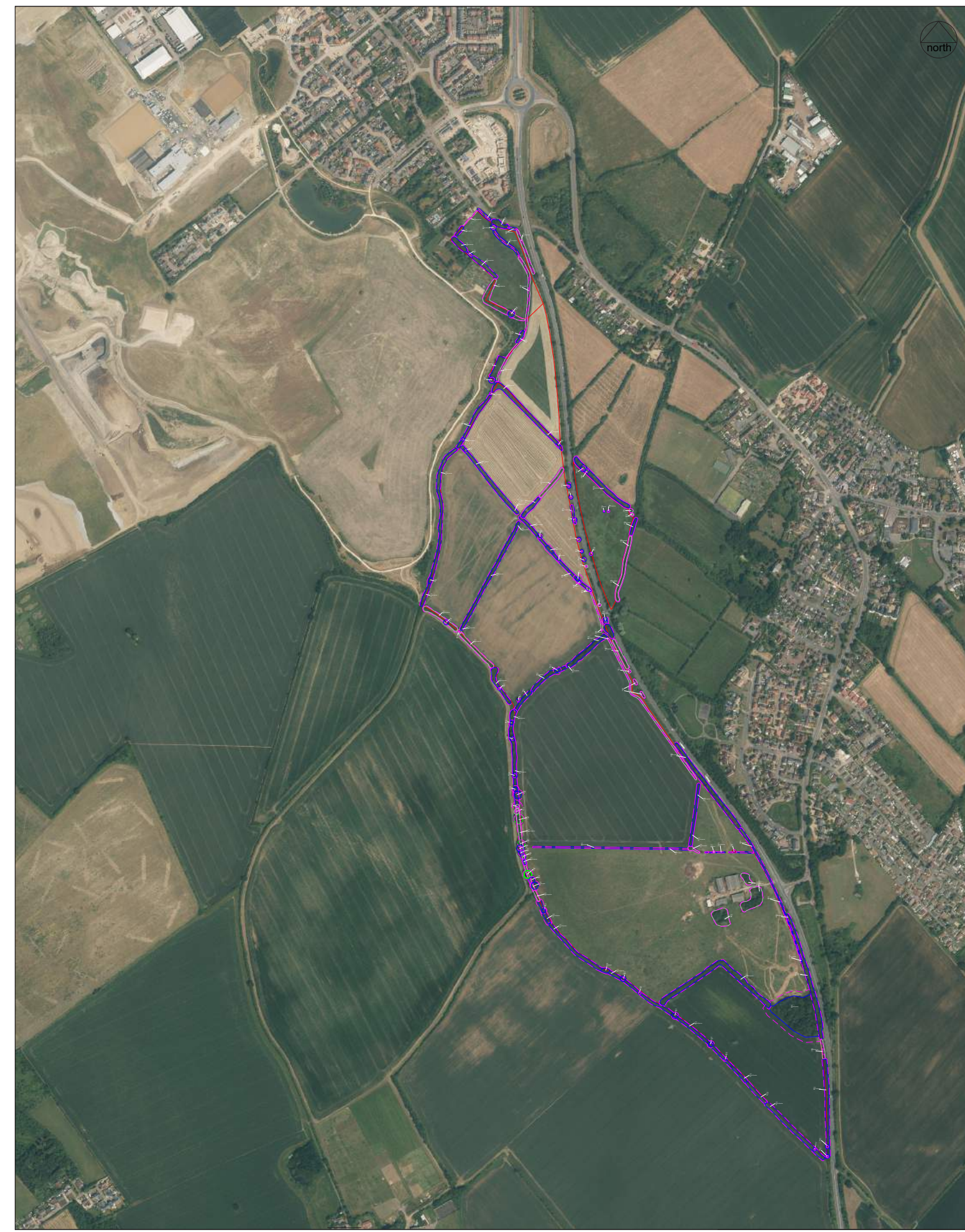
5820/CON2 DRAWING NO.
March 2020 REV. DATE

3.4 Arboriculture

The site comprises arable fields, agricultural buildings, rough grassland and a woodland. Native hedgerows and mature trees are associated with most of the field boundaries. Oak, Ash and Field maple are the dominant tree species across the site with Blackthorn and Hawthorn being the main hedgerow species. Recent road improvements along the A6 have resulted in the removal of some hedging although some individual trees, predominantly early mature Ash, have been retained.

