



WEST OF TWERTON
DEVELOPMENT CONCEPT OPTIONS REPORT

APRIL 2013

ARUP

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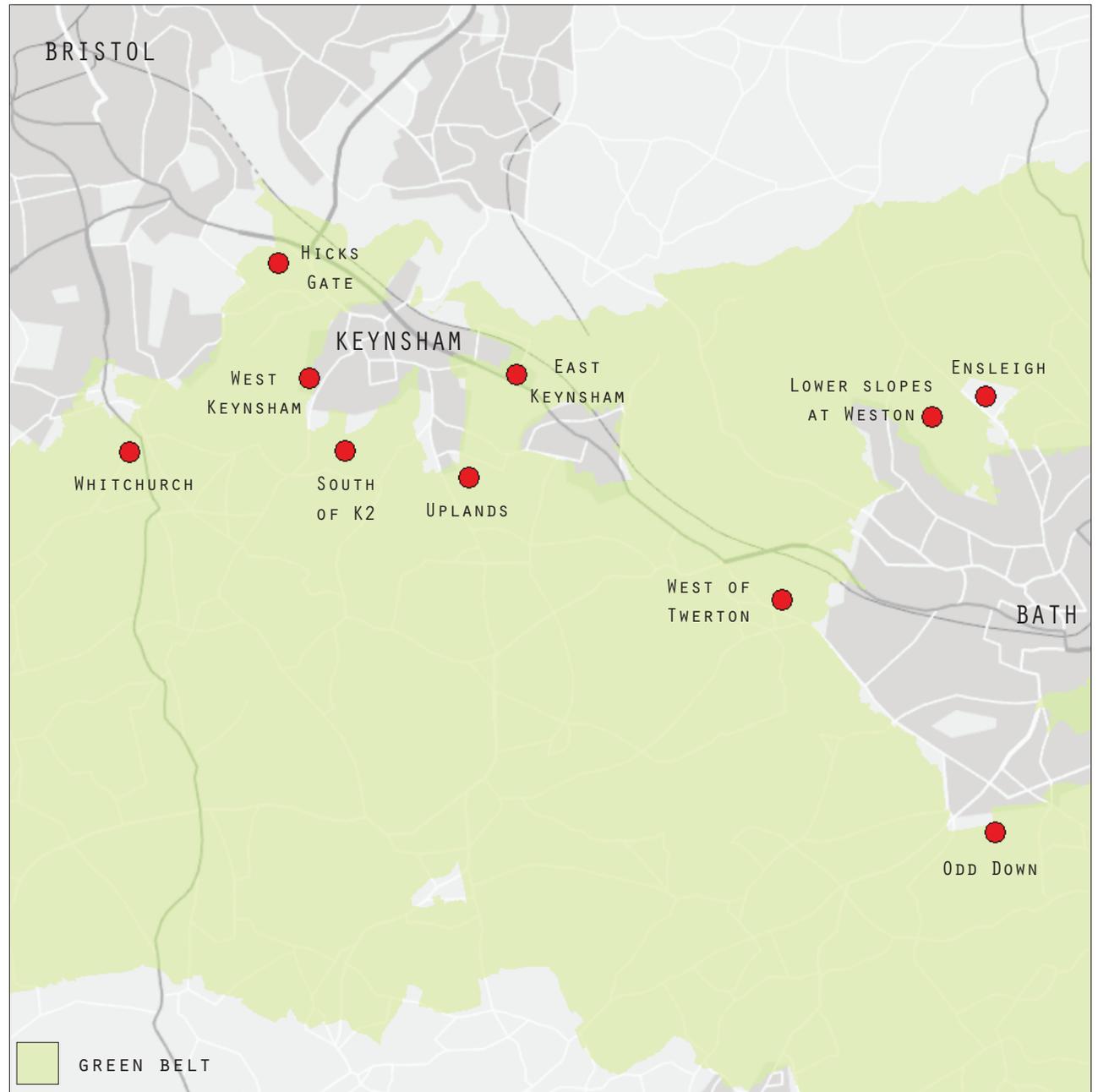
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1 ■ INTRODUCTION

1.1 OVERVIEW

Bath and North East Somerset Council ('B&NES') Planning Service appointed Ove Arup and Partners Limited ('Arup') to investigate development concept options for ten locations to inform the consideration of additional housing led development. The locations are largely adjacent to the principal settlements within and associated with Bath and North East Somerset. Four locations are on the edge of Bath, two on the south edge of Bristol and four on the edge of Keynsham.

These Concept Option Reports are not the work of the Council and are not planning policy. They are assessments used to help the consideration of these locations for development. By publishing these reports the Council is not agreeing to the development capacities identified in the Concept Options presented. As such the Reports have no planning status. The planning policy relating to any locations taken forward will need to be formulated in the first instance through the Core Strategy and sites will then be allocated with detailed site requirements in the Placemaking Plan. Work on the Placemaking Plan will be done in conjunction with local community involvement and supported by further detailed site work e.g. relating to environmental impacts.



1.2 DEVELOPMENT CONCEPT OPTIONS

The Development Concept Options work will build upon the work already undertaken by the Council within its Core Strategy preparation process. The locations, selected by the Council, have previously been assessed either through the Strategic Housing Land Availability Assessment (SHLAA) and/or the Environmental Capacity Study.

The locations have all been previously considered unsuitable for development due to strategic policy reasons, i.e. the draft Core Strategy did not propose any changes to the general extent of the Green Belt, in the form of either extensions or deletions.

The Development Concept Options work is to contribute to the identification of additional development capacity within the review of the Council's Core Strategy.

The work will identify: viable potential development capacity, illustrate and test potential outline spatial scenarios; and place-making principles.

As part of this report no site selection recommendations will be made by the design team in its reporting. This exercise will be undertaken by the Council Members and Officers post completion of the technical analysis.

1.3 FIT WITH THE WIDER CORE STRATEGY REVIEW

As part of the wider Core Strategy Review, the Council is also currently developing, reviewing and updating a number of related relevant technical evidence documents. For this report, the following evidence base documents are particularly relevant:

- Green Belt Review: A strategic review of the entire Green Belt in B&NES to assess the importance of different areas of land in serving the purposes of the Green Belt, in order to inform consideration of whether land should be removed from the Green Belt to accommodate development in a sustainable location.
- Transport Assessment: To examine the transport impact of development at the ten locations; identification of infrastructure 'trigger points'; and consideration of the cumulative impact of development across the related locations and the District.

The analysis of these evidence base documents together with the existing work carried out by the Council has informed the production of this report.

The publication of this study is not an endorsement by the Council of a particular strategy for this location; rather it is to test different development scenarios in order to assess the relative capacity and development impacts.

