

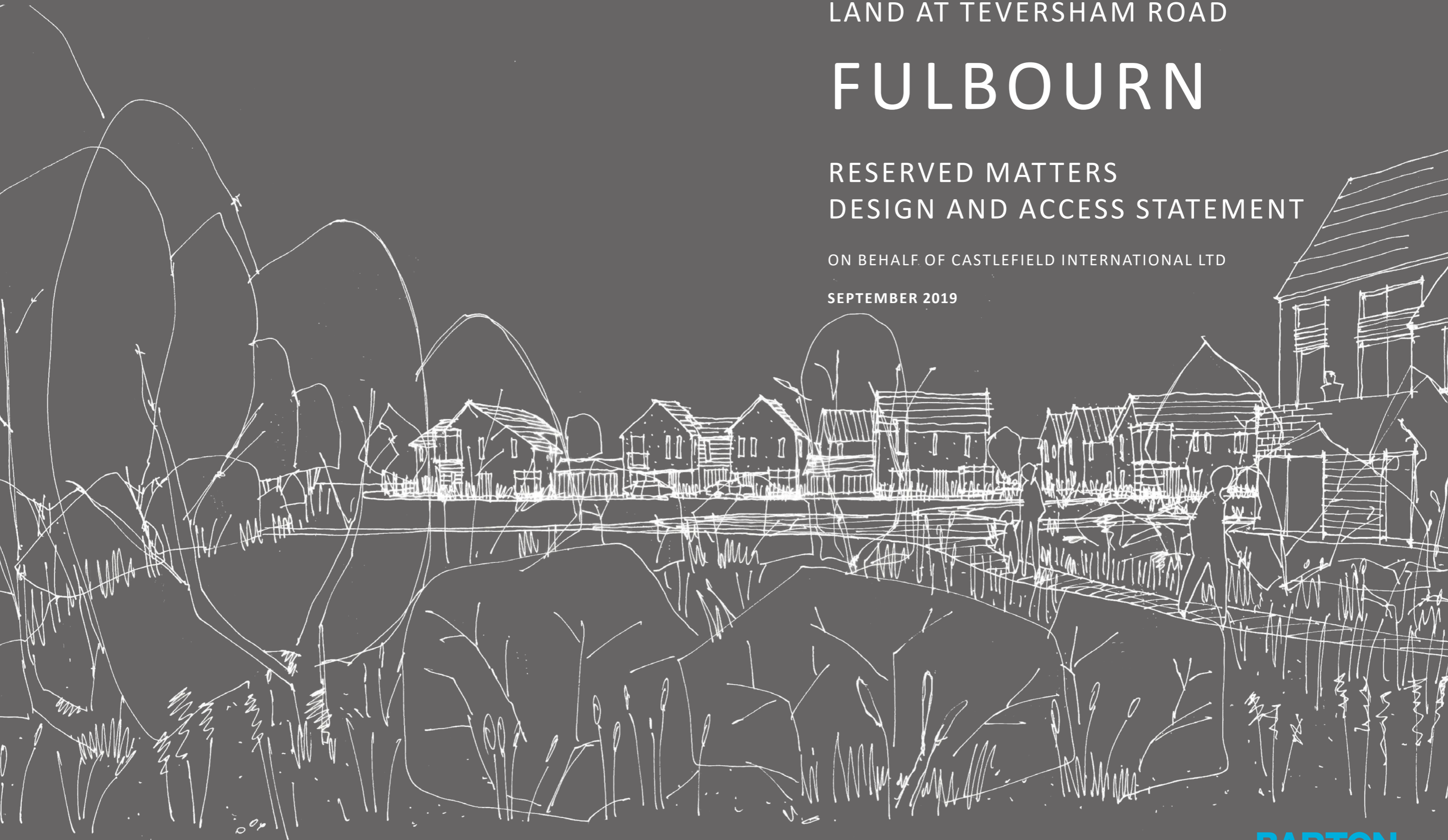
LAND AT TEVERSHAM ROAD

# FULBOURN

RESERVED MATTERS  
DESIGN AND ACCESS STATEMENT

ON BEHALF OF CASTLEFIELD INTERNATIONAL LTD

SEPTEMBER 2019



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# 1.0 INTRODUCTION

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## 1.1 VISION

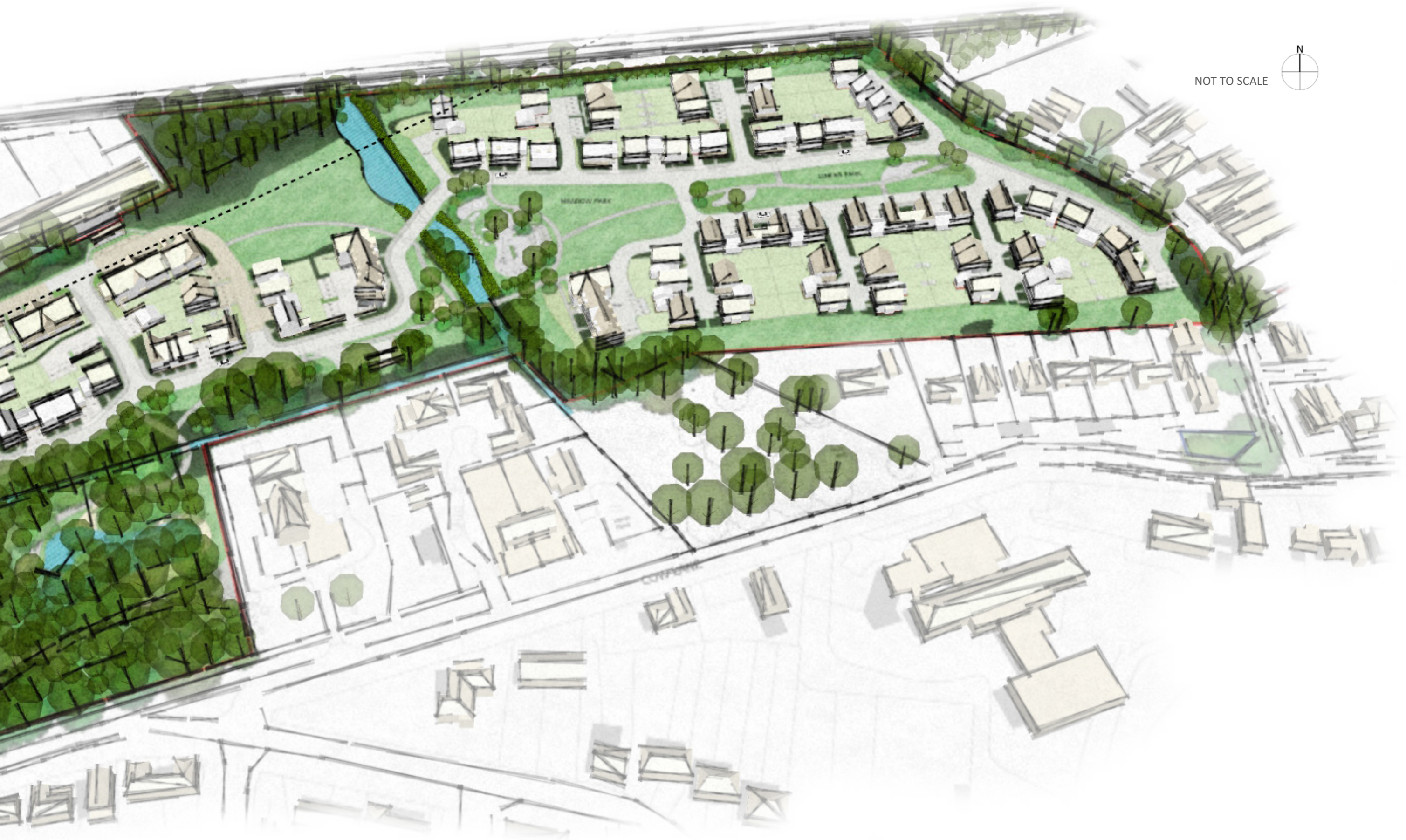
Our vision is to create a sustainable neighbourhood of Fulbourn, which is in keeping with the landscape and built character of the area, well connected to and integrated with the village. The history of the Site as fenland has been translated into the creation of an attractive meadow park as a setting for housing with a genuine sense of place.