The site is not within a Conservation Area and no on site trees are subject to a Tree Preservation Order. An area of mature woodland is located towards the southern end of the site which requires a 15m buffer zone. A number of individual mature trees within the hedgerows support features associated with veteran trees, the majority of these are located on the western site boundary.

The scheme is designed to maintain existing tree cover and the hedgerows and provides opportunities to safeguard the long term retention of trees that have the potential to become veteran and ancient trees.



KEY	<ul style="list-style-type: none"> T1 Tree Number G1 Group Number H1 Hedgerow Number W1 Woodland Number Root Protection Area 	<ul style="list-style-type: none"> Site Boundary Canopy extent of tree: Category U 	<ul style="list-style-type: none"> BS5837 Tree Categories Canopy extent of tree: Category A Canopy extent of tree: Category B Canopy extent of tree: Category C 	<p>CLIENT: Wates Development Ltd</p> <p>PROJECT: Wixams trees</p> <p>TITLE: Tree Survey Overview</p> <p>SCALE AT A1: 1:10,000 DATE: March 2020</p> <p>731.06/13</p>	<p>Landscapes Architecture Masterplanning Ecology hda</p>
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3.5 Heritage

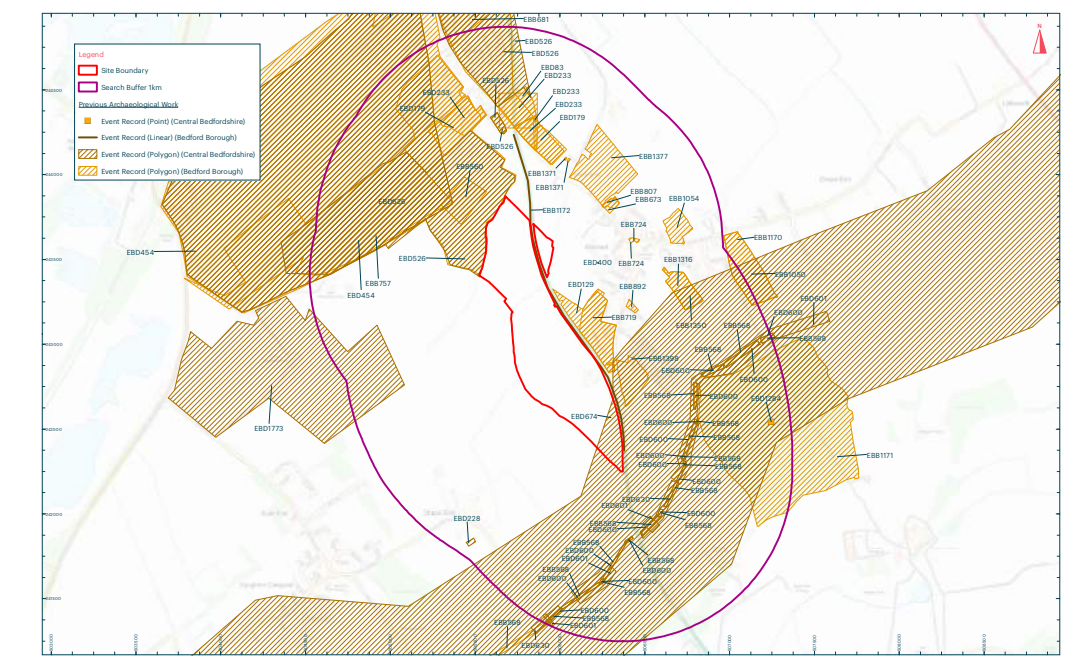
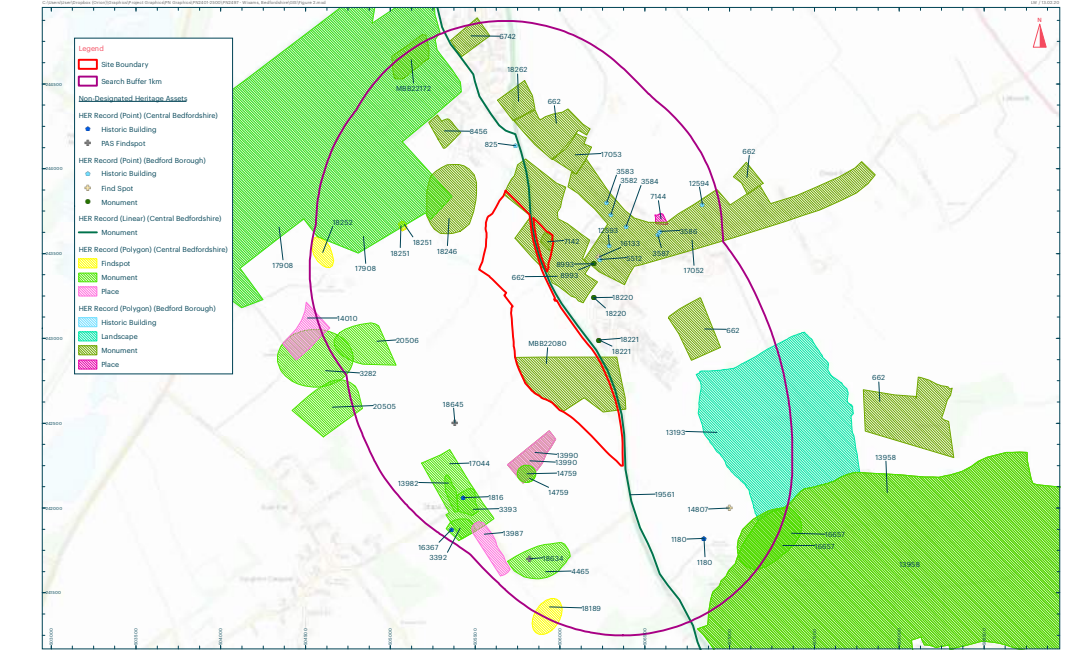
The Heritage assessment has been commissioned by Wates Developments to support promotion of the study site for allocation in the Local Plan. The assessment has been commissioned to identify constraints and opportunities in relation to heritage and to inform the emerging masterplan. This may broadly comprise c. 400 units in the northern 19 hectares of the study site.