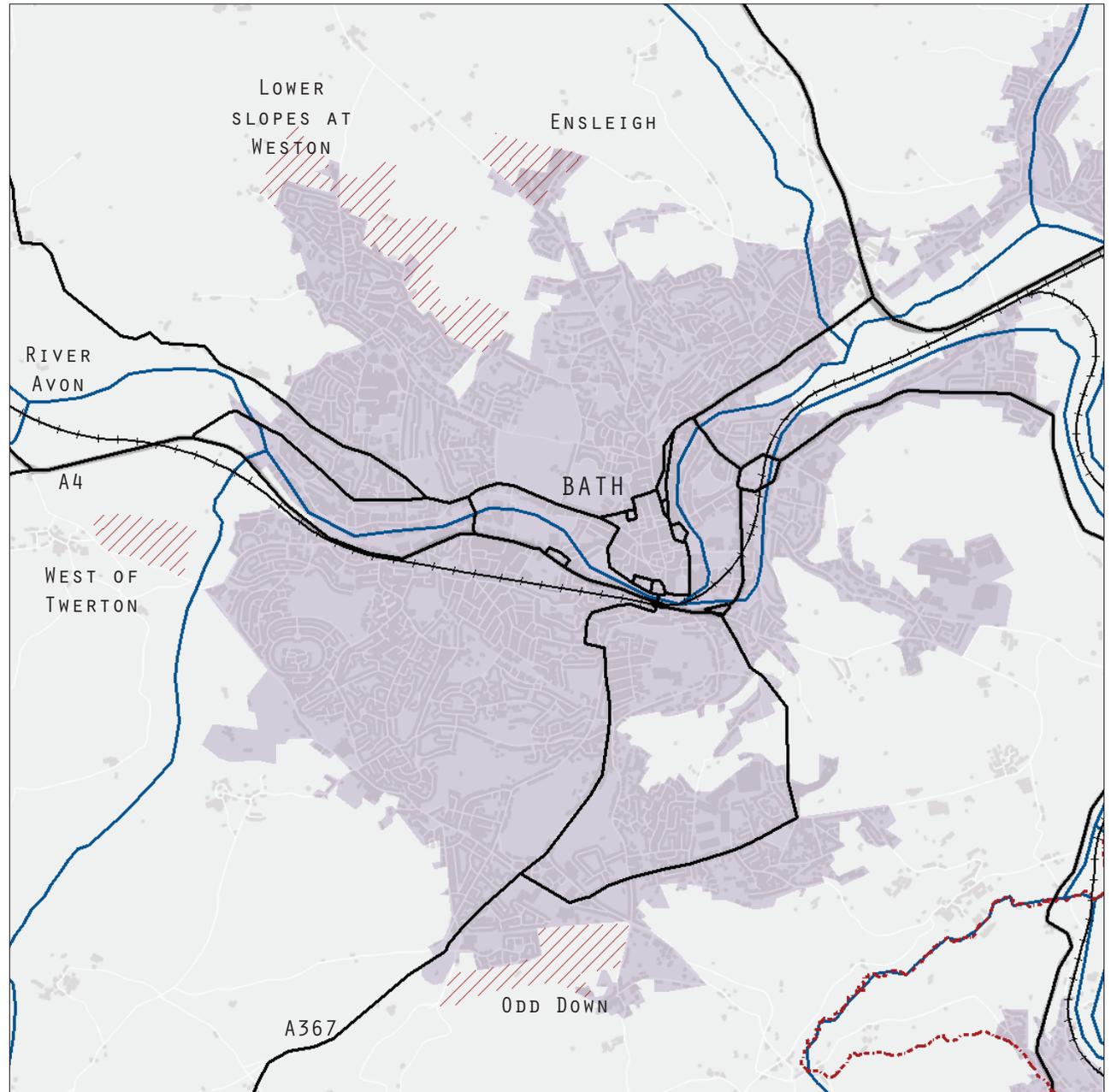
1.4 BATH CONTEXT

The Council selected four locations adjacent or near to the existing settlement boundary of Bath:

- Land at MoD Ensleigh
- Lower Slopes at Weston
- Land adjoining Odd Down
- Land West of Twerton

The study areas vary in character, size and location but all relate to the current edge of settlement relationship with the landscape; the definition of the Bath character; and the confinement of the city within the landscape.

The land around Bath contributes positively to the setting of the city and the World Heritage Site.



WEST OF TWERTON STUDY AREA LOCATION

1.5 WEST OF TWERTON

This report concerns the West of Twerton study area, Bath.

It should be noted that the extent of the study area has been reduced from the West of Twerton site as considered in the Core Strategy options (SWB1). This reduction is in direct response to English Heritage's comments (Core Document CD8/01) where they stated that:

“Unless development at the Twerton site is contained to the south side and does not rise above the ridgeline there would be an unacceptable impact on the setting of the World Heritage Site.”



1.6 CONTEXT

AREA	21 hectares
EVALUATION HISTORY	<p>The Council's previous assessment of this study area has provided the context for this Report. The relevant evaluation and assessment documents are:</p> <ul style="list-style-type: none">- Urban Extension Environmental Capacity Appraisal: Revision A (October 2006)- New neighbourhood in an urban extension to South/South West Bath – Information Paper (October 2009)- Strategic Housing Land Availability Assessment: Report of Findings (May 2011): Appendix 1b: Land at South/South West Bath

2 . SITE ANALYSIS

2.1 LAND USE

This is a greenfield site with the land mostly in agricultural use.

The study area is bound by Seven Acre Wood, agricultural fields and beyond by the A4 Bristol Road to the north.

The steeply sided Newton Brook Valley runs along the east, gradually widening out to join the Avon River Valley. Beyond the river valley to the east is the existing settlement and local services at Twerton.

The study area is bound to the south by Pennyquick Lane which connects this area to the A4 and Whiteway Road and Twerton. In close proximity to the west, across Pennyquick Lane, is the village of Newton St Loe.

There is a public right of way (PROW) that runs across the area connecting Newton Brook Valley with the village and the network of PROWs that link the village to the wider countryside.

2.2 TOPOGRAPHY

The study area is located on slopes facing towards the city. Part of the settlement of Twerton has spilled out beyond the 'bowl' of the city.

The landform here, where the Avon corridor emerges beyond the settlement boundary, encloses the western edge of the city less. As well as this the hills to the west of Twerton and surrounding the villages of Newton St Loe and Corston are lower generally than most of the landscape around the rest of the city.

2.3 DESIGNATIONS

As illustrated in the diagrams (overleaf) there are a number of environmental, heritage and landscape designations both within and in close proximity to the boundary:

- Newton St Loe Conservation Area
- Newton Park Historic Park and Garden
- Bath World Heritage Site
- Public right of way
- Green Belt
- Near to Kelston Conservation Area
- Near to Kelston Park Registered Park and Garden (Grade II*; located across the River Avon to the north on prominent hillside)
- Near to Carrs Wood and Newton Brooks Sites of Nature Conservation Interest (SNCI)
- Near to Carrs Woodland Local Nature Reserve
- Near to Cotswolds Area of Outstanding Natural Beauty (AONB) (1km away)

