

Wixams End A Vision for the land west of A6, Bedford



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5.0 Summary

Wixams End

This Vision document has been prepared on behalf of Wates Development 31 as a response to Bedford Borough Council (BBC) Call for Sites invitations for 32 proposals to sustainably support housing growth in Bedford through the 34 emerging BBC local plan. 36 38 The document seeks to set out the vision for delivery of a new sustainable 40 residential-led development complementing the Wixams development to 42 the south of Bedford and building on the framework for delivery of the 43 new settlement. 44 Bounded by the A6 to the east and Wixams to the north and west, the 46 proposals will provide a logical and complimentary extension to the existing 48 settlement. The proposals maximise the opportunities offered by the site's 50 sustainable location. 52 54 Wixams is designated as a Key Service Centre in the adopted Local Plan. 56 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 58 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.



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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 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)
- minute cycle)
- Potential Rail Station 3,450m (13 minute cycle)

• Strategic Employment Area – 2,350m (<25 minute walk, 10





2.0 Land Use & Delivery Timetable

2.1 Land Uses Table

Residential development will be focused to the northern half of the site, adjacent to Wixams Village 2. A significant proportion of this part of the site is designated as public open space which will provide visual and acoustic buffers as well as sustainable urban drainage systems. The developable area of the site is 11.15 ha, with densities across the site of 25-50 dph there is the opportunity to provide 429 homes.

The remaining land under legal control, to the south of the 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 buildings and provision of a Community Centre, Farm Shop or Visitor Information Point.

Northern Area

Residential (units)		Community Infrastructure	Open Space	
Private units	Affordable units		Types	
429	129	Contributions to facilities in Wixams and opportunity for	Green way created along existing public right of way with village	
		live/work units within the development. New play areas and sports facilities to be provided.	green at centre, Circular walking routes, play trails, LEAP, NEAP, woodland buffer zones.	

Southern Area

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



Primary residential area (Northern Area)

Remaining land under legal control (Southern Area) Wixams End Bedford

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's aspiration is for the development of the main new settlement to continue and for the range of key services there to expand. Significantly, a new railway station at Wixams is now scheduled for completion in 2024.

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.

Early Local Plan Review

The Local Plan 2030 Inspector's Final Report (20 December 2019) identified a requirement for the Plan to be reviewed within three years of its adoption, which occurred on 15 January 2022. The timescale for review is shorter than the five-year period which usually applies, in accordance with National Planning Policy Framework (NPPF) paragraph 33.

The Inspector found it necessary for the Local Plan 2030 to be subject to an early review, partly to address potential spatial planning implications arising from the Oxford to Cambridge Arc. Despite some recent ambiguity from the Government, particularly concerning the previously envisaged 'Oxford-Cambridge Arc Spatial Framework', the project nonetheless remains an important area for crossboundary and regional cooperation for Bedford Borough Council, and a range of other partners.

Crucially, there remains a commitment to deliver new strategic transport infrastructure. This includes the East – West Rail Corridor, which will connect communities between Oxford and Cambridge, including Bedford. New rail routes and stations are envisaged within the Borough and these will situate the area within a large and dynamic regional economy. These investments present 'once in a generation' opportunities to drive regeneration within the existing urban area and to grow rail-centric communities elsewhere within the Borough. This is reflected in the rail-focused strategy described in Draft Local Plan 2040.

In addition to planning for the Oxford to Cambridge Arc, the Local Plan 2030 Inspector also considered an early review to be necessary because of concerns regarding the forecast housing trajectory. In particular, the Inspector felt there was not sufficient certainty that the housing apportionments to various Neighbourhood Plans Areas would be delivered, as the production of Neighbourhood Plans was not something within Bedford Borough Council's direct control.

Consequently, at paragraph 123 of the Report, the Inspector stated;

"The review will need to consider the requirement for any additional housing site allocations in the light of evidence on housing need and realistic supply at that time." In this respect, it is notable that the Draft Local Plan 2040 makes provision from some 27,100 new dwellings, through a broad range of new allocations. This is to address a Local Housing Need figure of 1,355 dwelling per annum (dpa), which is significantly higher than the recently adopted Local Plan 2030 requirement of 970 dpa. This uplift reflects the application of the NPPF 2021, which requires all new plans to apply the Standard Method for the purposes of identifying housing need, unless exceptional circumstances are demonstrated. The early Local Plan Review is therefore needed to address this change in the objectively assessed need for housing.

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 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, 2021). 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. At NPPF paragraph 73 (limbs a, b and c) it is stated that planning authorities should:

a. "consider the opportunities presented by existing or planned investment in infrastructure, the area's economic potential and the scope for net environmental gains;

b. ensure that their size and location will support a sustainable community, with sufficient access to services and employment opportunities within the development itself (without expecting an unrealistic level of self-containment), or in larger towns to which there is good access;

c. set clear expectations for the quality of the places to be created and how this can be maintained (such as by following Garden City principles); and ensure that appropriate tools such as masterplans and design guides or codes are used to secure a variety of well-designed and beautiful homes to meet the needs of different groups in the community;" At the heart of the NPPF is a presumption in favour of sustainable development. Paragraph 11 sets out that in terms of plan-making "all plans should promote a sustainable pattern of development that seeks to: meet the development needs of their area; align growth and infrastructure; improve the environment; mitigate climate change (including by making effective use of land in urban areas) and adapt to its effects". The Framework sets out 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 at present. However,
 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 36S, 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 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. Subsequently, a Draft Neighbourhood Plan has been prepared and this was recently submitted for independent examination.