Groundworks associated with the proposed development in the north of the study site have the potential to impact the following non-designated archaeological assets:

- The location of a possible medieval/post-medieval moated farmstead in the north-east corner of the study site. Further assessment will be required to clarify the character and significance of this asset. It is recommended that this takes the form of geophysical survey in the first instance, targeted trenching may also be required. Should the presence of a moated site be confirmed at this location a statement of significance should be produced.
- There is general moderate potential for Iron Age to Romano-British occupation in the north of the study site based on proximity to known settlement sites identified by archaeological investigation to the east, west and north of this area. Based on available evidence Iron Age to Romano-British occupation, if surviving within the study site, is likely to be of local significance. Further works to characterise the archaeological resource in this area is likely to be requested to inform the planning application.

There are currently no plans to develop the southern part of the study site. As such there will be no effect to potential archaeological evidence associated with the WWII military camp in the south of the study site (BHER MBB22080).

There are no designated heritage assets within or immediately adjacent to the study site. The assessment has not identified any designated assets which will be negatively impacted by the proposed development.



3.6 Access and Connectivity

Sustainable Travel Strategy

To support the development of the site, a comprehensive, modern and far reaching Sustainable Transport Strategy is being developed. This focuses on reducing the need to travel at the outset but understanding that some travel will need to occur and so delivering realistic and viable travel alternatives to the private car for daily journeys. The Sustainable Travel Strategy will be delivered through a Travel Plan for the site.

As part of the wider Wixams community, there are also several new bus routes planned which will enhance local bus operations. The site offers the opportunity to develop bus service extensions to integrate and serve the site and to support the longer term improvement of bus operations. Measures to promote bus accessibility within the development will be presented, and the local operators will be engaged.

Access Strategy

The access strategy adopted for the wider Wixams settlement was to upgrade and re-align the A6, creating a dual carriageway section of road for some 2.5km south of the A421 with the Wixams Villages served by two primary roundabout connections to the A6. In view of the established access strategy for the wider Wixams development, any access to the site will need to ensure that it does not cause any significant impact on the strategic flow of traffic on the A6.

The proposed access strategy comprises:

- i) Vehicular access to the A6, mirroring the agreed approach for the remainder of Wixams;
- ii) Pedestrian / Cycle / Emergency Vehicle access to Bedford Road; and
- iii) Pedestrian and cycle connections to Bedford Road and the PROW network.

The site will be served by a new 'normal' roundabout junction to the A6. This is consistent with the form of junction that serves the wider Wixams community and maintains the free flow of traffic on the wider A6 corridor.