The network of linked open spaces will provide extensive recreational opportunities for both new and existing residents of Fulbourn and become a shared community asset. The development will contribute to meeting local needs for family housing, including affordable homes.

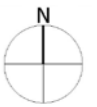


Figure 1. Illustrational View Across Site Looking North





NOT TO SCALE





## 1.2 SCOPE AND CONTENT OF DOCUMENT

This Design and Access Statement (DAS) supports the Reserved Matters Planning Application submitted on behalf of Castlefield International Limited relating to the development of land at Teversham Road, Fulbourn (the Site); and is described as:-

“Reserved Matters application pursuant to outline planning permission ref. S/0202/17/OL providing details relating to layout, appearance, landscaping, scale, and detailed design of the access arrangements in accordance with the previously approved access point onto Teversham Road, for a development scheme to provide 110 residential dwellings together with associated provisions, including public open space and landscaping enhancements.”

The proposal for the Site is detailed in this comprehensive statement and the plans and drawings which accompany the applications.

The purpose of this document is to describe the proposals in detail and to demonstrate how the design accords with the approved scheme.

This DAS is submitted in compliance with the Development Management Procedure (England) Order 2010 as amended in 2012 and 2013 (DMPO), and the Planning Practice Guidance 2014 (PPG, Paragraph 031, reference ID 14-031-20140306).

The DAS illustrates the design principles and concepts that underpin the application proposal and address the requirements set out at the PPG ‘Making an Application’. Specifically, responding to the PPG requirements ‘What should be included in a DAS’, this DAS explains:-

The design principles and concepts; and

The steps taken to appraise the context of the proposed development and how the design has taken this into account.

A variety of sources have been used whilst undertaking this document which include, amongst others, topographical survey, South Oxfordshire District Council’s (SODC) Local Plan, Fulbourn Village Design Guide SPA, Fulbourn Conservation Area and District Design Guide SPA 2010.

### INTRODUCTION (CHAPTER 1)

Outlines the content and function of this document

### SITE CONTEXT (CHAPTER 2)

Describes the site, its location and use, surrounding area, the planning context, and the basis for the RM Application

### SITE CONSTRAINTS AND OPPORTUNITIES (CHAPTER 3)

Summarises the analysis of the site context and how it affected the development

### DESIGN DEVELOPMENT (CHAPTER 4)

Providing a summary of the Pre-Application engagement which has taken place and the consequent design evolution.

### DESIGN PROPOSALS (CHAPTER 5)

This section provides the architectural and landscape detail, for the development as a whole and further design detail for each character area. Considers ecology in tandem with the landscape and drainage proposals

### ACCESS (CHAPTER 6)

Describes the detail of the highways, parking and refuse strategy

### ENVIRONMENTAL SUSTAINABILITY (CHAPTER 7)

This section details the approach to building performance, flood risk, drainage and security.

Figure 2. Design and Access Statement Structure

## 2. SITE CONTEXT

## 2.0 SITE CONTEXT

### 2.1 SITE LOCATION & DESCRIPTION

The Site lies on the northwestern edge of Fulbourn, a village located within the South Cambridgeshire District which lies approximately 8km south-east of the centre of Cambridge.

The village of Fulbourn is located on Cambridge Road which runs between Cambridge and Balsham.

### 2.2 CURRENT USE OF THE SITE

The Site encompasses 6.85 hectares of undeveloped land to the east of Teversham Road, to the south of the railway line and to the north of Cow Lane. The Pump House Garden lies adjacent Cow Lane and falls within Fulbourn Conservation Area. The Green Belt lies to the north. The Site is accessible from the public highway and is located within walking distance of the nearby High Street, local shops and facilities. There are no Public Rights of Way (PRoW) or permissive routes across the Site and abuts a pond known as Poor Well Water, across which a low quality pedestrian access has been informally created.

The Site is generally flat, partitioned by a narrow chalk stream and contained by extensive vegetation belts comprising hedgerows and mature trees, some of which align with the linear drainage channels within and adjoining the Site. The fields themselves are open grassland, whilst the Pump House Garden retains some more ornamental planting, despite its current neglected condition.

The Site is not covered by any statutory environmental designations. Two Sites of Special Scientific Interest are located within 2km of the Site, the nearest of which is 1.2km east of the Site (Fulbourn Fen). Both are designated primarily for their botanical interest. The Site lies within the low risk Flood Zone 1.