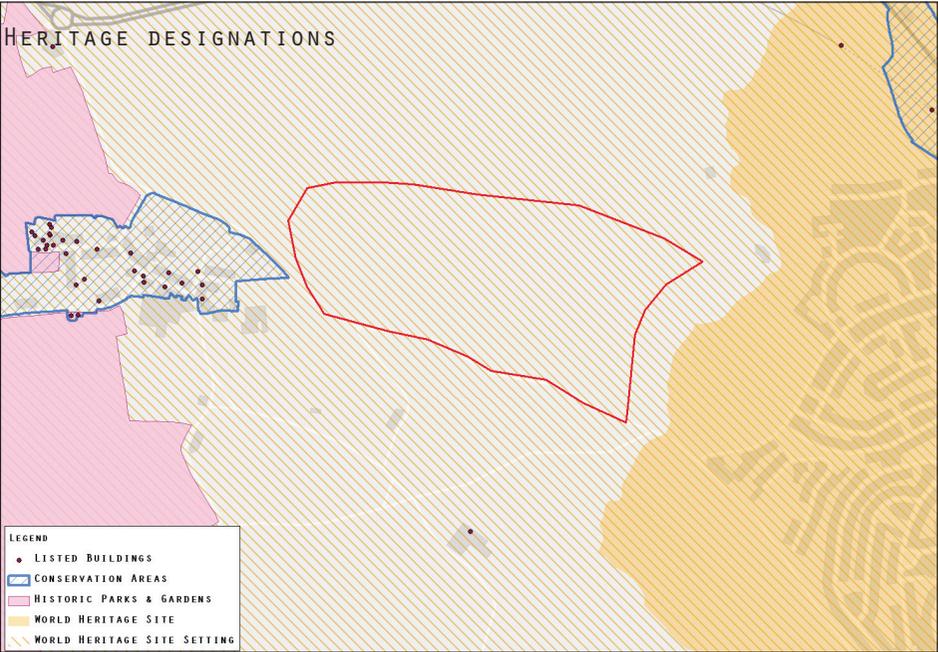
ENVIRONMENTAL DESIGNATIONS



LANDSCAPE DESIGNATIONS



HERITAGE DESIGNATIONS



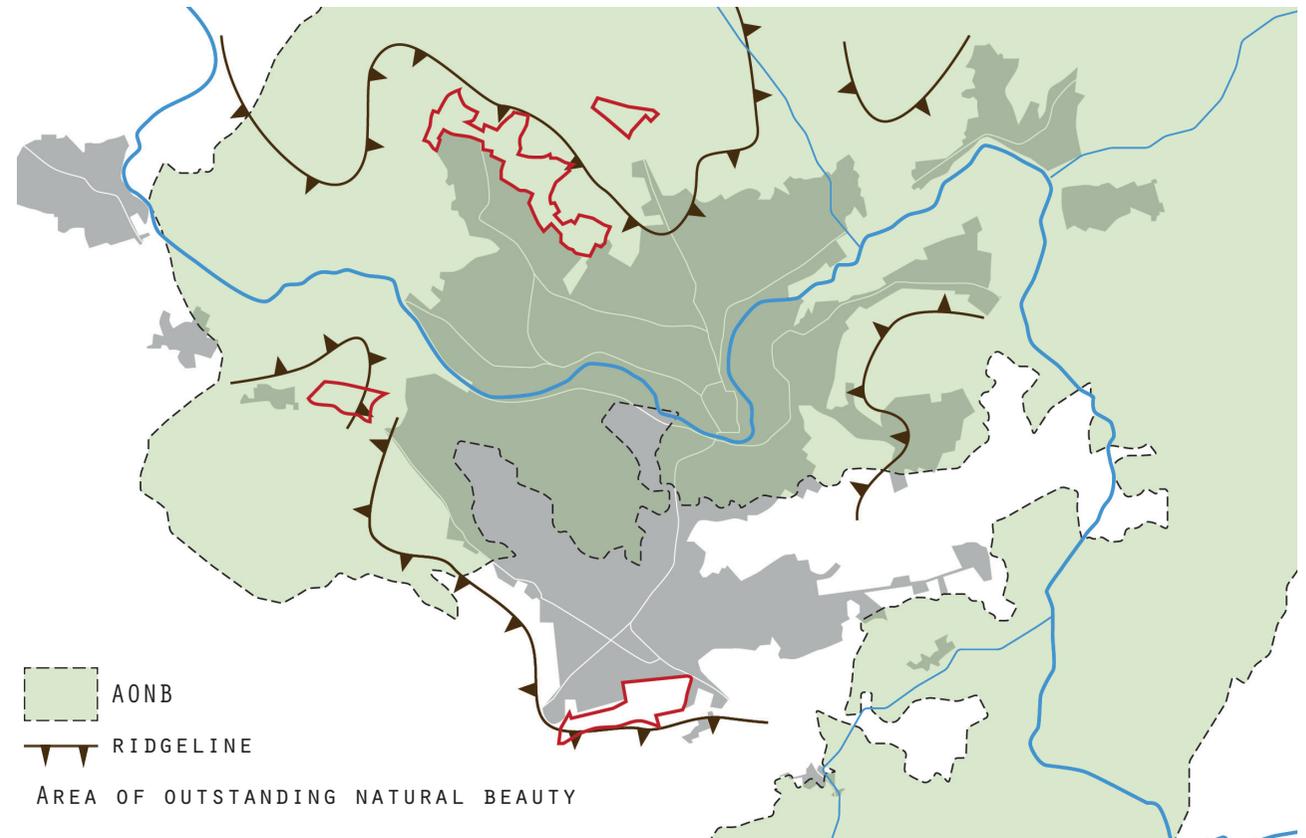
2.4 LANDSCAPE APPRAISAL

Bath is situated within an enclosed landscape around the River Avon. The settlement occupies the lowlands along the river and the slopes which rise from the river banks to become the hills of the southern Cotswolds to the north of the city and the lower lying areas around Cam Brook and Wellow Brook to the south of the city.

B&NES LANDSCAPE CHARACTER ASSESSMENT

The B&NES report *Rural Landscapes of Bath & North East Somerset - A Landscape Character Assessment* identifies that:

“Geologically the area is significant because it marks the western limit of the typical English lowland landscape characterised by scarps and gently undulating flat topped hills and broad clay valleys. The older formations of Wales and land to the south-west by contrast are characterised by gnarled and rugged scenery all intensely folded and faulted. These older formations are represented, for example, by the Carboniferous Limestone of the Avon Gorge at Clifton which is outside the area and the Mendip Hills, of which only a narrow strip to the far south-west is within the area.”



The study goes on to outline how this geology, coupled with the drainage patterns of the area, has created a contrasting topography of deeply-incised river valleys in some instances, and open, wide flood plains in others. This contrast is best demonstrated by the River Avon around which Bath is situated

as it changes from an enclosed and overlooked basin with well defined tributary valleys to the open landscape beyond the city to the west towards Saltford and Keynsham.

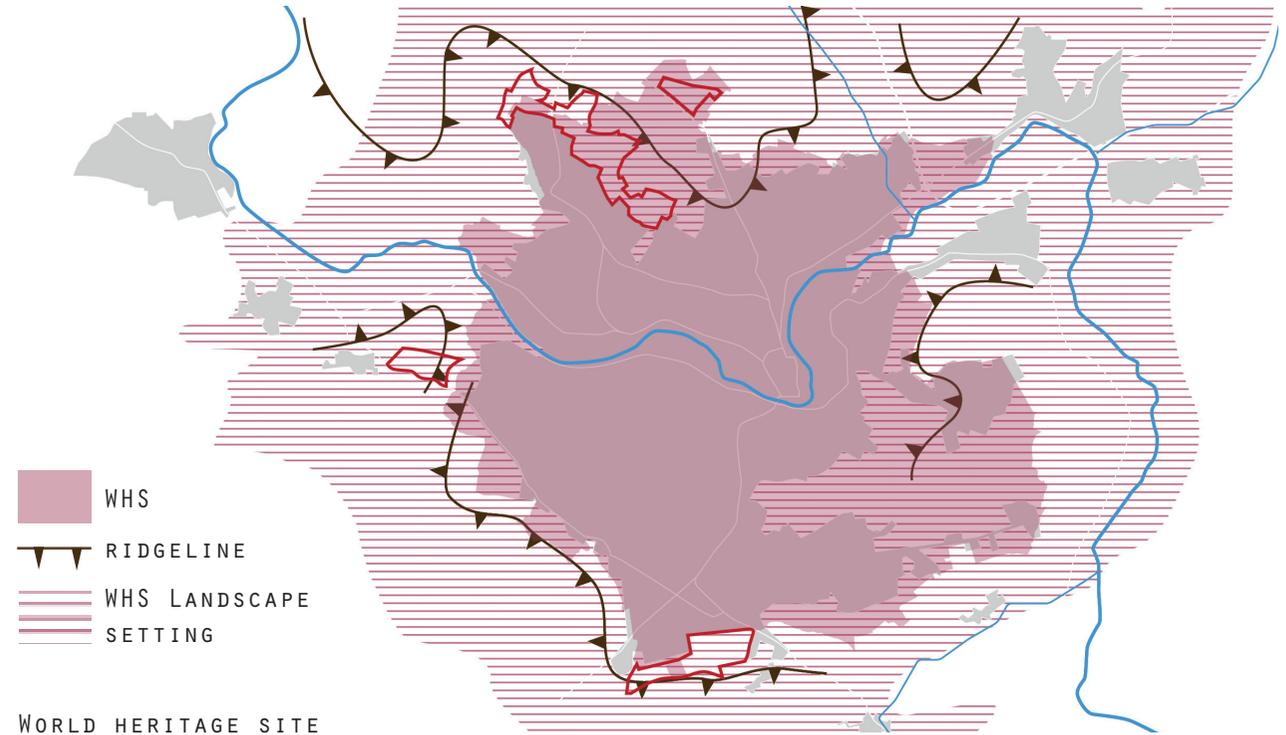
WORLD HERITAGE SITE

The designation of the World Heritage Site (WHS) has a strong correlation with the landform setting and character and quality of the landscape within and around the city such that it represents a manifestation of the strategic landscape constraints on the built form and the character areas within the city. The World Heritage Site describes a 'bowl' captured by the landform which comprises a variety of slope aspects and ridge lines.

Bath and North East Somerset Council have carried out a study into the setting of the World Heritage Site to inform developments coming forward within the WHS setting.

In summary the key characteristics identified in this study which are of importance to the landscape and topographic setting of Bath are:

- Strong landform features and distinctive character zones, reinforcing the containment of the city within its landscape;
- High quality surrounding landscape character;
- Abrupt edge between built development and the countryside;
- A mixture of city character areas which together produce a distinct Bath character.



The landscape and topographic setting to the World Heritage Site consist of the following:

- The city within the hollow;
- A variety of landscape character areas adjoining the settlement boundary which have also been instrumental in defining the character of the city;

- Specific landscape features which are identifiable today or have influenced the morphology of the built environment which exists today including the relationship between landscape and architecture, the significance of the picturesque qualities of the landscape and the open elements of landscape both beyond and within the WHS boundary.

DRAFT SUMMARY ASSESSMENT OF
IMPACT OF PROPOSED BATH URBAN
EXTENSION SITES ON THE WORLD
HERITAGE SITE SETTING

West of Twerton was a potential urban extension site considered in the Core Strategy Options Document (October 2009). Any extension within these areas was considered to have an impact on the Bath World Heritage Site Setting.