Non Vehicular Access

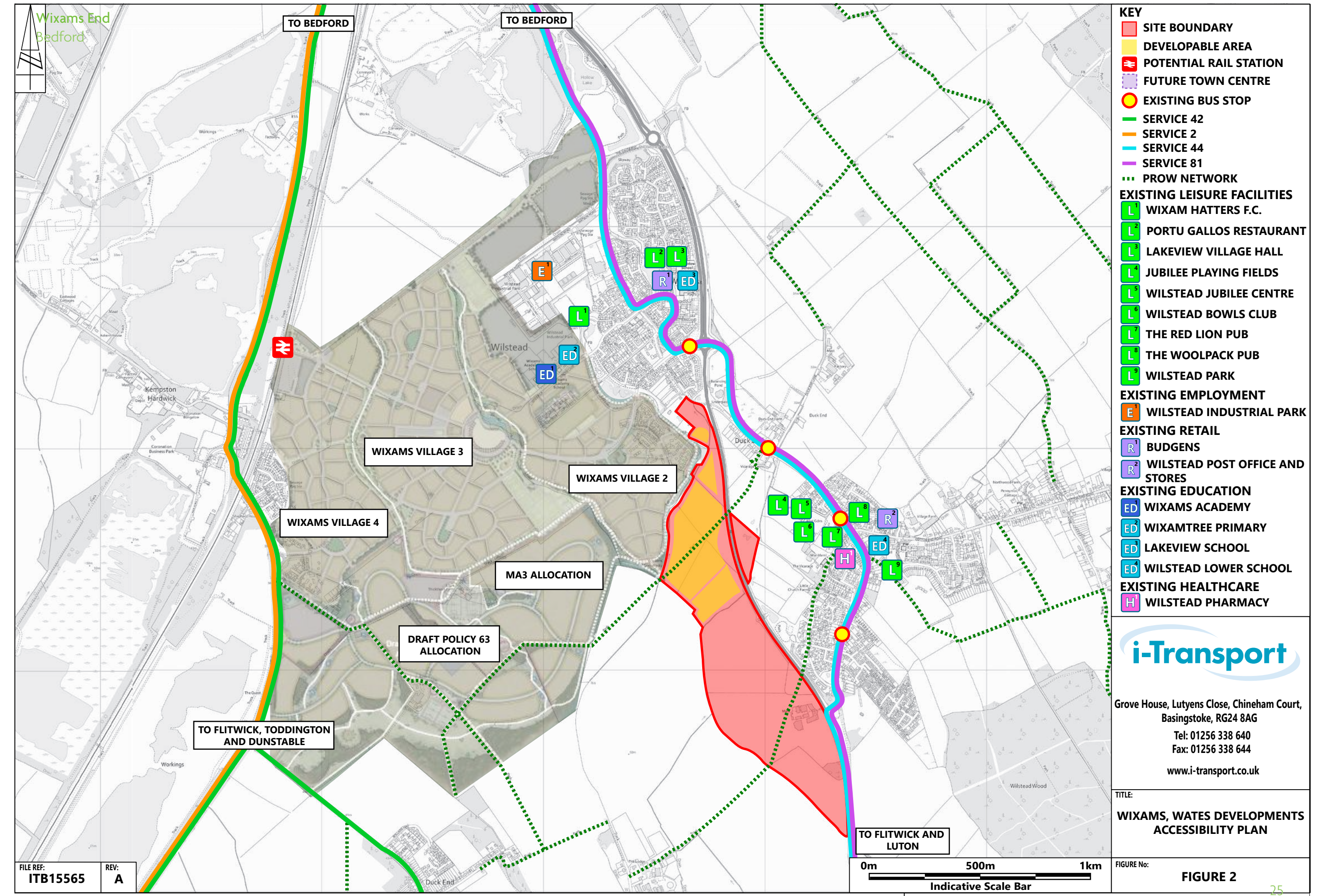
For non-motorised users, access will be delivered to the PROW network and to Bedford Road where there are opportunities to deliver either a dedicated shared footway / cycleway connection and / or a Bus connection on to Bedford Road, depending upon the ultimate Sustainable Transport Strategy and engagement with public transport operators.

Traffic Impact

A development of circa 415 dwellings is likely to generate circa 230 two-way vehicle movements during both the morning and evening peak periods, equivalent to circa four vehicle movements per minute. Some 40% of travel demand will be contained to Wixams itself rather than seeking destinations outside of the town.