Figure 3. Fulbourn Location in Cambridgeshire



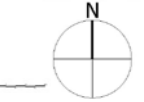


Figure 4. Eastern Part of Site



Figure 5. Existing Site Entrance



Figure 6. Currently Neglected Pond at the Pump House Green



Figure 7. Site Location in Fulbourn



# 2.0 SITE CONTEXT contin.

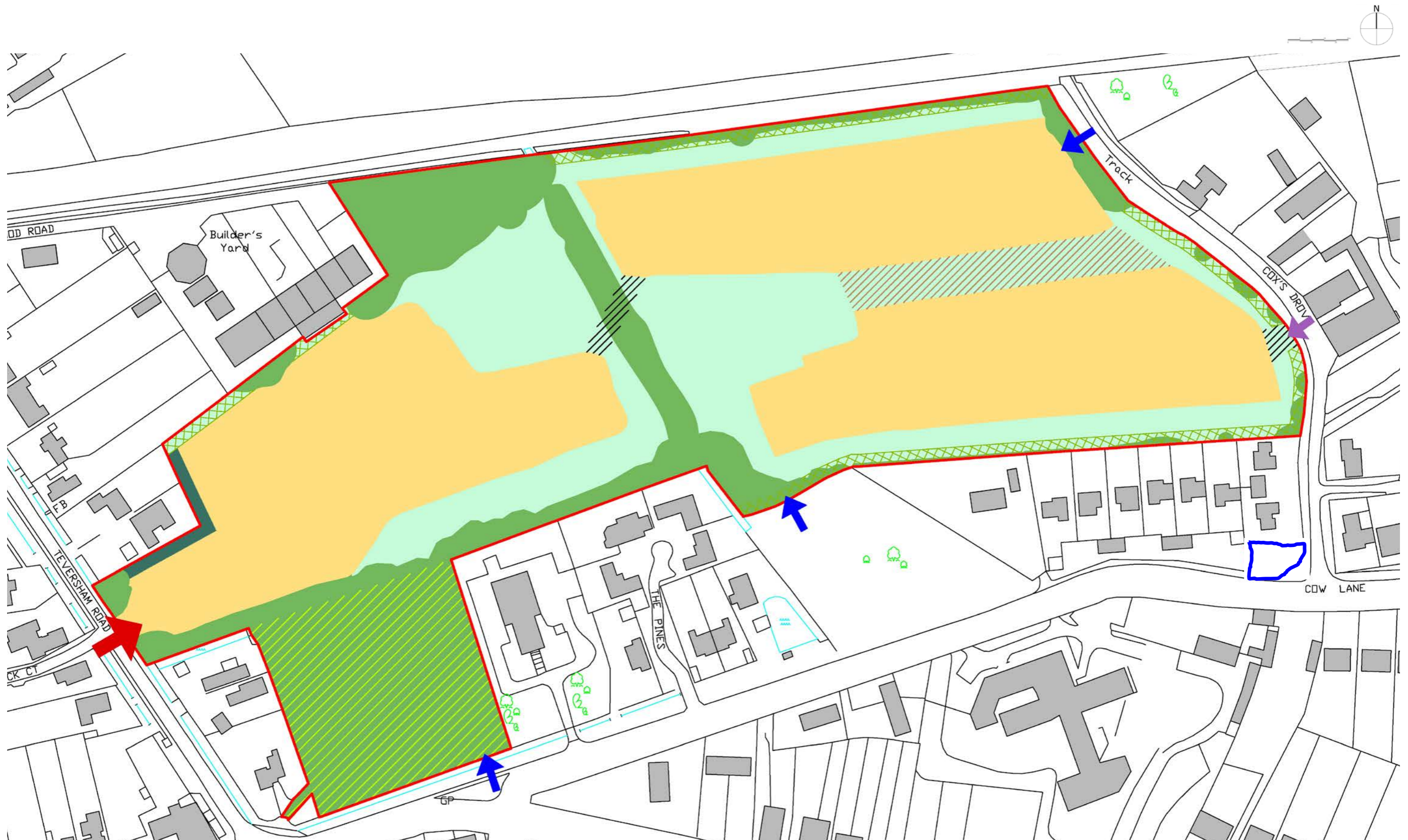















Figure 8. Outline Approved Parameters Plan



	Application Site Boundary
	Residential Development, up to 2.5 storey Eaves height above grade - up to 6m Ridge height above grade - up to 10.5m
	Open Space, including proposed planting, children's play areas, footpaths, boardwalks, SuDS and occasional parking
	Existing Vegetation, including root protection areas, to be retained, managed and enhanced Note: clearance as necessary to enhance stream ecology and accommodate vehicular route as indicated and pedestrian/cycle crossings as appropriate
	Proposed Boundary Planting (included in rear gardens)
	New Boundary Planting within Open Space
	Existing Watercourse
	Zone for Vehicular Route
	Zone for up to 2 Vehicular Links
	Ornamental Garden retained and enhanced
	Primary vehicular access point
	Pedestrian/cycle/emergency access
	Pedestrian/cycle access

## 2.3 PLANNING HISTORY CONTEXT

An outline planning application was made in 2014 (LPA Ref S/2273/14/OL) which was subsequently refused on three main reasons being:

- 1. Collective impact on landscape character, setting of Fulbourn Conservation Area, village character and ecological interests;
- 2. Designation in (then) emerging Local Plan as a 'Local Green Space'; and
- 3. Lack of evidence the development could deliver the dwellings within 5 years.

An appeal was lodged and a 7 day Inquiry ran in September 2016 and was dismissed in November 2016, but not on the reasons described above. The appeal was dismissed on the grounds that there were concerns regarding the future maintenance of open space on the site.

A second outline planning application (LPA Ref S/0202/17/OL) was submitted to South Cambridgeshire District Council in 2017 with revised Heads of Terms ensuring the open space issue was acceptable. The Outline Application was approved in October 2017, with 29 planning conditions.

The Approved Outline Application was for:

- Up to 110 dwellings;
- 77 market units and 33 affordable units; and
- Main access point from Teversham Road, and emergency access onto Cox's Drove.

The Reserved Matters planning application follows the design parameters established in the outline approved scheme.



## 2.0 SITE CONTEXT contin.

### 2.4 HERITAGE

Fulbourn has two large Conservation Areas; one around the historic heart of the Village (including the proposed boundary extension) and the other around the building complex supporting the 1850's Fulbourn Hospital.

There are over 50 listed buildings in Fulbourn with the majority listed as Grade II, two Grade II\* and numerous locally listed as Buildings of Merit. The Site has a number of locally listed buildings in close proximity . These include the Gate Lodge and Former Cambridge City Water Pump House, Pumping Station at Poor Well and the Horse Pond.

Fulbourn's development around winding country roads stems from Roman and Saxon times. The historic core around High Street has a substantial number of pre-Victorian buildings. There is a second historic core around Pond Green and a third at Home End. Along these early streets are a number of timber framed 14thC medieval farmhouses, cottages from the 16thC and 17thC with thatched or plain tiled roofs.

The 18th and 19thC saw considerable drainage work; first in the form of ditches, then windmills and by the 19thC commercial water extraction to serve Cambridge water supply by steam pump system. The Sites historic reference is from these drainage and pumping methods and hence the existence of Poor Well Water, Horse Pond and the Water Pumping Station in the vicinity. The Pumping Station closed in 1987 and the adjacent land ditches were allowed to flood giving rise to the Chalk Streams on the Site.

The 19thC railway line and link to Cambridge and Ipswich brought linear development and growth of industry and housing.

The Village expanded rapidly in the 1960's and 70's adopting a more suburban development grain but over time this has been softened with trees and planting.

Recent developments have been sited around Fulbourn's Hospital to the west with a Tesco store and offices which abuts the Cambridge suburbs of Cherry Hinton.