The Draft Neighbourhood Plan sets out a range of proposed policies that (if adopted) future development at Wixams End shall need to have regard to. A key proposed policy is RC2 'Wilstead-Wixams Strategic Gap'. Whilst a future housing development at Wixams End would fall within the designated gap, the Local Plan 2040 is able to allocate land at this location, in accordance with its strategic policies. Nonetheless, future development at Wixams End must still respond positively to this policy. The proposals should avoid, or otherwise minimise, adverse impacts on the overall rural character of the area of land that will remain undeveloped and also maintain the separate identities of the settlements. As detailed below, this is to be achieved through a landscapeland strategy, that enhances the remaining gap, and preserves it in perpetuity.

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, as detailed on the mapping within this document.

As indicated, 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 adopted 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

3.1 Planning (Continued)

London stations, once completed in 2024.

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. Key service centres provide a strong 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.

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.

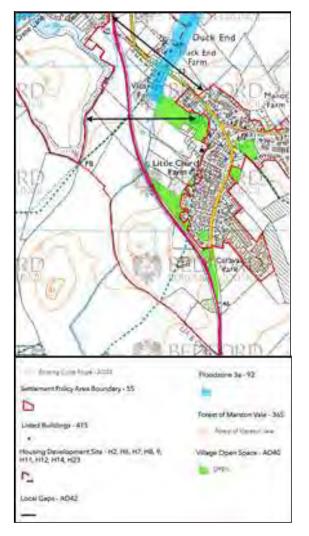
The proposals will include the following key benefits:

- 429 new homes including 129 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.



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

• 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.

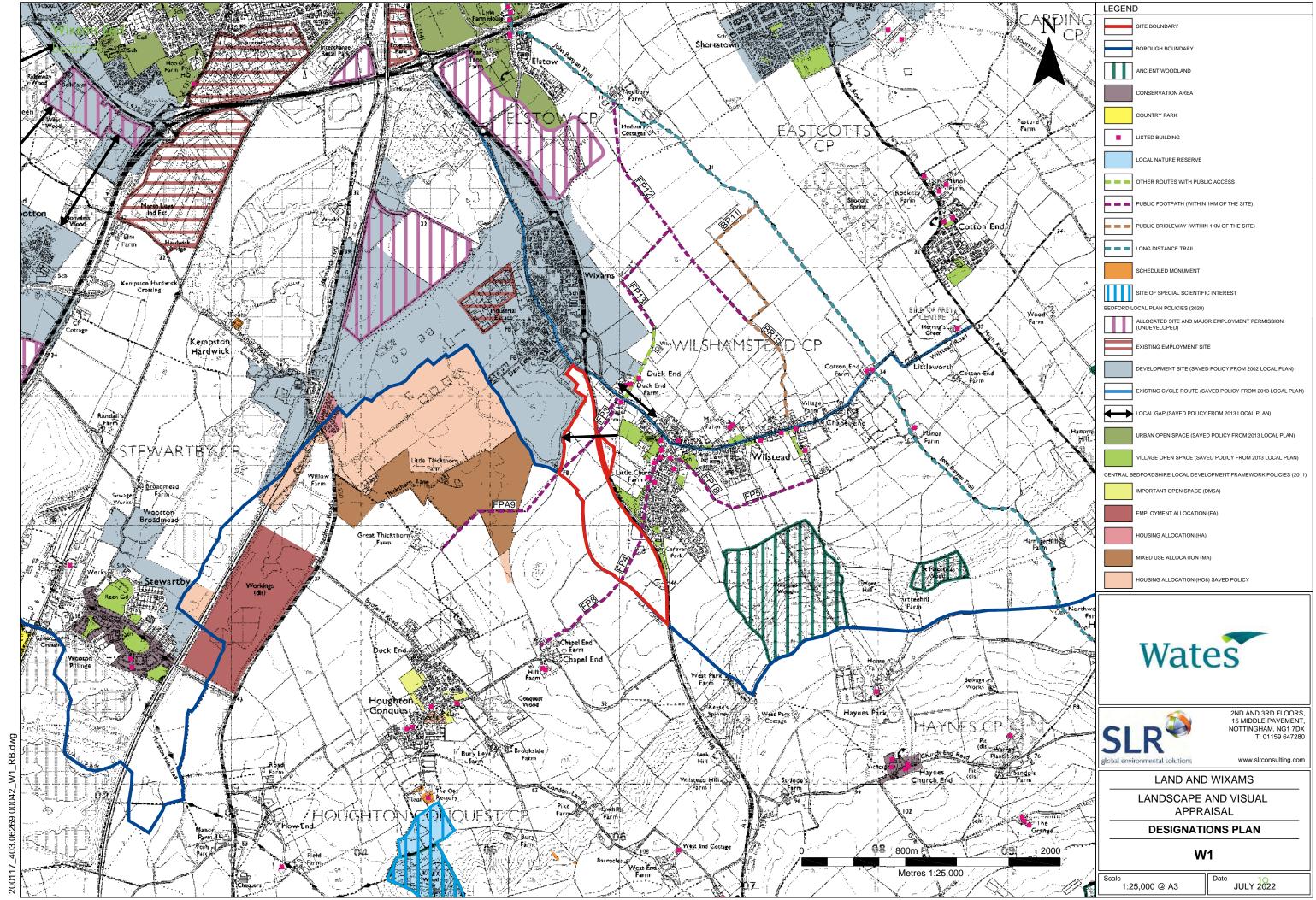
The visual assessment identifies that development of the site would result in localised major and moderate/major effects for the closest residents, walkers along the footpath crossing the site (FP3 connecting to FP9) and the new footpath on the edge of new mixed-use development to the west.