Of traffic seeking to travel outside of Wixams, some 80% will seek to travel north towards Bedford and the A421 (around 110 vehicles or 2 each minute), and 20% south towards Luton and other local destinations (some 30 vehicle movements, or one vehicle every 2 minutes. This equates to around a 5% increase in traffic on the A6 to the north of Wixams and 1% to the south. These are not significant traffic flow changes and are unlikely to create material impacts on the wider network.

A full Transport Assessment will be carried out test the impact of the development and which will identify any mitigation measures that may be needed.



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TITLE:
**WIXAMS, WATES DEVELOPMENTS
ACCESSIBILITY PLAN**

FIGURE No:
FIGURE 2

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3.7 Ground Conditions & Utilities

Geology and Hydrology

In accordance with BGS' GeolIndex, the development site lies on mudstone bedrock (Peterborough Member), underlying pockets of superficial deposits of clay, silt, sand, and gravel (Head) in the south part of the site (a small hill on the topographic survey).

In accordance with BGS' Guide to Permeability Indices, mudstone is a fine-grained sedimentary rock considered impermeable even when fractured. The (Head) superficial deposits of clay, silt, sand, and gravel are also considered impermeable due to the clay content.

Both the bedrock and superficial geology of the site are classified as unproductive aquifers in DEFRA / EA's mapping. The EA defines Unproductive Strata as "layers of rock or drift deposits with low permeability that have a negligible significance for water supply or river base flow".

In accordance with DEFRA / EA's mapping the development site is not in a source protection zone. 1.1.5 BGS' Geology of Britain Viewer has no (publicly available) borehole records within 250 m of the development site.

Based on the available geologic and hydrogeologic information – namely the permeability of the mudstone bedrock – infiltration drainage is unlikely to be feasible. Nevertheless, this would be confirmed in due course through a bespoke ground investigation including infiltration tests in accordance with BRE 365.

In accordance with the BBC's SFRA, the development site is in an area with low (< 25%) susceptibility to groundwater flooding. The SFRA states that the only recorded case of groundwater flooding in Bedfordshire occurred in Keysoe, approximately 20 km north of the development site. 1.1.8 Overall, a low risk of groundwater flooding is expected. However some surface waterlogging is to be anticipated due to the low permeability mudstone and within the areas overlain by head deposit. This this would be dealt with by the post-development new drainage

system and during construction by standard dewatering techniques.

The mudstone is expected to be a suitable founding stratum for roads and buildings. Low rise buildings are expected to be founded on shallow strip foundations locally deepened to allow for the influence of trees. Piling is not expected to be required other than for higher buildings (3 storeys plus), on areas of deep soft head deposits, or where plots are proposed in close vicinity to large high water-demand trees.

All available geologic, hydrogeologic and flood risk information indicate a low risk of ground water flooding at the development site. Nevertheless, this should be confirmed by a bespoke ground investigation. These conclusions will be confirmed in due course by a detailed site investigation.

Utilities

The site has been inspected against utility asset records as provided in an Envirocheck Utilities Report.

Other than a HV overhead power cable crossing the site from east to west, no other utilities cross the site. The overhead cabling is outside of the anticipated built development area.

Connection to foul sewers, gas and potable water will require laying new network assets along the A6 for approximately 490m to Bedford Road.

Surface water will be discharged into the local watercourses.

Connection to the local power grid and telecommunications should be possible on or local to the site, as a HV cable passes overhead through the north of the site and a BT line runs down the A6 which borders the site to the east.

Engagement with utilities providers will be undertaken at an early stage to ensure network upgrades and costs are planned accordingly.

- Anglian Water (Water, Sewerage)
- Bedford Borough Council (Council)
- Cadent Gas Ltd (Gas)
- Environment Agency (Environmental)
- GTC (Telecom, Gas, Electric, Water)
- Openreach - [British Telecommunications] (Telecom)
- UK Power Networks (Electric)
- Utility Assets (Electric)
- C.A. Telecom UK - [Colt Technology Services] (Telecom)
- Central Bedfordshire Council (Council)
- CityFibre (Telecom)
- Instalcom - [CenturyLink, Global Crossing, Fibernet & Fiberspan] (Telecom)
- Last Mile (Gas, Electric)
- SKY Telecommunications Services (Telecom)
- Verizon (Telecom)
- Virgin Media (Telecom)
- Vodafone (Telecom)

Utility asset records included in Envirocheck Utilities Report

Surface and Foul Sewerage

Anglian Water (AW) is the local sewerage provider for the development site. Anglian Water's Sewer Asset records indicate that no sewers pass through or adjacent to the site.