Figure 9. Horse Pond, Cow Lane



Figure 11. Gate Lodge to Pumping Station, Cow Lane



Figure 10. Pumping Station, Cow Lane



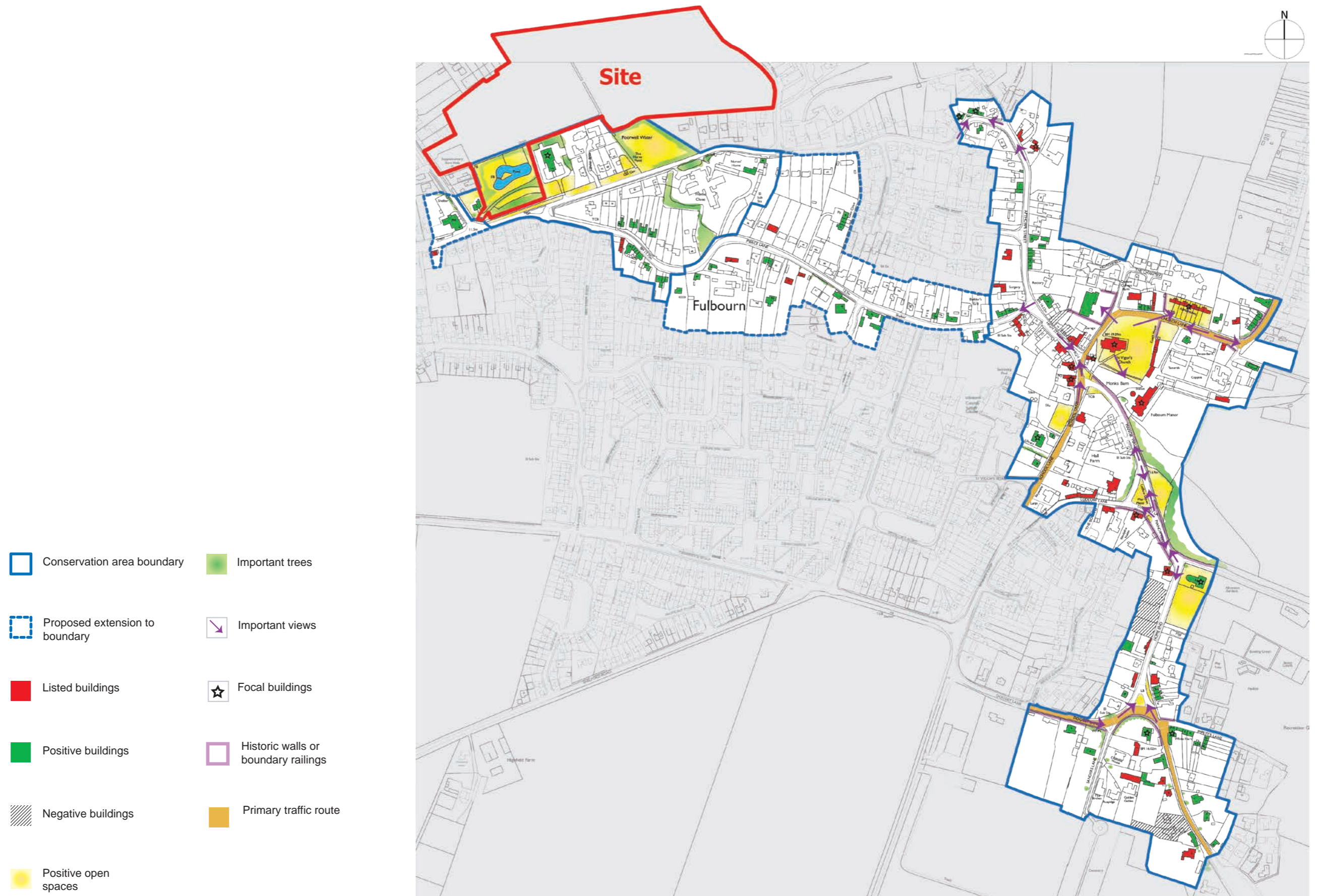


Figure 12. Fulbourn Conservation Area 1



## 2.0 SITE CONTEXT contin.

### 2.5 LANDSCAPE

How Fulbourn as a Village relates to the surrounding landscape is a key defining feature and should be preserved.

The approach into Fulbourn is along tree lined roads. Hedges and trees line the boundary between Village and countryside. Views out from the Village across the fenlands and Greenbelt provide a distinct rural connection.

Within the Village itself, there is the presence of tall trees and hedgerows, especially along the edge of Cow Lane adjacent the Site at Poor Well.

Within the Site, there is a delicate wildlife area of chalk streams which provides a natural green corridor from the countryside into the Village. The Site is relatively flat and sub-divided by these chalk streams.

The eastern part of the Site is heavily screened with thick hedging and trees. To the southwest, there is the presence of the Pump House Garden which has a currently neglected pond. This area would provide an unique ecological environment and is to be integrated and enhanced into the landscape and drainage proposals along with the chalk streams.