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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.

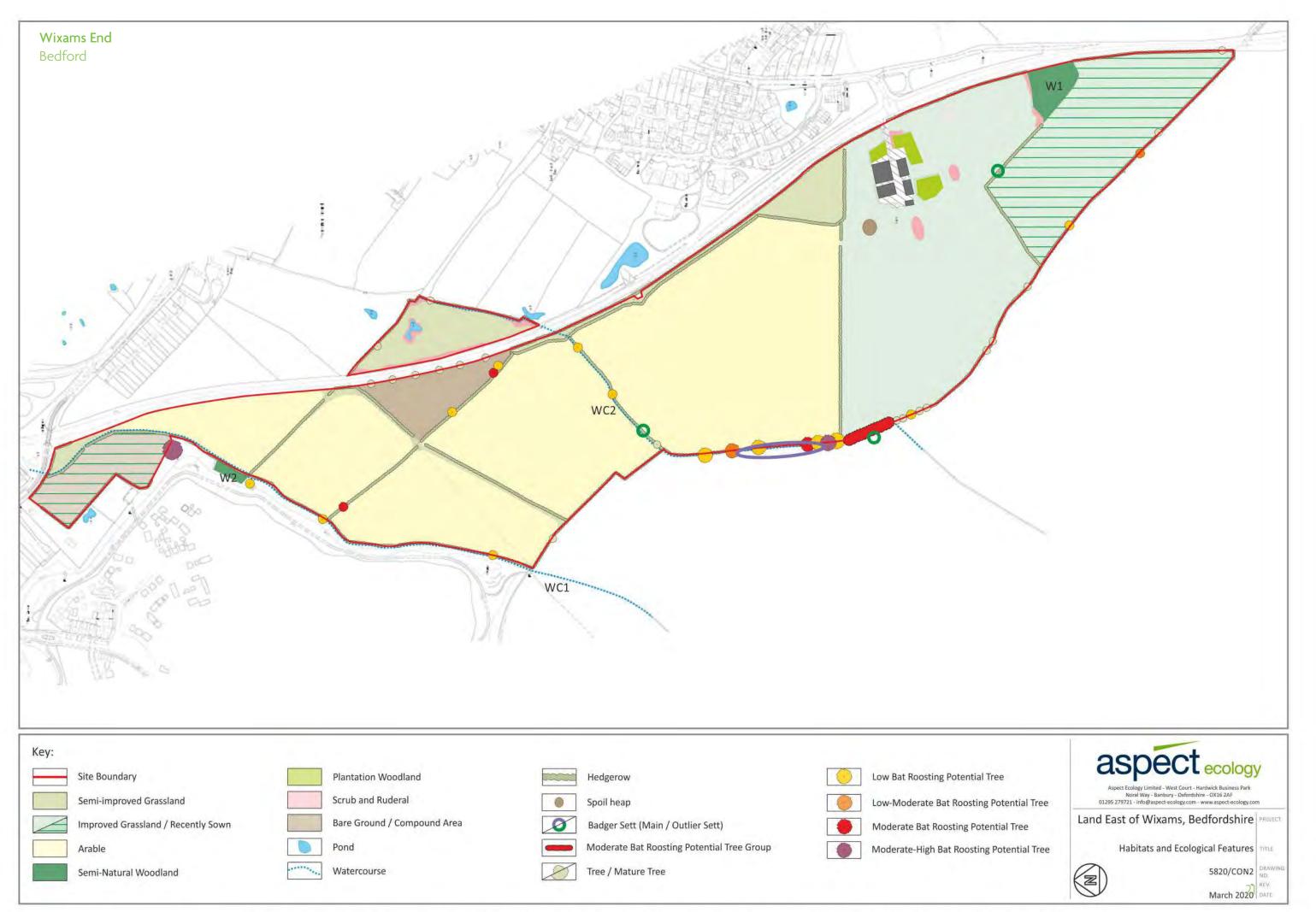
Provision of open space and green corridors at the southern extent of the site will maintain ecological connectivity and provide areas for new habitat creation, whilst mitigation measures will be implemented to safeguard ecology during construction works.

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.

To provide an assessment of the level of biodiversity net gain that can likely be achieved under the proposed development, calculations have been undertaken using the Defra Biodiversity Metric 3.1. Based on the northern part of the site only, which will form the focus for residential development, and based on the outline habitat proposals indicated under the illustrative masterplan, it is considered that biodiversity net gain in excess of 30% can be achieved. Further substantial gain could be delivered within the additional site area to the south.