The assessment was based on broad assumptions about the nature of the proposed development and it was intended as an interim guide to the expected impact until a more detailed assessment is carried out for a specific proposal or Masterplan for each study area.

The overall significance of the impact on the setting was noted to vary according to the sensitivity of the individual assets affected (whether the landscape, views or historic buildings or remains) and the magnitude of impact of the proposals on those assets.

The potential impact of proposals was considered to be:

Landscape Setting: The study area forms an integral part of the open rural character of this part of the Avon Valley and was identified as being widely

visible. Significant development was noted to impact on the important approach into Bath from the west and therefore conflict with characteristics recognised in Bath's statement of Outstanding Universal Value. The landscape was therefore identified as having a high sensitivity and development was considered to have a high negative impact on landscape setting. The significance of the impact on the World Heritage Site landscape setting would be high.

Visual Setting: There were noted to be a number of views which would be potentially affected by development at this location. The degree of impact was considered to vary between high negative to low negative depending on the distance of the viewing point.

Historic Context: Development of this study area may impact on buried archaeological remains including known evidence of Roman and Iron Age activity in the area.

Summary: Development of this study area would likely have an overall high negative impact with high significance to the setting of the World Heritage Site. This is considered likely to affect

landscape setting, important views and known/potential historic remains which are integral to the Outstanding Universal Value of the World Heritage Site.

The report provided the following design considerations should an urban extension be allocated for this part of Bath:

- Careful consideration needs to be given to the design and layout as the study area is situated in a very prominent location.
- New tree planting would have limited benefit in screening development because of the visually exposed nature of the location and the time needed for trees to grow to form an effective screen.
- There are opportunities to enhance existing Green Infrastructure both within the area and linking into Bath and the open countryside such as along the river corridor including the Bristol and Bath Railway Path. Seven Acre Wood should form a key part of the Green Infrastructure.

2.5 PHOTOGRAPHIC APPRAISAL

The study area is located on slopes facing towards the city. Views are primarily from the adjacent westward facing slopes of Twerton with long distance views from Weston.



The view looking west from the residential area of Twerton looks towards the reduced redline area proposed to the west of Twerton. The ridge line restricts the redline to the west and steeper slopes into the Newton Brook valley restrict the area to the east.



The view towards Twerton, eastwards, from within the site show development which is prominent by its presence upon this outlying hill of the city. The land in this view slopes away gently, remaining developable, until a distinct break of slope to the steeper sides of the Newton Brook valley.

3 ■ CONSTRAINTS AND OPPORTUNITIES

3.1 CONSTRAINTS

VISUAL IMPACT

This study area is constrained by the visual sensitivity of this location. The main visual sensitivities are: World Heritage Site to the east, Newton St Loe Conservation Area to the West, and the Cotswold Area of Natural Outstanding Beauty to the north (within 1km) with the indicative World Heritage Site setting in all directions.

The ridge line running west of Newton Brook provides a natural topographical feature which may, to an extent, limit the visual impact of development on land to the west of Twerton.

The reduction in the study area is in direct response to English Heritage's (Core Document CD8/01) comments on the Core Strategy options (SWB1) where they stated that: "Unless development at the Twerton site is contained to the south side and does not rise above the ridgeline there would be an unacceptable impact on the setting of the World Heritage Site."

Whilst a developable area can be defined in order to minimise or reduce visual impact and harm to the World Heritage Site setting, even this developable area may still cause some harm.

LANDSCAPE CHARACTER

Two primary areas of landscape character importance are identified locally and would form the setting of any development on land to the west of Twerton. The historic landscapes of Newton St Loe to the south west and Kelston Park to the north are high quality landscapes which are deemed important in the setting of the World Heritage Site and sensitive to development west of Twerton.

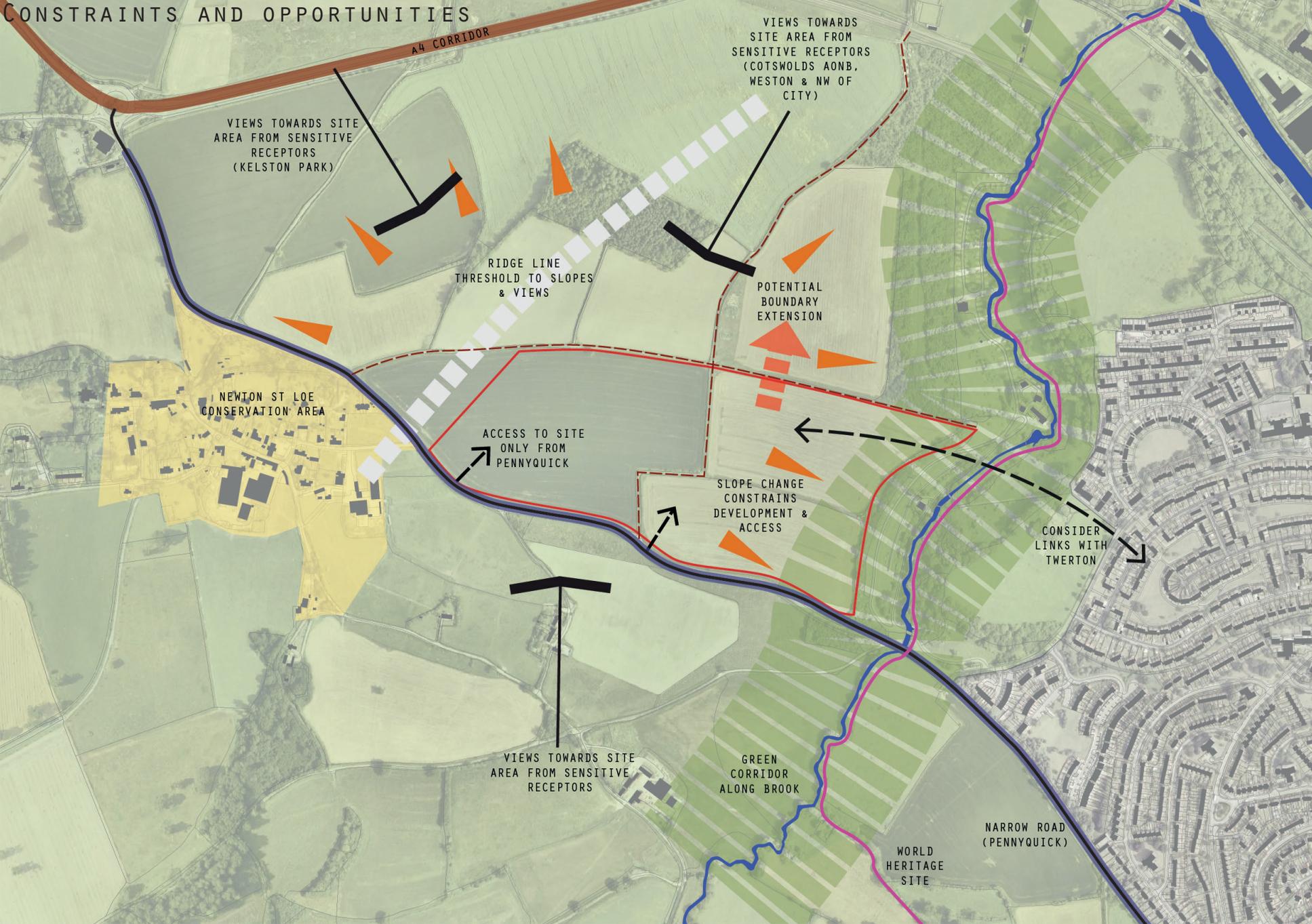
Local variations in landscape character exist and Pennyquick Lane forms a boundary to the character of the fields and slopes which define the study area and the contrasting character of Newton St Loe to the south west of this road. Likewise, the river corridor and flood plain to the north, with the valley containing Newton Brook to the east form a landscape 'gap' to the west of the city which are strongly perceived from a range of receptors in and around the area.

ACCESS

The only access is from Pennyquick lane. Improvements to the road as it climbs the hill from the direction of Twerton having crossed the Newton Brook would be necessary but not viable. Any additional access which connect the area more comprehensively are constrained given the capacity of the study area.