Figure 13. Pump House Garden and Pond

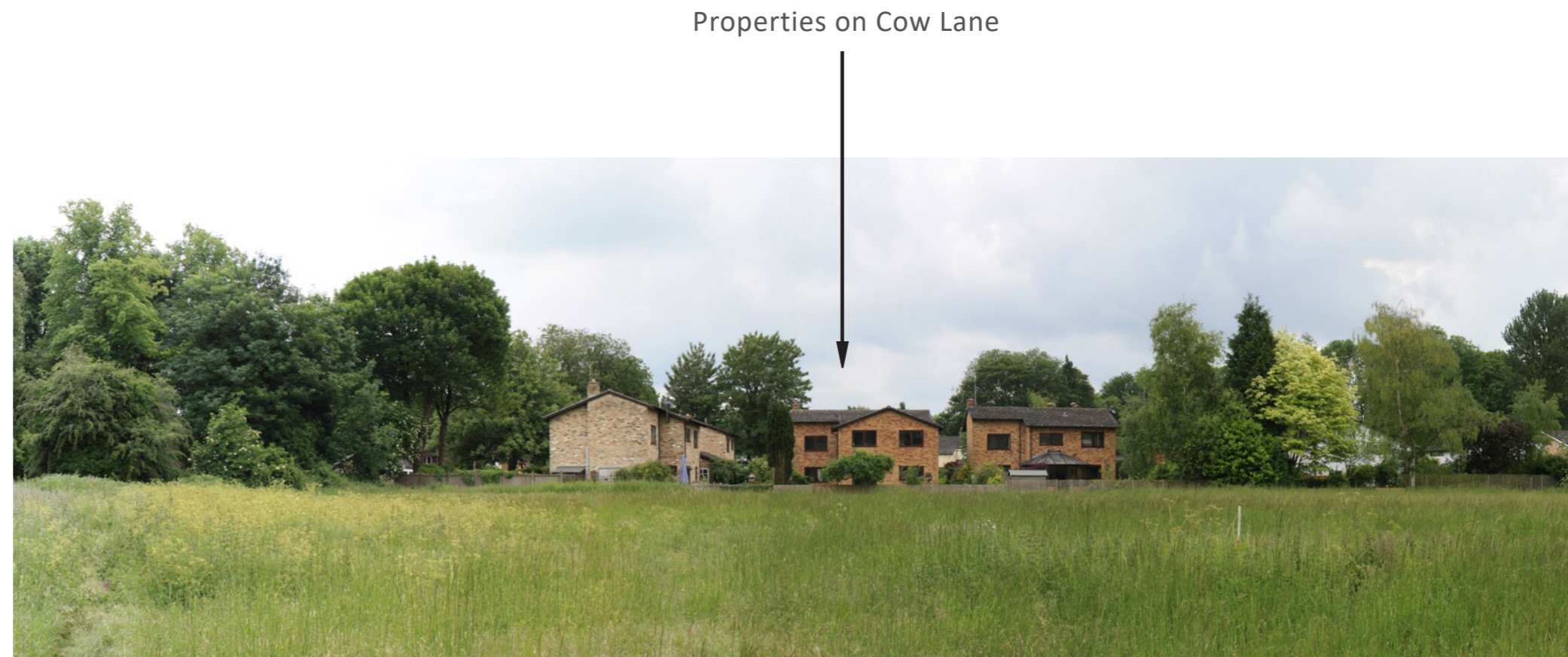


Figure 14. Views from the Site looking towards the Site Boundaries (Both Panarams)



Hedgerow between Fields



Poor Well Water

Hedgerow between Fields

Hedgerow along railway embankment





## 2.0 SITE CONTEXT contin.

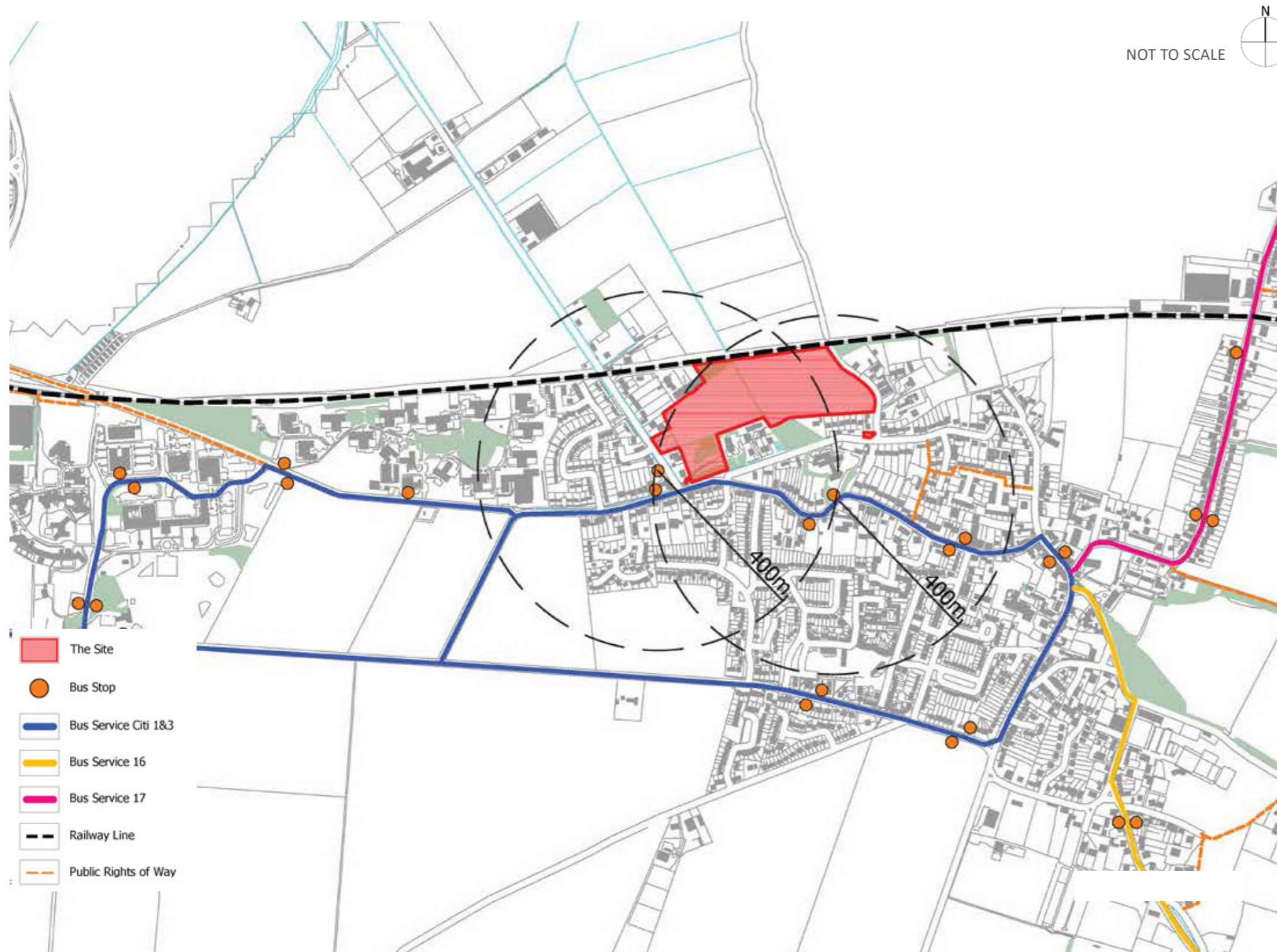


Figure 15. Movement Plan

## 2.6 LINKS AND TRANSPORT

### Access and Movement

The Site is well located in a range of existing movement and transport networks. Cambridge City Centre is approximately 8km from the Site, and the A11, A14 and M11 provide vehicular access to the wider surroundings.

### Public Transport

Given its rural location the Site offers reasonable access to sustainable transport opportunities, as shown on Figure 15. There are a number of bus stops served by Stagecoach within the recommended 400m walking distance from the Site which offer services to key areas in Cambridgeshire.

Although there is a railway line directly north of the Site, Fulbourn is not directly served by rail services since the station closed in 1967. However, non-car access to Cambridge station from Fulbourn (approximately 5.5km to the north-west) is available via the frequent Citi 1 bus service in 33 minutes and is also feasible by cycle.

### Pedestrian and Cycle Network

The pedestrian network in the immediate vicinity of the Site offers access to the village centre and other local facilities in Fulbourn.

PRoWs are limited within the vicinity of the Site. The only PRoW from which glimpsed views would be attained of the Proposed Development is PRoW 95/15, approximately 1.2km north-west of the Site.

Good cycle links connect Fulbourn to Cambridge, although some riding on the road is required from the Site.

## 2.7 LOCAL FACILITIES

Figure 17 shows the key facilities in the village, as described below:

### Education

- Fulbourn Primary School is located within 800m to the southeast of the Site.
- Cambridge Steiner School is an independent school located approximately 600m to the west of the Site and offers kindergartens for children between 3-6 years and primary education to children between 6-11 years.
- The closest secondary schools are the Netherhall School and St Bede's Inter-Church Comprehensive School in Cherry Hinton in Cambridge, both approximately 3.6km from the Site, and Bottisham Village College, approximately 8km to the north of Fulbourn.