The site is also well placed to contribute to a new green infrastructure link between existing Green Infrastructure Network Opportunity Zones (GINOZ), with Bedford to Milton Keynes – Marston Vale GINOZ to the north and Greensand Ridge Fringes GINOZ to the south. In particular, creation of new wetland, woodland and grassland habitats would correspond with the identified green infrastructure opportunities for these adjoining zones.



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 •T1	Tree Number	Site Boundary	Canopy extent of tree: Category U	CLIENT: Wates Develo
G1	Group Number	BS5837 Tree Categories		Wixams trees
H1	Hedgerow Number	Canopy extent of tree: Category A		TITLE: Tree Survey C
W1	Woodland Number	Canopy extent of tree: Category B		SCALE AT A3: 1:10.000
()	Root Protection Area	Canopy extent of tree:		,
]	Category C		731.06/13

Wixams End Bedford

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 nondesignated archaeological assets:

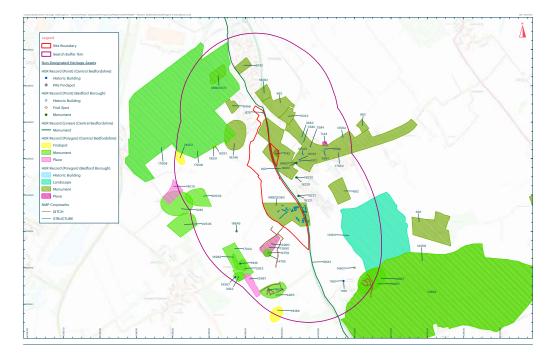
- The location of a possible medieval/post-medieval moated farmstead in the north-east corner of the study site. Further assessment will be required to clarify the character and significance of this asset. It is recommended that this takes the form of geophysical survey in the first instance, targeted 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.

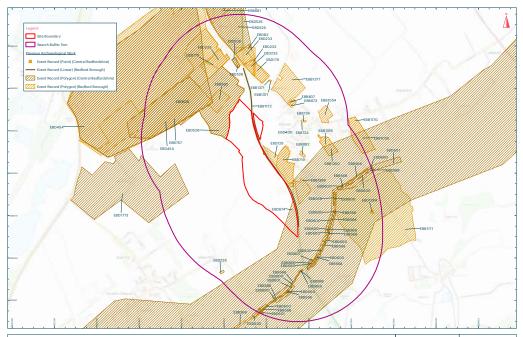
There are currently no plans to develop the southern part of the study site. As such there will be no effect to potential archaeological evidence associated with the WWII military camp in the south of the study site (BHER MBB22080).

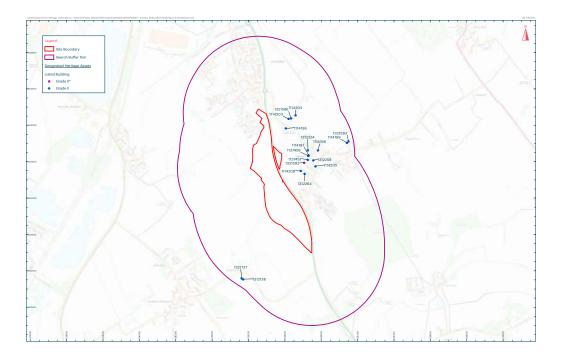
There are no designated heritage assets within or immediately adjacent to the study site. The assessment has not identified any designated assets which will be negatively impacted by the proposed development.

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iew DATE: March 2020 andscape Architecture hdo Masterplanning Ecology