-  STUDY AREA BOUNDARY
-  WORLD HERITAGE SITE
-  SIGNIFICANT VIEWS
-  DIRECTION OF SLOPE
-  VEHICULAR ACCESS OPPORTUNITY
-  PUBLIC RIGHT OF WAY
-  POTENTIAL FOOTPATH CONNECTIONS
-  PRIMARY ROAD CORRIDOR
-  NARROW LANE
-  STRATEGIC GREEN CORRIDOR
-  GREEN BELT
-  CONSERVATION AREA
-  VISUAL THRESHOLD

CONSTRAINTS AND OPPORTUNITIES



3.2 OPPORTUNITIES

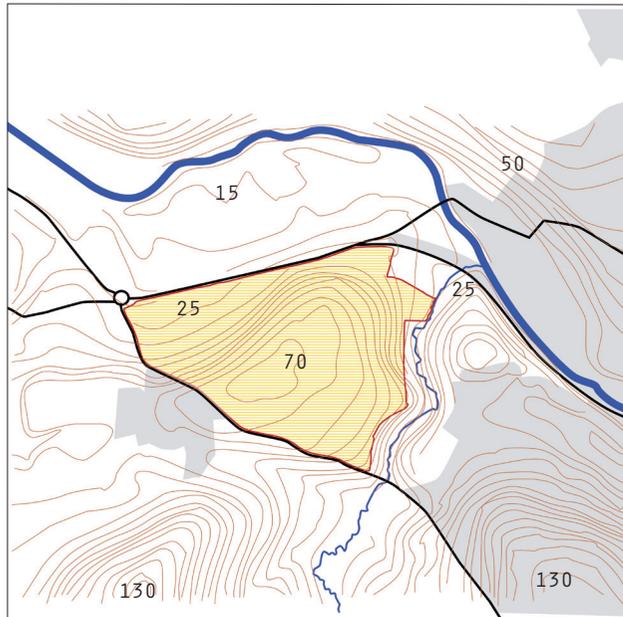
Opportunities for development are limited due to the capacity to deliver a well-integrated and connected neighbourhood.

Priority in this location has been for the minimisation of impact to the surrounding setting. This in turn has resulted in the constraining of a developable area to a level which offers limited opportunity for meaningful, sustainable or positive development.

The generation of housing numbers at a maximum density and maximising site capacity provide, at most, a quantum of development which has limited opportunity to provide associated facilities and the critical mass of population to support a local centre or community benefits which may normally be provided through the development process.

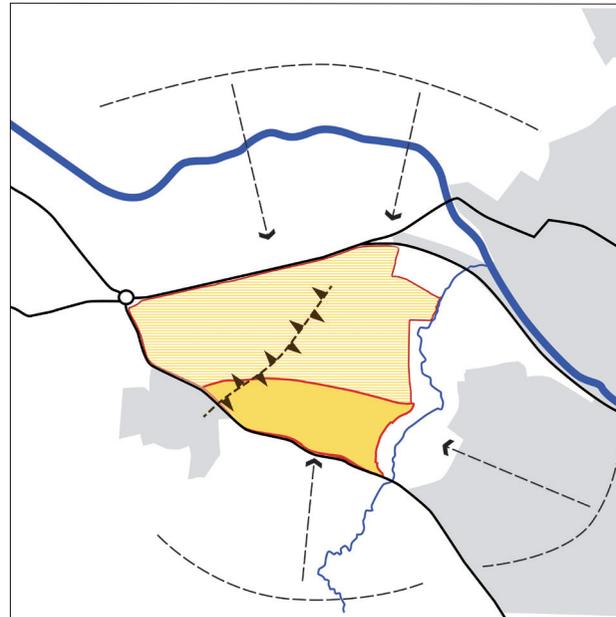
3.3 DEFINITION OF DEVELOPABLE AREA

DUCHY REDLINE BOUNDARY



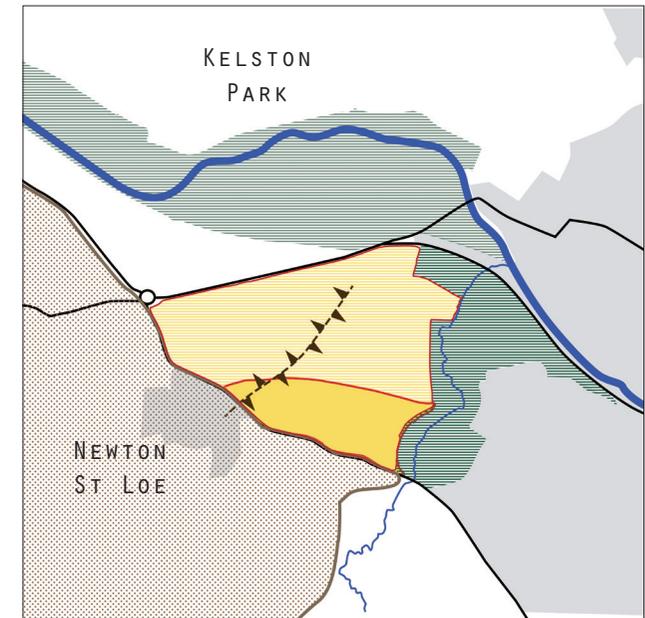
The developable area has been derived by assessment of the constraints affecting a proposal by the Duchy for a masterplanned urban extension at Twerton. The boundary was within an extensive redline area reaching from Newton Brook in the east, Pennyquick lane to the south, the railway line to the north a site area reaching as far west as the Globe roundabout.

VIEWS



Following 'in principle' objections from English Heritage as part of the Core Strategy options generation process (CD8/01), a reduced development area has been suggested by B&NES for further study which may have a reduced impact on the setting of Kelston Park.

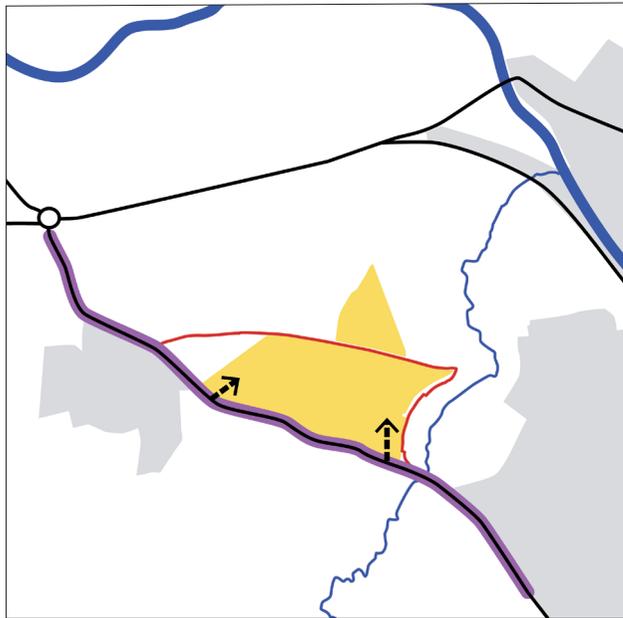
LANDSCAPE CHARACTER



The reduced study area responds to landscape character and takes into consideration a more topographically constrained parcel on the east facing slope of the landform.

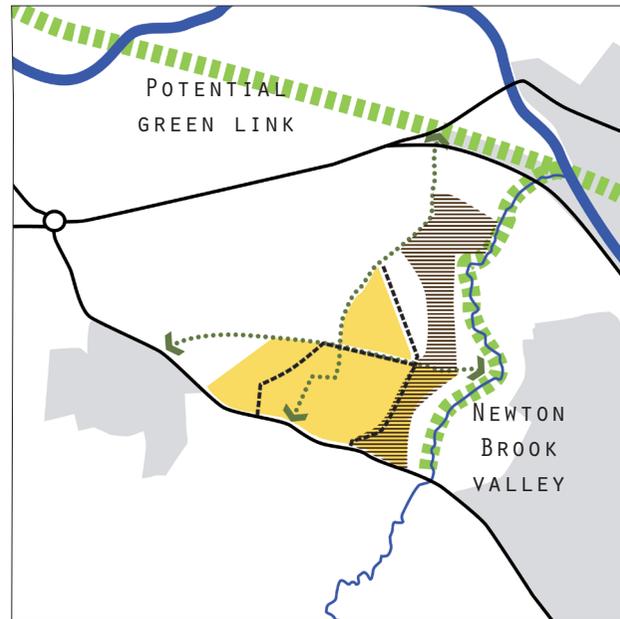
This takes into account the effect on the settings of Newton St Loe Conservation Area and Kelston Park historic landscape.

ACCESS



The B&NES boundary includes a portion of the land which lies west of the ridgeline; the Concept Options in this report propose to swap the western area of land with an equally sized area north of the existing site boundary. Access is only available from Pennyquick which is highly constrained in terms of capacity.