### Retail & Community Facilities

- The Site is within walking distance from local shops and facilities in the village centre, including a Co-operative supermarket, butchers, chemist, post office, pub and church. Fulbourn library is at Haggis Gap, just southwest of the village centre. Fulbourn also benefits from a Tesco Superstore, which is situated approximately 1.7km to the west of the Site.
- Cambridge provides further retail and community facilities, which are easily accessible via good road links and public transport connections.

### Healthcare

- Fulbourn Health Centre is located approximately 650m to the southeast of the Site and accommodates 6 GP's.
- Fulbourn Hospital is a mental health facility located between Fulbourn and Cherry Hinton.
- The closest dental practice is situated in Cherry Hinton in southeast Cambridge, approximately 2.6km to the west of the Site.

### Employment Areas

- Employment opportunities in Fulbourn can predominantly be found at Capital Park to the west of the Site and in the village centre.
- Cambridge city and South Cambridgeshire also offer a range of employment opportunities, areas for Fulbourn residents include Cambridge City Centre area, Queen Edith including Addenbrookes, and Fulbourn ward itself.

### Recreation & Leisure

- Fulbourn recreation ground, approximately 1.3km to the southeast of the Site, offers a range of sports and play facilities. There are various public open spaces and woodlands around the village.
- Fulbourn Fen to the east of the village, is designated as a Site of Special Scientific Interest (SSCI) and it offers extensive recreational opportunities.
- Despite the green character of Fulbourn, public open spaces in the heart of the village are limited. The opening of the Pump House Garden and the creation of a meadow park could provide additional recreational opportunities in Fulbourn.

### Accessibility to Local Facilities

- Policy supports further development in Fulbourn recognising its ranking in the settlement hierarchy on the basis of infrastructure, facilities and accessibility to good public transport.
- Access to local facilities is good, with the village centre providing a range of local shops and services and a primary school. The nearby Tesco superstore is accessible by bus, cycle and on foot, as well as being within a short drive.
- Given the high likelihood that residents will be working within the Cambridge area, it is most likely that linked trips will be common and this makes better use of the available means of transport.



Figure 16. Fulbourn Village Sign



# 2.0 SITE CONTEXT contin.

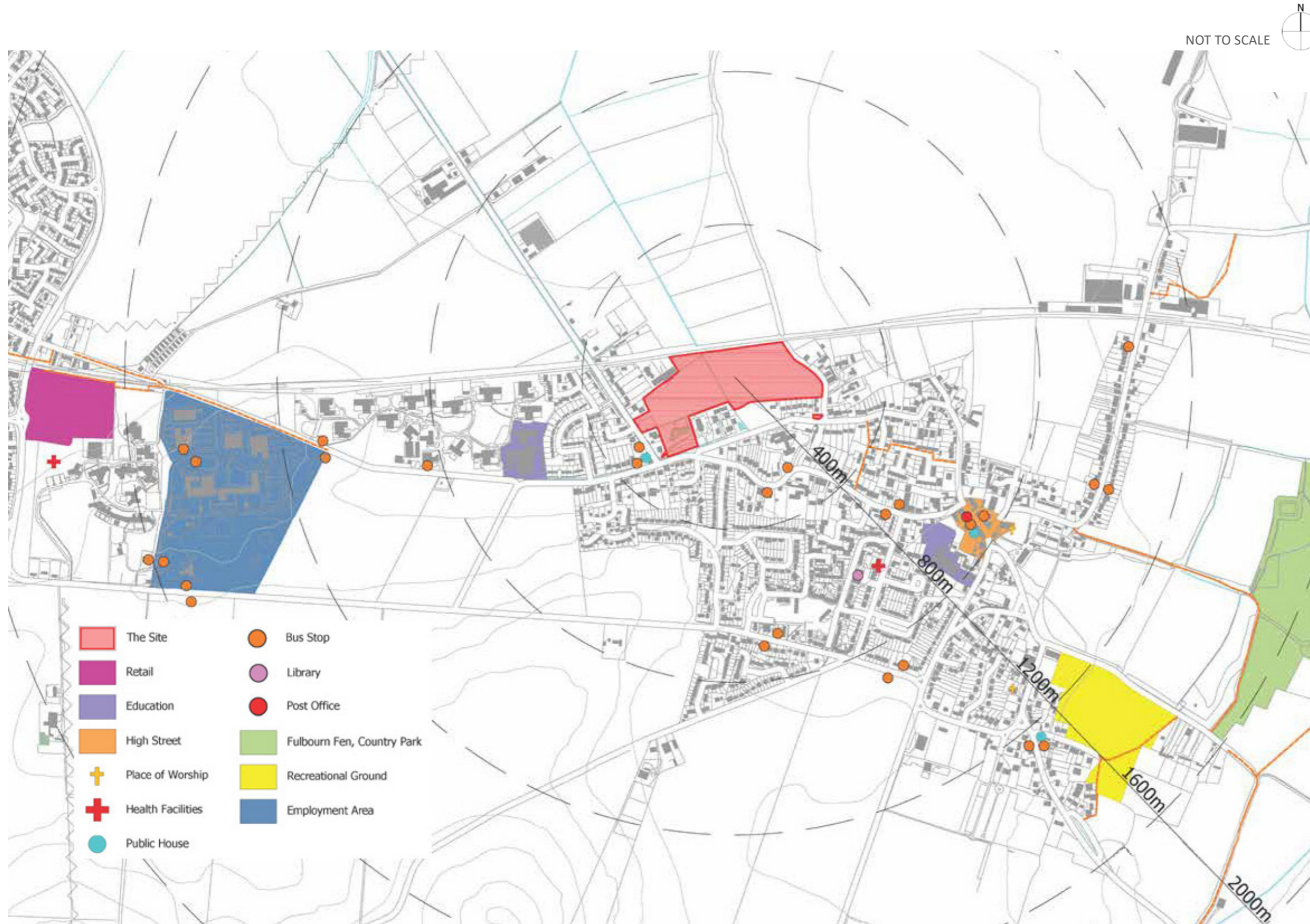


Figure 17. Location of Local Facilities

# 3. SITE CONSTRAINTS AND OPPORTUNITIES



## 3.0 SITE CONSTRAINTS AND OPPORTUNITIES

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As part of the comprehensive review of the Site, a series of existing site characteristics and resulting development constraints have been identified. These have been summarised and illustrated below.

### 3.1 TOPOGRAPHY

The Site is generally flat and slopes slightly inwards from the western and eastern boundaries to the central watercourse which flows generally northwards through the Site. Levels in the western part of the Site range from approximately 10.0m to 9.3m AOD and levels in the eastern part of the Site range from approximately 10.5m AOD to 9.3m AOD.

### 3.2 ACCESS

Vehicular access to the Site is currently taken in two locations, from Teversham Road and from Cox's Drove although these access points are gated and for agricultural vehicles only.

There is currently a low quality pedestrian access informally created across Poor Well Water onto the Site.