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

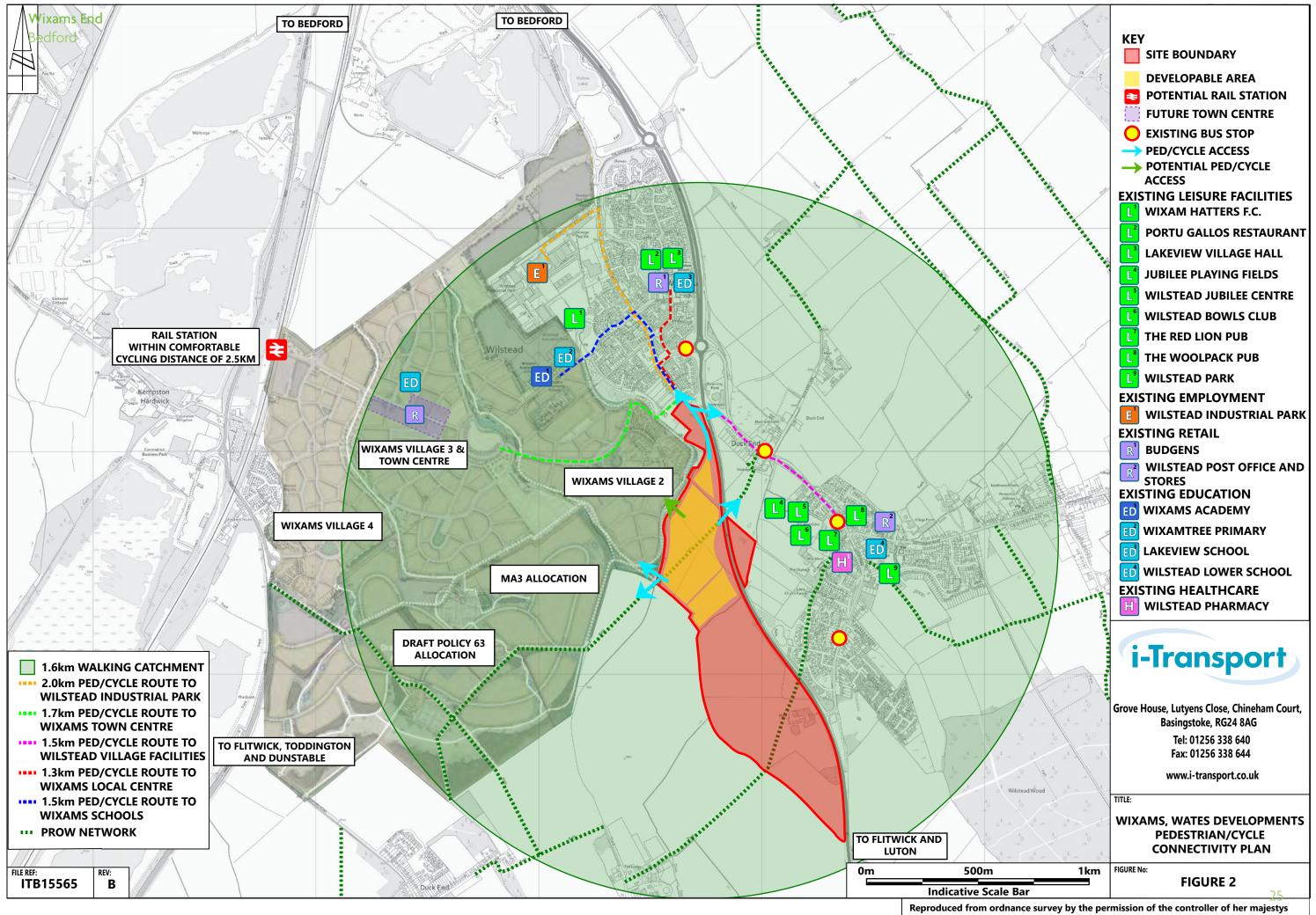
For non-motorised users, access will be delivered to the PROW network and to Bedford Road where there are opportunities to deliver either a dedicated shared footway / cycleway connection and / or a Bus connection on to Bedford Road, depending upon the ultimate Sustainable Transport Strategy and engagement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

Traffic Impact

A development of circa 429 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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3.7 Ground Conditions & Utilities

Geology and Hydrology

In accordance with BGS' GeoIndex, 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 aguifers 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 assest 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 This is likely to be unaffected by the on-site works, but it will be affected 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, be required. 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 across the north of the site. 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 As the overhead cabling is within the anticipated built development area 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.

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.

to liaison with BT.

Electricity

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

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.

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

It is assumed that this is a suitable connection point for the site, subject

by the new site access junction. Diversion / protection of the asset may



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 southeast 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 Surface Water Flood Risk 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 SFRA plans indicate surface water flooding along in high and into the watercourses will be restricted in accordance with 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.

The Environment Agency and Bedford Borough Council's medium risk events within the vicinity of the watercourses and the preferred approach in BCC's Supplementary Planning low risk events showing a larger flood extent spanning into the Document for Sustainable Drainage Systems. 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.

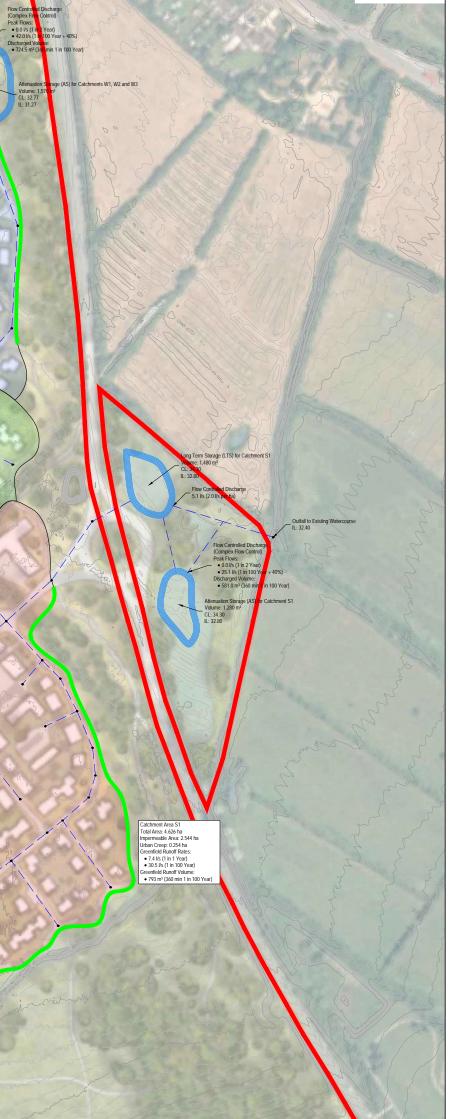
The proposed development surface water drainage will mimic the existing site drainage; run-off will be conveyed by a combination of a piped network and conveyance swales to the existing watercourses via detention basins sized to store surface water generated in the 1 in 100 year storm event plus a 40%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

The proposals integrate SuDS within the concept masterplan in line with best practice SuDS guidance to convey, store, andtreat 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 anew sewer will run north to Bedford Road.