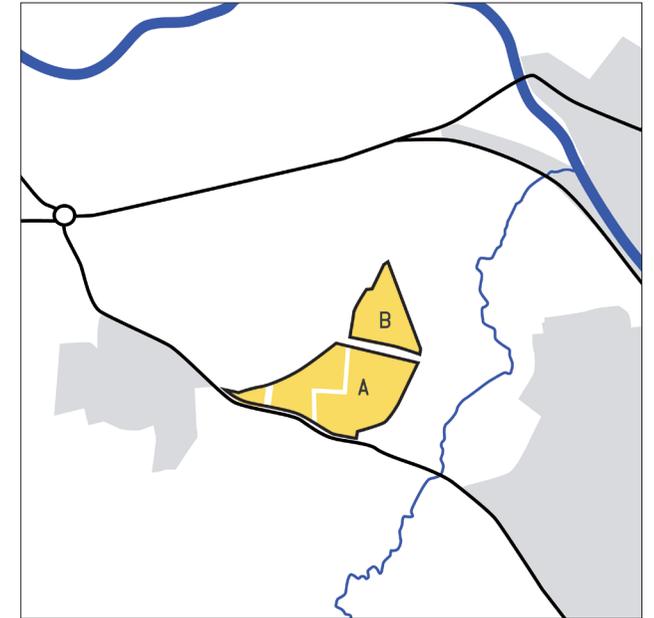
CONTEXT AND CONNECTIONS



The boundary is further reduced by a particularly steep portion of land at Newton Brook valley.

There is the potential for a green link connection to City River Link. There are existing historic routes across the study area (Stowey Lane and Waltening Lane).

DEVELOPABLE AREA



The constraints leave two development parcels: A - the remaining developable area of the B&NES study area boundary; and B - the additional piece of land north of the boundary. This approach offers the most visually sensitive option for development, in keeping with the prevailing development pattern of the area.

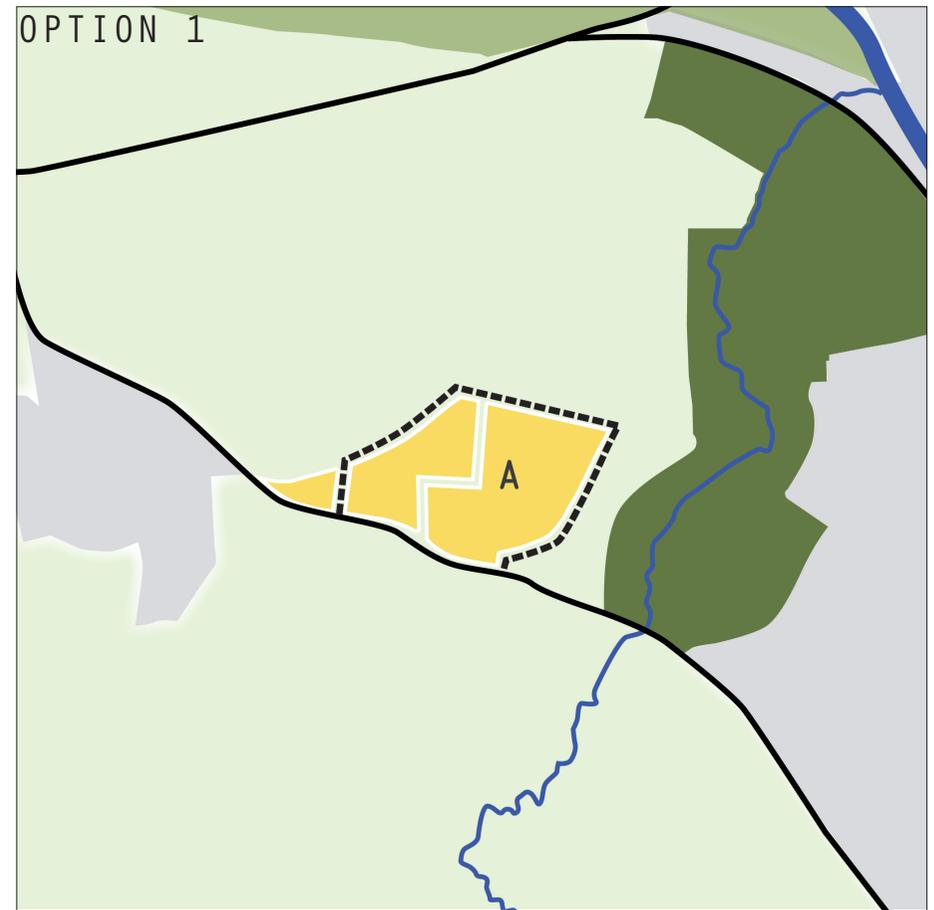
4 ■ DEVELOPMENT CONCEPT OPTIONS

4.1 CONCEPT FRAMEWORK OPTIONS

The constraints reduce the developable area to a size which is very limited in its capacity to provide a meaningful amount of development.

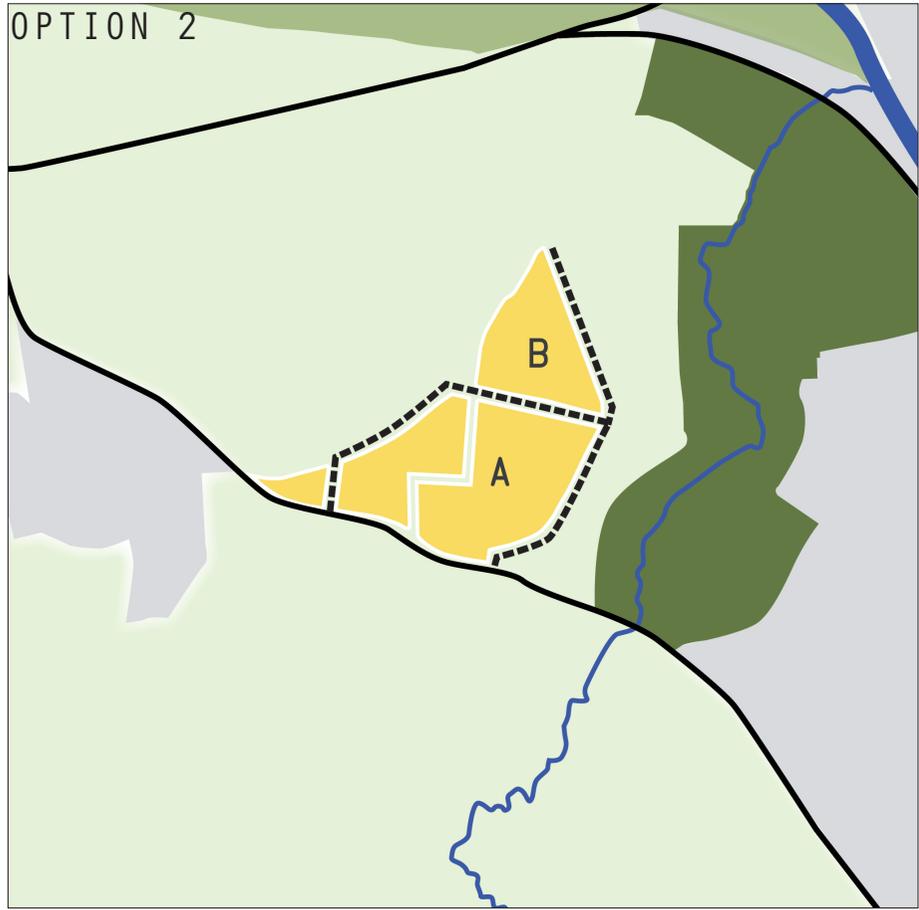
While a range of housing numbers have been provided based on a pragmatic density of development, the contextual constraints lead to an isolated development, not significant enough to merit dedicated facilities in this location. It may be deemed inherently unsustainable given the combination of modest capacity and limited opportunity to connect the site in a sustainable way to nearby existing communities.

Option 1 shows development within the original boundary, accessed from Pennyquick. Option 2 widens this development area to include land to the north which is relatively unconstrained and sits east of the ridgeline.