### 3.3 ARBORICULTURE

The proposals have been informed by a tree survey undertaken to BS5837:2012, which includes a differentiation of the tree stock into four quality grades (high, moderate, low and non-viable). The trees generally stand in strong linear and block features that frame and internally subdivide the Site.

### 3.4 SURFACE WATER DRAINAGE

#### Watercourses

The Site lies in Flood Zone 1 and is therefore not considered to be at risk of inundation from a tidal source or river with a catchment of more than 3km<sup>2</sup>.

There are three watercourses/ditches which run through/around the Site:

- The central watercourse which runs northwards through the Site, beneath the rail line and joins Cawdle Ditch some 1.3km to the north of the Site.
- The ditch along the southern boundary of the western section of the Site, which joins the central watercourse.
- The Teversham Road ditch runs northwards along Teversham Road and also joins Cawdle Ditch.

#### Surface Water




Surface Water runoff from the surrounding area (run-on) enters the Site via two potential pathways:

- Flows being routed along Cox's Drove tipping onto the Site at the south-eastern corner of the Site.
- Flows gathering in a low point on Cow Lane and tipping northwards (between the existing properties on Cow Lane) at a point adjacent the Cow Lane- Cox's Drove junction.

#### Ground Water

As the Site lies towards the base of a chalk hill, it is likely to be exposed to elevated groundwater levels. Ground water levels were investigated and it was concluded that groundwater flooding is not a significant threat to the proposed development.



-  Application Site Boundary (6.8ha)
-  Conservation Area
-  Green Belt
-  Existing Tree Canopy Outline
-  Root Protection Areas
-  Existing Roads
-  Existing Link
-  Existing Railway
-  Noise Caused by Existing Industrial Unit
-  Existing Significant Structures
-  Existing Surface Water Storage Area
-  Existing Water Features
-  Existing Bus Stops
-  Existing Landscape Structure
-  Opportunity for Vehicular Access
-  Opportunity for Pedestrian/Emergency Access
-  Existing Informal Pedestrian Links
-  Potential Pedestrian Links
-  Sensitive Edge
-  Development Framework
-  Existing Development

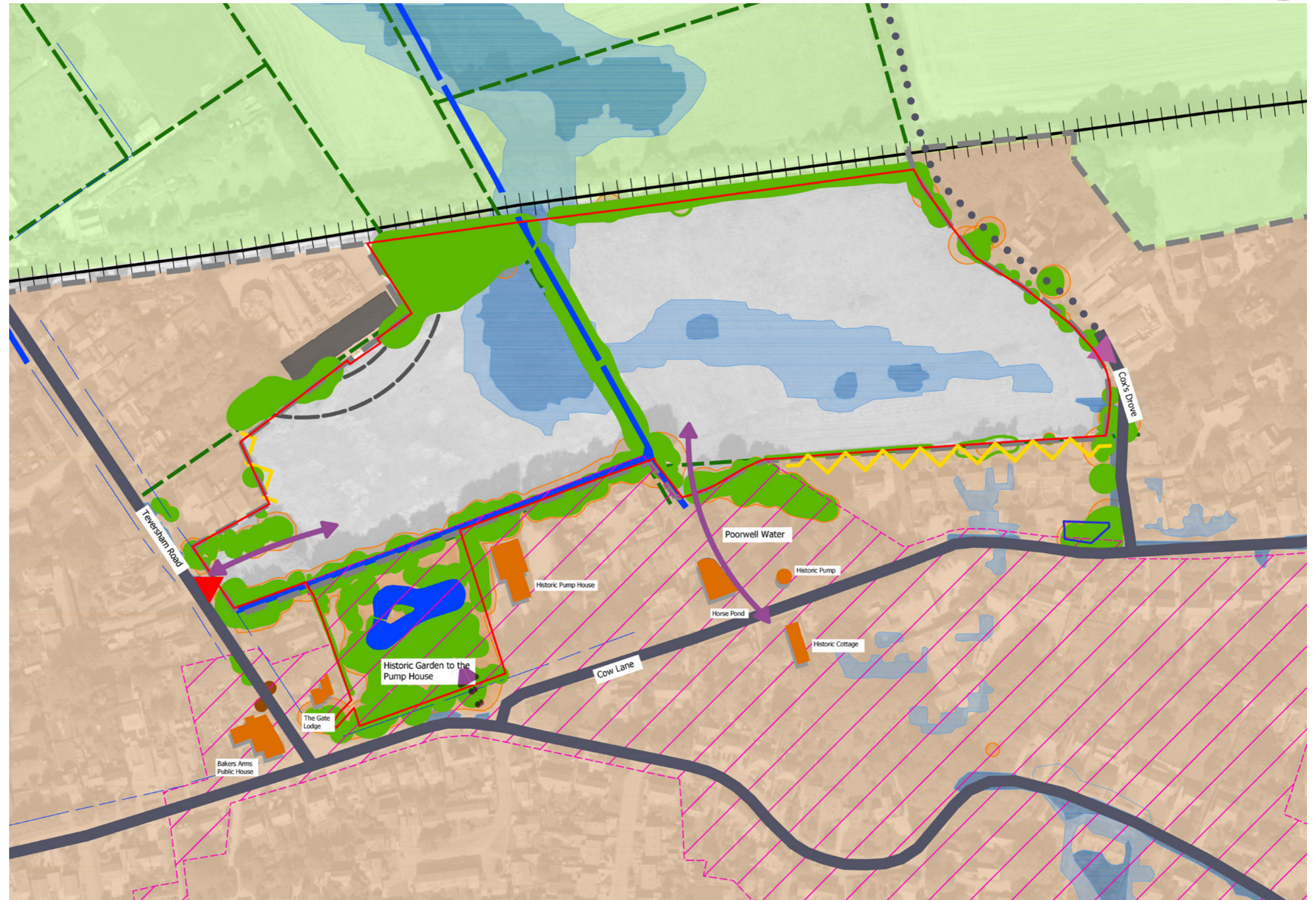


Figure 18. Site Constraints Plan



## 3.0 SITE CONSTRAINTS AND OPPORTUNITIES contin.

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### 3.5 NOISE

There are a couple of noise sources to consider on the Site, which are currently un-silenced. These have been identified through the Approved Outline process, as being the industrial unit to the north west and the railway line to the north east of the development.

An updated noise survey has been carried out and in liaison with the EHO, apartments have been designed adjacent the industrial area, which can satisfactorily be attenuated with fabric specification, (glazing, acoustic vents etc) and mechanical ventilation measures to allow ventilation without the need to open a window, not negating the ability to do so if the occupant should wish. Amenity spaces have also been designed the rear of buildings.

### 3.6 ECOLOGY

The Site is currently dominated by pasture grassland with five species of orchid recorded as well as adder's tongue fern. The Site is understood to originate from a historic hay meadow but is in poor condition following the cessation of traditional management. The layout of the scheme has been designed to retain higher quality areas of grassland and provide a permanent home for the key botanical species within the landscaping.