Wixams End Bedford





KEY







4.0 Design

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

4.1 The Proposal

A distinctive local identity as a new community, including at its heart an attractive and functioning centre and public realm.

The site can be considered as an additional village of the Wixams New Town. The proposal respond to the Village 2 Design Code and has been inspired by the Garden Community Principles, which are:

- A range of tenures and house types that provides for all stages of life and affordability in accordance with councils most recent statement of need.
- Well-designed homes with gardens, combining the best of town and country to create healthy communities, and including opportunities to grow food.
- Development that enhances the natural environment, providing a comprehensive green infrastructure network and net biodiversity gains.
- Construction methodologies that use zerocarbon and energy positive technology to ensure climate resilience.
- Planning contributions to benefit of the community, including contributions to schools and community buildings and infrastructure.
- Local recreation facilities enabling walkable, vibrant, sociable neighbourhoods.
- Integrated and accessible transport systems, with walking, cycling and public transport designed to be the most attractive forms of local transport.

A new eco-friendly community, with distinctive, well built homes, adaptable design, using modern energy efficient sustainable construction methods and technology.

NEW HOA



A wide variety of different tenures and house types for sale and to rent for individuals and families. Including affordable, social rented, shared ownership and extra care.

Provision of expansive accessible public open space and green infrastructure including, circular walking routes, and a village green way. Potential for a linear woodland country park to extend the Forest of Marston Vale.

GREEN SC



New areas of play including trim-trails and playgrounds for local children. Contributions for schools and community buildings in Wixams New Town. Opportunity for live/ work units to enable flexible working.

A sustainable transport network with enhanced public rights of way, extensive cycle paths and the opportunity for new bus routes.

4.2 Constraints & opportunities

Wates Developments has carried out initial review of the site in order to be able to understand its existing characteristics.

The plans on the following page identify the key constraints and opportunities based on the assessment work carried out to date. This includes planning, landscape and heritage as well as topographical data. The site is well located adjacent to the A6 with excellent access into Bedford centre. The site offers a largely gentle sloping land suitable for development.

Key Constraints



Local gap policy between Wixams and Wilstead



Steep contoured areas of site to south east



Key Opportunities

Town with a new sustainable community

Potential to expand Wixams New

Close to the existing amenities

of Wixams / Bedford

Excellent sustainable connections to Wixams and Beford



Accessible site allowing good active frontages onto verdant green spaces



Potential to deliver 30% tree

planting to meet the 'Forest of Marston Vale' policy (36S)

Existing drainage / river features on site

(((•))) Proximity to A6 and Wilstead requires consideration



Wixams End Bedford



Constraints Map



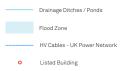
----- Proposed Site Boundary

Remaining land under legal control

Lower Density Development Area Higher Density Development Are

Road Noise





4.3 Density Analysis

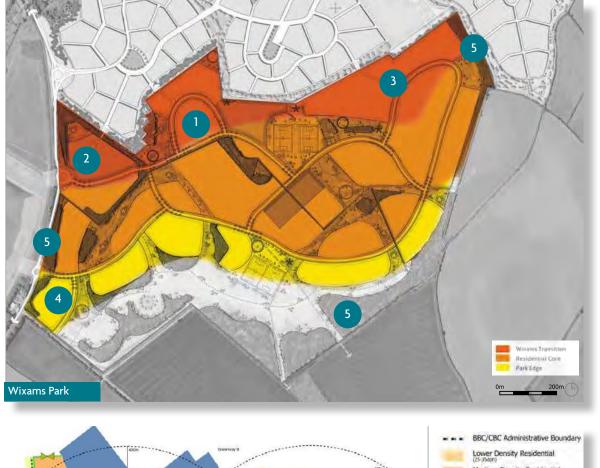
To inform and develop the density strategy for the site we have studied nearby Wixams Villages 1 and 2 and Wixams Park.

We have identified five key features across the density strategies of the developments:

1 Highest density village centre

- 2 Higher density at new infrastructure nodes and along primary access routes
- 3 High/medium-high densities in transition areas between developments
- 4 Lower densities to edges of defined strategic gaps
- 5 Landscape buffers to enhance or as alternative to lower density areas and gaps







Wixams End Bedford





40-50 dph Village Centre (76 dwellings)





(136 dwellings)



30-40 dph Streets

(140 dwellings)



25-35 dph Rural Edge (77 dwellings)