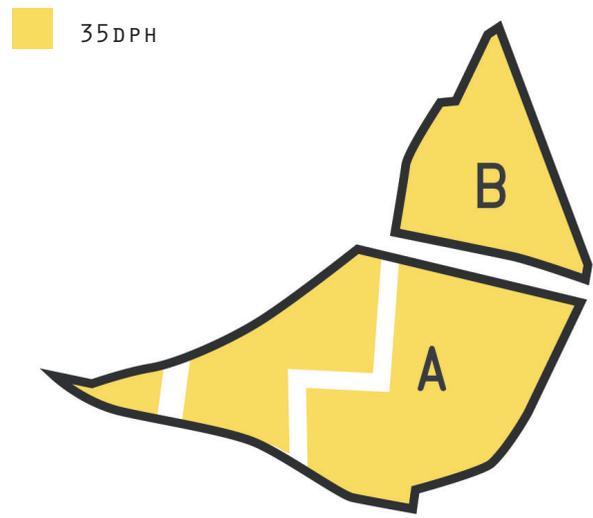
RESIDENTIAL DEVELOPMENT QUANTUM

	GROSS DEVELOPABLE AREA (HA)	DENSITY (DWELLINGS/ HA)	TOTAL HOUSING QUANTUM	TOTAL HOUSING QUANTUM	NET HOUSING QUANTUM
A	9.9	35	347	90%	260
TOTAL	9.9		347	90%	260



RESIDENTIAL DEVELOPMENT QUANTUM

DEVELOPMENT DENSITY
(DWELLINGS PER HECTARE)



Even with the reduced developable area, any development would still be widely visible from sensitive viewpoints such as the Cotswolds Area of Outstanding Natural Beauty and would have a significant impact on the setting of the World Heritage Site.

	GROSS DEVELOPABLE AREA (HA)	DENSITY (DWELLINGS/HA)	TOTAL HOUSING QUANTUM	TOTAL HOUSING QUANTUM	NET HOUSING QUANTUM
A	9.9	35	347	90%	260
B	4	35	140	90%	105
TOTAL	13.9		487	90%	365

Accessibility of any development at this location is likely to be car dominated with limited opportunity for public transport and is therefore unlikely to meet aspirations to reduce car use and promote sustainability through increased pedestrian and cycle use.

4.3 DEVELOPMENT QUANTUM

DEVELOPABLE AREA

The intention of the site analysis, the opportunities and constraints and outlining of development concept options has been to establish the developable area. This is subdivided into residential development plots. The **gross developable area** (GDA) provides overall figures (ha) for residential plots and any directly associated uses which may include:

- Housing areas including private gardens and parking
- Incidental open space and landscaping
- Children's play areas (ha)
- Access roads within the site (ha)
- Provision of on-site drainage solutions

The intention of this work is to examine the locations to accommodate housing led development, figures therefore exclude:

- Major distributor roads
- Non-residential land uses
- Primary schools
- Adult/youth play spaces or other open spaces serving a wider area
- Significant landscape buffer strips

Figures for landscape and non-residential land uses are provided in the "Development Quantum" table.

CAPACITY

On the basis of the gross developable area, the capacity of this location to deliver residential development has been determined by the application of an assumption for the **density of development**, measured as average number of dwellings per hectare (dph).

Based on these densities, this exercise has established a **total housing quantum** for each development plot.

To provide a more refined housing capacity an **efficiency factor** has been applied (90%) to account for the difficulty associated with developing the site and any directly associated uses.

Taking these factors in to consideration a **net housing quantum** figure has been calculated to establish the housing capacity of the plot only.

SUMMARY

Based on the above, the capacity of this study area therefore is dependent on a number of factors:

- The extent of the developable area that is taken forward as an allocation
- The difficulty with developing the portion of the site taken forward as an allocation
- The approach taken to density.

5 . INFRASTRUCTURE REQUIREMENTS

5.1 OVERVIEW

This section seeks to explain the infrastructure required to support the level of housing growth at West of Twerton. If this study area is to be taken forward in the Core Strategy, within the capacity range as indicated within the previous chapter, it will trigger the need for the provision of physical, social and green infrastructure.

The understanding of infrastructure triggers and requirements has been informed using the following sources:

- West of England Infrastructure Delivery Plan
- Bath & North East Somerset Council Infrastructure Delivery Plan
- Green Space Strategy
- Planning Obligations Supplementary Planning Document
- A review of best practice standards and population thresholds

Once the Council's Members and Officers complete the site selection process for the allocations to be taken forward within the Core Strategy there will

be a need to assess the cumulative effects of these preferred sites.

5.2 ASSUMPTIONS

The infrastructure requirements are considered against the development capacities outlined in the previous section (housing range 260 - 365) and the following assumptions:

- Average household size of 2.2 people
- Projected population range of 570 - 800
- Completion rate of 50 - 100 dwellings per annum
- Mix: The Council is proposing to change the Core Strategy policy (CP9) on Affordable Housing in response to concerns raised by the Examination Inspector. This changes will introduce a split target on affordable housing; this site is identified for 30% affordable with the remainder being predominantly larger, family housing.
- Early years age 0-2: 4 places per 100 dwellings¹

- Early years age 3-4: 11 places per 100 dwellings¹
- Primary school pupils: 31 places per 100 dwellings¹
- Secondary school pupils: 15 places per 100 dwellings¹
- Post 16 pupils: 4 places per 100 dwellings¹
- Formal Green Spaces: 15 sq m per person (min)¹
- Natural Green Spaces: 15 sq m per person (min)¹
- Allotments: a minimum of 3 sq. m per person with a minimum site size of 1,500 sq. m / 10 plots¹
- Children's Play Space: 0.8 ha per 1,000 population²
- Outdoor Sports: 1.6 – 1.8 ha per 1,000 population²
- Indoor Sports: 0.77 ha per 1,000 population²

5.3 PHYSICAL INFRASTRUCTURE

INFRASTRUCTURE CATEGORY	ITEM	COMMENTARY
TRANSPORT	Walking	This location is isolated with journey distances deterring walking to major employment sites. There are no established pedestrian networks/amenities adjacent to the site.
	Cycling	No formal cycle routes in the area. Trips to central Bath would take approximately 20 minutes.
	Public Transport	New/diverted services required. Uncompetitive bus journey times would deter modal shift from car use.
	Highways	The developmental area is largely confined to a single route (Pennyquick) with relatively minor impacts on the routes into Bath (A4 & A36). Little scope for promotion of modal shift. No significant increases in traffic volumes forecast on highways outside of Bath.
	Summary	The area is isolated with poor connectivity to sustainable transport infrastructure. Vehicular impacts associated with development are relatively minor and largely confined to Pennyquick. There is little scope for promotion of modal shift and development of this location is likely to lead to car dependent travel patterns.
WATER	Potable water supply	There will be need for new mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs.
	Waste water + drainage	Developers will be expected to contribute to the cost of this infrastructure. This site will require improvements to sewerage capacity at Keynsham as there is insufficient local capacity. Timescales for delivery of strategic enhancements to the network could be 3 to 5 years. Impact on housing viability: not quantified, in the IDP.
	Flood risk + drainage	Flood Zone 1: Low Probability Due to topography, location and green space within the site, local drainage solutions would be viable, and therefore unlikely to be significant additional developer costs.

ENERGY	Gas	Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.
	Electricity	Reinforcement costs would be shared between the developer and WPD. Impact on housing viability: low, as although there will be some costs, they are unlikely to be a significant additional cost.
	Decentralised energy	Based on an initial review of the potential level of housing to be delivered on this site with the mix of uses limited to housing – this will likely rule out the viability of CHP.
ICT	Broadband	Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.
WASTE	Waste treatment	This site is considered to be served by existing residual waste treatment facilities and the two planned at Broadmead Lane, Keynsham and Fuller’s Earth Works, Odd Down, Bath.
RESIDENTIAL BUILDING STANDARDS	Sustainable design	All new residential development to be Code for Sustainable Homes (level 4). Requirement for zero carbon development after 2016. Renewable energy options will need to be considered on site to meet these requirements.

5.4 SOCIAL INFRASTRUCTURE

INFRASTRUCTURE CATEGORY	SUB-CATEGORY	COMMENTARY
EDUCATION	Early years	Early Years contribution will be required. This could be co-located with primary school (see below) and may result in on-site provision. Early Years (0-2): 10 - 15 places Early Years (3-4): 28 - 40 places
	Primary school	Development on this site is likely to trigger the need for primary school provision on site (indicative catchment population of 4,000 ¹). Primary school places: 80 - 113

	Secondary school	Development unlikely to solely trigger the need for secondary provision on site (indicative catchment population of 8,000 required ¹). Need to expand existing secondary provision in the area. Secondary school places: 39 - 55 Post 16 places: 10 - 15 N.B. Contribution from development would be required to consider the cumulative impact of the pupils generated at the Bath study areas on secondary school provision in Bath. Some of the pupils generated may be able to be accommodated and some will require additional places to be created. The schools in Bath are either VA schools or Academies and expansion would require the agreement of these schools. If not possible to sufficiently expand existing secondary schools then a new school would need to be provided in Bath.
HEALTH	Health centre	Development unlikely to solely trigger the need for health centre provision on site (indicative catchment population of 10,000 required). Possible need to expand existing health centre provision in the area.
AFFORDABLE HOUSING	Affordable housing provision	A large development site like this will trigger an average affordable housing percentage of 30% to be provided on site. At the development capacities examined (260 - 365) this would trigger the need for 78 - 110 affordable housing units to be provided on site.