The closest foul water connection point is 490m to the north, within Bedford Road. AW have a statutory duty to accept foul flows once the development gets planning approval, however the developer may have to lay the new sewer within the A6 or requisition it with Anglian Water.

The closest surface water sewer is 680m to the north. However, surface water sewers in the area discharge to local watercourses and ditches. As the site is adjacent to two watercourses which the existing site drains to, this will be emulated in the drainage strategy.

Potable Water

Anglian Water is the local potable water provider for the development site. Anglian Water's Potable Water Asset records indicate that the site is not served with Potable Water and that no water mains pass through or adjacent to the site. The closest Potable Water connection point is 490m north, within Bedford Road.

As Anglian Water have a statutory duty to serve the site, they will construct the necessary connections and upgrades, laying the new main in the A6 to connect to the existing network, subject to developer contributions. However, this is subject to Anglian Water's planned upgrades.

Gas

Cadent Gas are the local gas provider for the development site. Cadent Gas' asset records and GTC records indicate that there are no gas mains passing through or adjacent to the site.

The closest gas main is located 490m to the north in Bedford road. A new main will have to be laid in the A56 up to Bedford Road to serve the development.

Telecommunications

Asset Records from BT indicate that a cable runs down the length of the A6 which runs along the development site's eastern boundary.

It is assumed that this is a suitable connection point for the site, subject to liaison with BT.

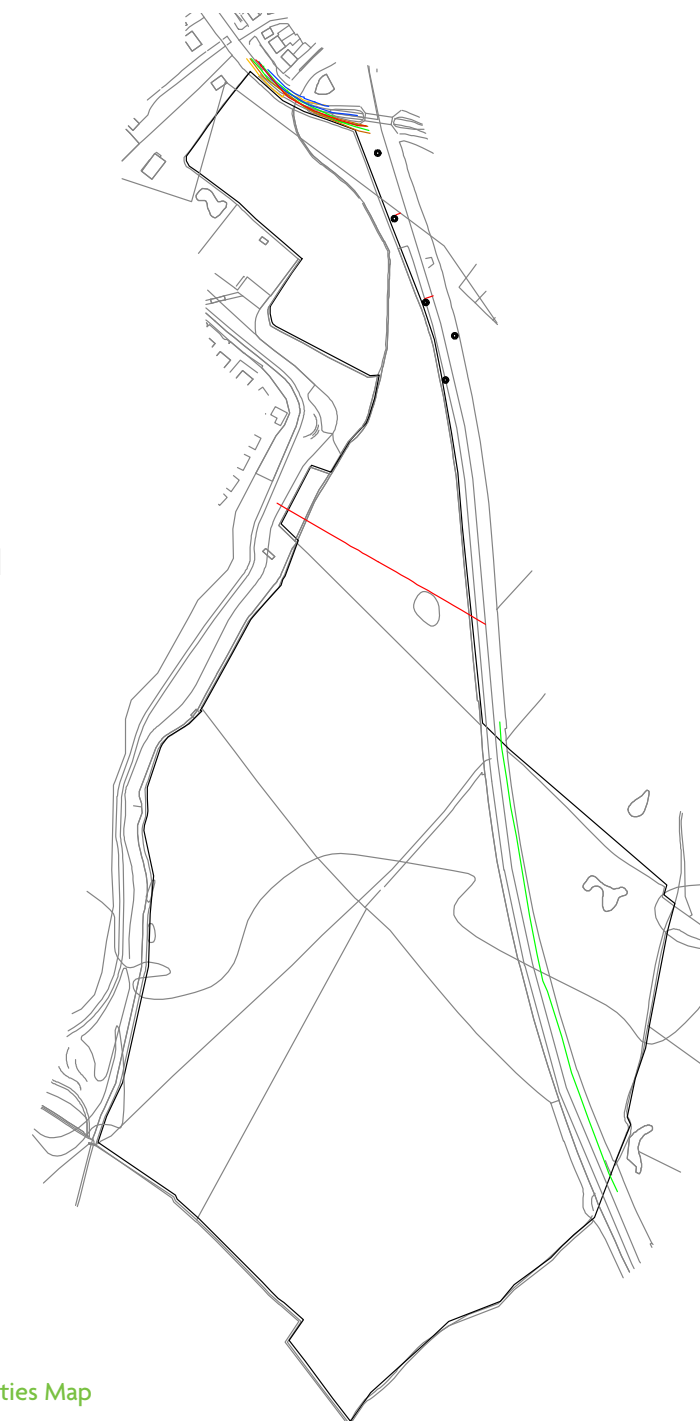
This is likely to be unaffected by the on-site works, but it will be affected by the new site access junction. Diversion / protection of the asset may be required.