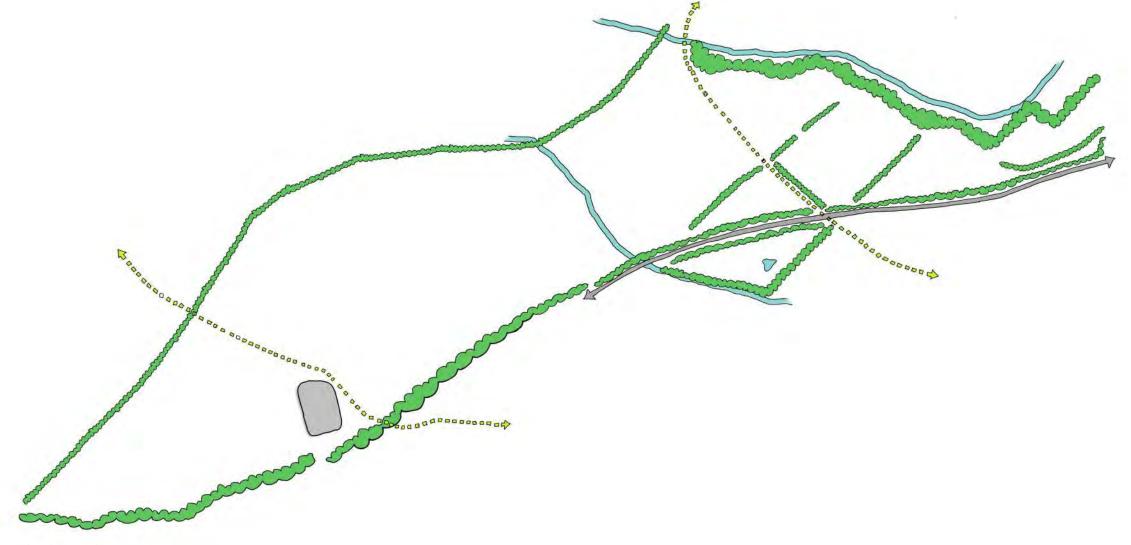


4.4 Concept Diagrams

To inform the promotion, we have carried out initial concept designs for the site.

The concept identifies existing site landscape features, and seeks to use these to inform a new landscape led cluster settlement, with the new heart centred around a new central greenway along the route of the existing public right of way.

A new woodland belt along the eastern edge will act as a buffer to the A6 and prevent intervisibility between Wixams and Wilstead. The country park areas along the buffer will provide recreactional opportunities and bio-diversity corridors.





Wixams End Bedford

Landscape enhancements to boundaries and provision of access and route into site.



4.5 Concept Plan

KEY



roposed woodland/ landsc

Existing hedgerows/landsc



Public footpath



Drainage ditch



Viewing point at natural high point

xisting farm buildings/ potential country park visitor centre location





4.6 Illustrative Masterplan

1 New roundabout access from A6

- 2 New village centre
- Green way' created along existing PRoW
- 4 Housing clusters with shared surfaces
- 5 New public open space including trim trail
- 6 New footpath/cycle way to Bedford Road
- 50m public open space buffer with green
 enhancements / tree planting to enhance
 Forest of Marston Vale
- 8 New SuDS
- 9 Potential location for off-site biodiversity improvement area if required
- Potential for additional off-site woodland planting to enhance Forest of Marston Vale
- 1 Existing agricultural buildings
- Indicative Proposed Site Boundary (check)



4.7 Conceptual Aerial View

Key for plan

- New roundabout access from A20
- New village green addressing enhanced river features
- 'Green way' created along existing PRoW
- Housing clusters with shared surfaces
- 5 New public open spaces
- 6 Boundary green enhancements / tree planting
- 7 New footpath/cycle way to Wixams / Bedford Road
- 8 Wixams Village 1
- 9 Wixams Village 2





Electric car charging points will be provided across the site to minimise relience on petrol or diesel vehicles.



Wixams End will be characterised by attractive tree-lined streets and woodland edges, contributing to the Forest of Marston Vale policy.

4.8 Response to Climate Emergency



Use of zero-carbon construction methods and energy positive technology to ensure climate resilience.



Public Rights of Way will be enhanced to improve links between Wixams & Wilstead. New paths and shared surface streets will encourage active travel in Wixam End.



Sustainable Urban Drainage Systems, such as retention ponds and swales, have informed the site layout.



Substantial areas for new habitat creation will be provided and wildlife corridors for connectivity across the site and beyond will be maintained and enhanced.

4.9 Travel Strategy

Site Access Diagram

- Primary road
- Secondary road
- 💩 💿 🍨 Shared surface
- ວ່ວ ວ່ Public Right of Way (Wilstead 3)
- Existing Bus Route (Luton to Bedford 81)



Cycle Path AD 29



- A Main site access
- Pedestrian, Cyclist and Emergency Services Access



4.10 Local Character

The ambition for the Wixams End is to deliver contextually recognisable form making and materiality with considered contemporary details.

A site specific Design Code will be developed to support the outline planning application coming forward. This will prescribe a language of simple pitched roof forms and a modern interpretation of the traditional Bedfordshire material palette, including:

- 1. Brown/Red handmade clay tiles
- 2. Dogtooth brick cornice detailing
- 3. Weatherboarding
- 4. Painted brick
- 5. White gault brick rat trap bond
- 6. Red brick flemish bond.





















Wixams End Bedford













The local villages provide a contextual language of handmade clay tile roofs, feature gables and emphasised entrances. The use of brick is common given the area's history as a centre for brick production.

4.11 Village Centre Character Area

The green way through Wixams End, following flats have the potential to be adaptable live/ the existing Public Right of Way, will form the work units in response to increased working heart of the village. This central area will be medium-density and have a strong informal character with variation in building line and setback with varied spacing between buildings the potential to act as a walking and cycling and mix of building typologies. Ground floor route, connecting Wixams and Wilstead.

from home and expectations of flexible working since Covid-19. The green way will include play areas for local children and has 10.



Lakeview Village Centre, Wixams





Masterplan Location

4.12 Access Street Character Area

The secondary access streets will be characterised by verge and tree planting with integrated on street parking. This character area will be medium density and homes will typically be two-storey with some 2.5-storey feature buildings to provide variation to

the street scene. Road material changes at junctions and crossings will assist in traffic calming, ensuring the streets are safe for cyclists and pedestrians.