5.5 GREEN INFRASTRUCTURE

INFRASTRUCTURE CATEGORY	SUB-CATEGORY	COMMENTARY
GREEN SPACE (WITHIN SITE)	Formal Green Space	8,550 - 12,000 sqm (0.8 - 1.2 ha)
	Natural Green Space	8,550 - 12,000 sqm (0.8 - 1.2 ha)
	Allotments	1,710 - 2,400 sqm (0.17 - 0.24ha)
	Children's Play	0.46 - 0.64 ha
	Outdoor Sports	0.91 - 1.44 ha
	Indoor Sports	0.44 - 0.62 ha

5.6 SUMMARY

Infrastructure delivery is also dependent on: a) site masterplanning; and b) policy choices on the use of developer contributions.

The key infrastructure requirements that would be required to be provided by the development of this site would be:

- Early Years provision co-located with Primary School. Early Years (0-2): 10 – 15 places; and Early Years (3-4): 28 – 40 places
- Primary School provision on site. Primary school places: 80 – 113
- Contribution to Secondary school places: 39 – 55
- Contribution to Post 16 places: 10 - 15
- Provision of 78 - 110 affordable housing units on site
- Provision of Formal Green Space (0.86 - 1.2 ha); Natural Green Space (0.86 - 1.2 ha) and Allotments (0.17 - 0.24 ha)
- Provision of (or contribution to) Children’s Play (0.46 – 0.64 ha); Outdoor Sports (0.91 - 1.44 ha) and Indoor Sports (0.44 – 0.62 ha)

FOOTNOTES

1. Para 2.2.14, Page 26, Bath and North East Somerset Planning Obligations Supplementary Planning Document – Adopted July 2009
2. Provision of Recreational Facilities to Meet the Needs of New Development - Page 65, Policy SR.3 Bath & North East Somerset Local Plan including minerals & waste policies – Adopted October 2007
3. Shaping Neighbourhoods: a guide for health sustainability and vitality, Spoon Press London (2003), Hugh Barton, Marcus Grant and Richard Guise

6 ■ VIABILITY AND DELIVERY

6.1 GENERAL OVERVIEW OF RESIDENTIAL DEVELOPMENT LAND MARKET

This section provides a general overview of the demand and supply of residential land in Bath with consideration given to the delivery of this site.

DEMAND FOR RESIDENTIAL LAND

- Demand and supply of residential land are finely balanced at present across the West of England.
- An upturn in activity could see a land shortage with consequent upward pressure on land values across BANES as a whole.
- There is strong demand for well-located good quality sites for 50+ family housing units with Bristol, Bath and the outlying villages being hotspots.
- Volume house builders are currently seeking land in the Bristol and Bath area but are cautious of sites in excess of 100 units and typically are seeking deferred payment arrangements to landowners.
- Sites that have recently been brought to the market with planning consent and suitable

for between 50 and 100 units attract the most interest.

- In the stronger markets such as Bath and Bristol land values have recovered to pre-recession levels.
- The scale of interest in release of MOD sites in Bath reflects this with a higher land value achieved on the smaller MOD Warminster site (suitable for 100 homes) when compared to the larger Foxhill and Ensleigh sites.
- There is strong demand in the retirement, care and student housing markets.
- Weaker market demand for apartment schemes and smaller sites up to 30 units.

SUPPLY OF RESIDENTIAL LAND

- The increasing number of planning consents being won at appeal is driving an increasing number of transactions, typically promotion agreements on 'unallocated' land.
- The fundamentals underpinning demand for sites are closely linked to what is happening

in the housing market. Developers and housebuilders are seeking to build family houses with three or more bedrooms in locations where the local economy is outperforming.

- By attracting families who have already owned a home, they are targeting buyers who are 'equity rich', and able to access finance despite the current constraints in the mortgage market.
- The limited supply of consented sites has driven up values marginally during 2011, but cautious sales rates has broadly negated any real increase in land value over 2012.
- Development sites with over 25 units are now of interest to all house builders as they look to diversify their product offer and increase sales.
- 2012 has seen an improved demand for strategic land from volume house-builders wishing to increase their 5 year land supply pipeline.
- Demand has increased as house builders and developers have worked through their inventory of sites bought prior to the downturn, and are now actively seeking to bolster their land

pipeline.

- During 2012, greenfield values were up 3.6%, while urban values grew by 1.7%. Both outperformed national house price growth, which fell by -1.1%. These small value increases reflect a general shortage of suitable, permissioned land in the market, despite early signs that NPPF is leading to more consents, including those from appeal decisions.

MANAGING RISK IN DELIVERY

- Due to credit constraints investor/developers are increasingly taking on the master-developer role and acquiring land without planning consent, resolving planning, infrastructure and servicing and subsequently selling to the volume house builders.
- Funding and risk issues will remain a major barrier to bringing forward large, complex and marginal sites. This has created the necessity of a 'build now, pay later' land development model. Landowners will increasingly need to be co-investors or joint-venture rather than

outright, up-front sellers. This applies to both the public and private sector, but some of the public sector land initiatives recently announced have the potential to start bridging the delivery risk gap.

DELIVERY OF WEST OF TWERTON

- A much larger derivation of this site was previously assessed in the Strategic Housing Land Availability Assessment.
- The Duchy of Cornwall promoted the site on the basis of a larger site area: The Bath Urban Extension Development Proposal - February 2011.
- The site is in single ownership.
- The site has been deemed unsuitable location by both the Council and English Heritage due to would have a major impact on the setting of the World Heritage Site as the location is highly visually prominent. Development would breach the containment of the existing urban area.

- This reduction in the study area is in direct response to English Heritage's comments (Core Document CD8/01) where they stated that: "Unless development at the Twerton site is contained to the south side and does not rise above the ridgeline there would be an unacceptable impact on the setting of the World Heritage Site."
- The reduced site boundary is limited in both its capacity to provide a meaningful amount of development and its ability to connect in a sustainable way to nearby existing communities.
- The capacity of the site is not considered to be significant enough to viably provide dedicated facilities in this location.

7 ■ SUMMARY

7.1 PLACE - MAKING PRINCIPLES

This location (even as a reduced area) is considered to be widely visible from sensitive viewpoints such as the Cotswold Area of Outstanding Natural Beauty as well as having a negative impact on the setting of the World Heritage Site.

The place making principles set out below will not provide the necessary mitigation to significantly reduce these impacts.

- DENSITY AND BUILDING FORM - Development should show highest densities along Pennyquick, with lower densities and a more broken form around the rural edges. Taller buildings should be set back from the periphery to reduce visual impact.
- RIDGE LINE - Development needs to pay attention to the ridge line along the western boundary as a threshold to considerable visual impact to the west of the city.
- PHASING - Land adjacent to Pennyquick should be developed before the parcel to the north.
- LAYOUT - Noting the location relative to the green belt, the development should adopt an organic perimeter block layout in preference to a cul de sac layout or rigid rectilinear form. Existing historic routes across the site, Waltining Lane and Stony Lane, should be considered as reference points for the layout of development.
- ORIENTATION - Development should front onto open space and towards Twerton and the city of Bath.
- FOOTPATHS AND CYCLING - Public access should be retained as close as possible to existing routes and enhanced where necessary, with particular regard to pedestrian and cycle routes into Bath city centre. The site should connect to the local footpath network. While steeper slopes to Newton Brook may limit the extent of development to the east, pedestrian links across and along this valley need to be considered, including connections to neighbouring Twerton and links to the city centre along the improved riverside link.
- ARCHITECTURE - Development should have specific regard to vernacular and prevailing local architecture, using local materials where possible.
- BOUNDARY TREATMENT - Existing hedges should be retained and repaired where necessary and used as a gentle boundary treatment for the site. Visual mitigation measures should not rely on the use of dense tree lines and should use vegetation sparingly as a visual buffer.



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