Electricity

UKPN are the electricity providers for the local area. UKPN's asset records indicate an overhead powerline (HV cable) running east to west across the north of the site.

As the overhead cabling is within the anticipated built development area it will require diversion. UKPN must be contacted to discuss and confirm the details of the diversion.

A number of new substations are anticipated, connected to the HV network, subject to liaison with UKPN.



Utilities Map

- Anglian Water - Sewerage
- Anglian Water - Water
- Bedford Borough Council
- Cadent Gas Ltd
- Openreach - [British Telecommunications]
- UK Power Networks

3.8 Flood Risk & Drainage

Watercourses

The site is located on a hill which peaks within the southernmost field. Levels fall to the north-west and south-east towards the two watercourses.

South of the southern watercourse, levels fall north, towards the watercourse. An ordinary watercourse runs along the north-western boundary of the site flowing north-east where it joins a ditch which serves residential properties on Bedford Road. It then flows under the A6 via a 600mm diameter culvert. Another watercourse flows parallel to this watercourse before turning west and discharging into a holding pond.

A watercourse passes through the southern part of the site flowing in a north-easterly direction. It passes under the dirt road via 2x900mm diameter culverts and emerges briefly before passing under the A6 via a 1800mm diameter culvert. A 300mm dia. inlet discharges run-off from a highway ditch, into the watercourse prior to it flowing into the 1800mm dia. culvert.

An interception ditch runs along the south-western boundary of the site. This ditch intercepts overland flows from the southern fields outside of the site boundary and directs them into the northern and southern watercourses.

Flood Risk from Rivers & Sea

The Environment Agencies 'Flood Risk from Rivers and Sea' maps show that a small area adjacent to the northern boundary watercourse is identified as Flood Zone 2. The plans indicate that this watercourse was modelled in detail due to the neighbouring development to the north. The maps do not identify any flooding along the southern watercourse which indicates that no flood modelling has been produced for this stretch of watercourse.

Preliminary hydraulic modelling has been undertaken, concluding that the risk to the development from flooding of the southern watercourse is low and only a small area adjacent to the downstream boundary along the A6 shown to be within the modelled Flood Zone 2. No development is proposed in this area.

Surface Water Flood Risk

The Environment Agency and Bedford Borough Council's SFRA plans indicate surface water flooding along in high and medium risk events within the vicinity of the watercourses and low risk events showing a larger flood extent spanning into the site.

The hydraulic modelling demonstrates that this surface water flood risk does not result from the watercourses. Furthermore, a preliminary drainage system is proposed manage all surface water generated within the proposed development, thus managing the risk of surface water flooding and ponding from within the site.

Groundwater Flood Risk

The Bedford Borough Council's SFRA indicates that the site is identified as an area with a low susceptibility of Groundwater Flooding (less than 25%).

Drainage Strategy

The SuDS hierarchy states that the developments surface water run-off should first be considered for discharge via infiltration, if this is not feasible it should be discharged to a nearby watercourse or if there are no watercourses nearby, the public sewer.

Infiltration is not likely to be feasible as the site is underlain by a low permeability mudstone bedrock. This will be confirmed in due course by in-situ ground investigation and BRE 365 infiltration testing.

The proposed development surface water drainage will mimic the existing site drainage; run-off will be conveyed by a combination of a piped network and conveyance swales to the existing watercourses via detention basins sized to store surface water generated in the 1 in 100 year storm event plus a 40% allowance for climate change. Outflow into the watercourses will be restricted to the existing greenfield Qbar run-off rate.

The proposals integrate SuDS within the concept masterplan in line with best practice SuDS guidance to convey, store, and treat run-off prior to discharge from site, thereby preventing flooding or pollution to the receiving watercourses.

The closest public foul sewer is located 490m north of the development area, within Bedford Road. It is likely that a pump station will be needed to lift flows from the site up into a new sewer in the A6 which is higher than the site, from here a new sewer will run north to Bedford Road.