Trumpington Meadows, Cambridge





Masterplan Location

4.13 Mews Character Area

Mews Streets are shared surface streets and
culs-de-sac that connect directly to the
access streets. Homes will provide natural
surveillance and activity and their layout
should create a sense of enclosure to ensure
a pedestrian-friendly space. Street trees and

planting will play an important role in creating an attractive and high quality environment within Mews and reducing the prominence of the car.





Masterplan Location

Lakeview, Wixams

Wixams End Bedford



Concept Sketch

4.14 Rural Edge Character Area

The rural edges to the north and south of Wixams End will be characterised by their informality, with an organic structure, varied building line and strong landscape structure. These lanes will be shared surface serving

a limited number of dwellings. Footpaths link the lanes and provide connection to the landscape beyond.



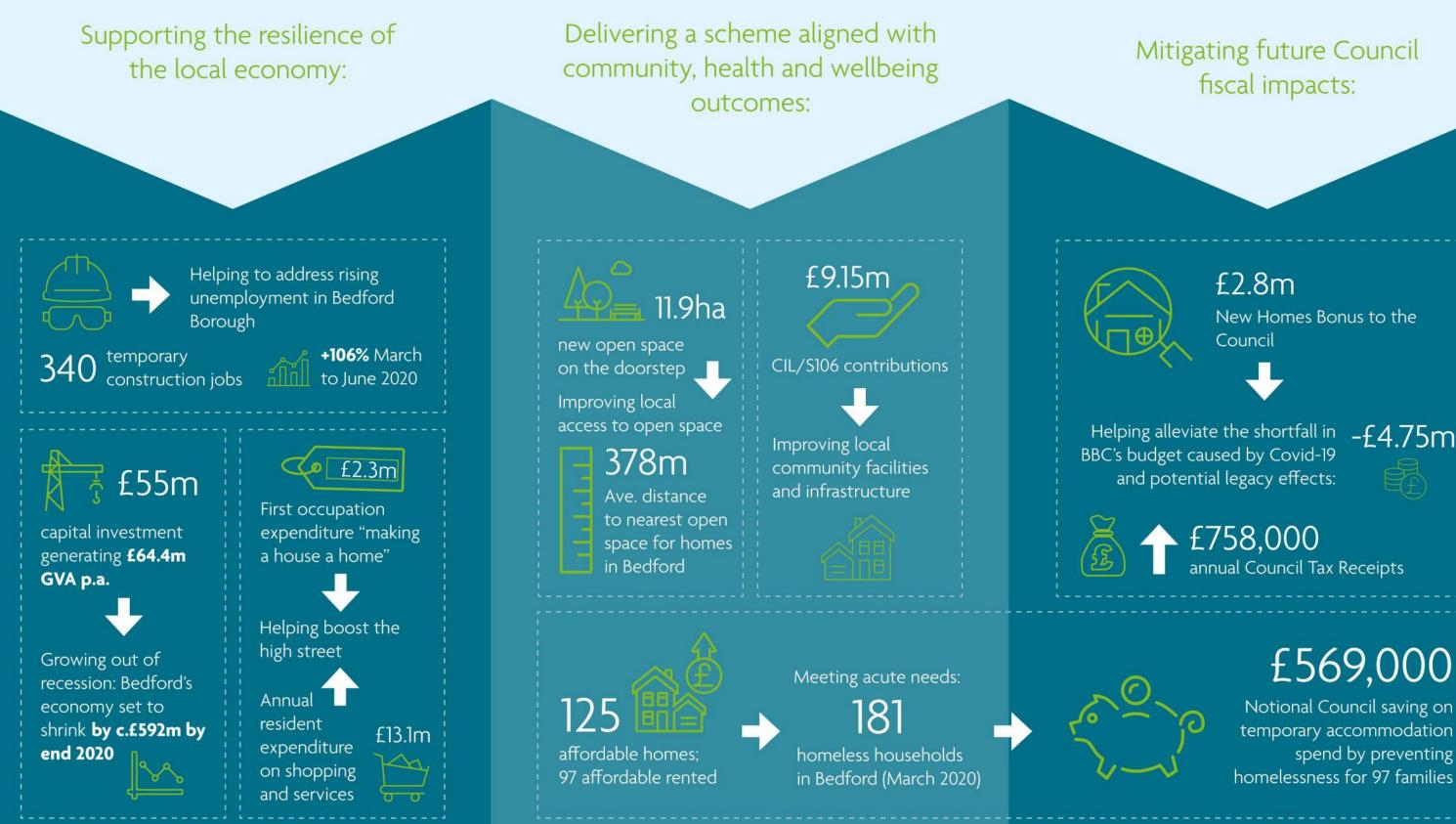
Cane Hill, Coulsdon



Masterplan Location



Summary





Mitigating future Council fiscal impacts:

> £2.8m New Homes Bonus to the Council

Helping alleviate the shortfall in -£4.75mBBC's budget caused by Covid-19 and potential legacy effects:



1758,000 annual Council Tax Receipts

£569,000

Notional Council saving on temporary accommodation spend by preventing homelessness for 97 families

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Wates



Wixams End Bedford



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