A small population of common lizard and grass snake have been confirmed on the Site – these will be excluded from the development Site during construction and new habitat created within the Site to support the population upon completion of the scheme.

Bats are known to use the Site for foraging and commuting – the scheme will retain dark flight corridors and create new roosting opportunities for these species. No bat roosting habitat is identified as being affected.

Nesting birds use a variety of habitats within and around the Site especially shrubs and trees – measures such as appropriate timing of works will ensure that nesting birds are not harmed during Site clearance and construction, and new nesting habitats will be created in the long term.

A chalk stream runs through the Site – this is a Priority Habitat and the scheme must retain and protect this feature.

Trees and shrubs occur around the Site boundaries, in a small woodland copse to the north and within the Pump House Gardens – these are important for a range of local wildlife species and will be protected and retained in the new development.

### 3.7 OPPORTUNITIES

#### Open Space

The Pump House Garden is currently private, but will be opened up to the village and connected to Meadow Park within the new development. The Site has a rich collection of features that will contribute to an attractive and high quality living environment. Together with this there is a real opportunity to offer a varied network of open spaces back to the village.

#### Heritage

Any built form is set back from the southern boundary of the Site including where the Pump House Garden meets the main body of the Site. In addition, mature tree planting would be retained to respect the heritage value of the Conservation Area and listed buildings in the vicinity of the Site.

#### Landscape

The peripheral structural landscape both screens and substantially encloses the Site, while the internal features direct and inspire the proposed residential layout.



# 4. DESIGN DEVELOPMENT



# 4.0 DESIGN DEVELOPMENT

## 4.1 OVERVIEW

This section describes how the scheme has developed from the initial concept masterplan to the detailed scheme applied for through consultation with the Local Authority and Public Consultation.



Figure 19. Indicative Outline Planning Layout

## 4.2 OUTLINE PLANNING APPLICATIONS, 2014 & 2017

Original Outline Application – S/2273/14/OL made in 2014 was refused. A subsequent appeal was dismissed in November 2016 not on any design, highways or delivery issues but on open space management.

A second outline application (S/0202/17/OL) was submitted to the Council in 2017 with revised Heads of Terms ensuring the open space issue was acceptable and it was approved in October 2017, with 29 planning conditions for up to 110 dwellings (77 market and 33 affordable units).

A number of drawings formed part of the approval, including the parameters plan Ref. 22430-M06 RevE.



### 4.3 PRE-APPLICATION, JANUARY 2019

A pre-application was submitted for up to 78 detached residential units and 7 separate apartment blocks in January 2019. The scheme provided some initial thoughts as to how the layout could look ahead of a more formal process. Written feedback was received dated 12 June 2019 expressing many concerns regarding the layout and design.

The concerns were as follows:-

- Site designed as two separate parts with no unity for the whole;
- Apartments within 50m noise exclusion zone;
- No sense of arrival;
- No way-finding vistas;
- Lack of variety of house typology;
- No clear access hierarchy;
- Streetscene dominated by car parking;
- Positioning, scale and massing not in keeping with the area and is too formal and urban;
- No integration of existing natural features for public amenity;
- No integration or links with the Village and Countryside beyond;
- LEAP location not central to housing areas for overlooking; and
- Loss of existing trees and retained open space for ecological requirements.

A new design team was established after the January 2019 Pre-Application and the design approach went back to the scheme parameters established in the Approved Outline application whilst addressing all the concerned previously raised by the Council.



Figure 20. Previously Pre-Application Proposal A437\_P\_010\_Draft January 2019



## 4.0 DESIGN DEVELOPMENT contin.

### 4.4 SCDC DESIGN WORKSHOP, JULY 2019

Following an assessment and evolution of the Approved Outline parameters and previous pre-applications, a revised scheme was submitted to SCDC's Design Workshop. The workshop was held on 22 July 2019 and included:

Katie Christodoulides – Principal Planning Officer  
 Dr. Bonnie Kwok – Principal Urban Design Officer  
 Tom Davies – Projects Officer (Urban Design)  
 Carol Newell – Landscape Officer  
 Miriam Hill – Trees Officer  
 Vikki Keppey – Highways Authority Development Management Engineer  
 Tracy Martin – Sustainability Officer  
 Nick Atkins – Environmental Health Officer  
 Charlotte Peet - Planning Officer (Observer)

The workshop was extremely positive and the points discussed were as follows:



Figure 21. LPA Design Workshop Sketch Scheme July 2019

#### Road Design and Layout

Guidance was provided as to minimum road widths for primary and secondary adoptable roads, shared surfaces, (serving up to 12no. dwellings) and private drives, (serving up to 6no. dwellings). This has been applied in the proposed layout and tracked accordingly with a 12.3m refuse vehicle.

Garages have been provided where appropriate with increased size to 3.3x7m to allow for the cycle and refuse accommodation where possible. Elsewhere, cycle and bin storage has been provided in line with SCDC policy via the provision of a secure shed within the rear garden area.

#### Environmental Health Matters (EHM)

Noise assessments carried out on the Site had recognised that the current noise source was a fan operation during normal working hours over the week days. The EHO confirmed the client acoustic consultant had been in discussion and was principally in agreement of the noise mitigation measures proposed for the apartments located to the northwest of the Site, subject to report. Mitigation measures proposed would be through windows, acoustic vents and mechanical ventilation. The railway noise was also considered within the assessment procedures and accordingly private amenity areas have generally been provided to rear elevations, so as to remain protected from noise levels.

#### Layout, Scale and Massing

The Council Design Officer was able to provide comments from Fulbourn Village Design Guide representative at the workshop. The proposed layout was seen a major improvement over that submitted at pre-app and recognised the principles set within the approved parameter plan, (for which any RM application will need to be based), were being adhered to.

This included the complicated drainage strategy and the need for the housing and roads to be raised by 500mm. The proposal of 2.5 storey dwellings raised some initial concern. However, it was noted the original approved outline allowed for 2.5 storey to the Central Meadows Area. The proposals were in line with this, with up to 4 dwellings and 2 apartment blocks at this height in order to frame the Central Meadows and provide good surveillance. The Urban design officer had no issue with this.

Other points to note from the meeting are:

- The Fulbourn Village Design Guide, written post approval of the Site, has been adhered to. It is worth noting views into the Site are restrictive from Poor Well Water due to the amount of existing cover which is to be retained. Nonetheless, working within the existing approved parameters, the buildings have been located as sensitively as possible;
- The western entrance has been provided with a prominent key building at the request of the urban design officer;
- Visitor parking has been removed and parking is at 2 spaces per unit;
- The building line to plots 87-110, facing the linear park have been varied as far as possible within the constraints of the approved parameters;
- Where possible all apartments have been provided with 1.5 x 2m balconies to first floor and above, 10m<sup>2</sup> of amenity space for ground floor apartment and 25m<sup>2</sup> communal space per apartment at ground floor. Where this is not completely possible the apartments are located to large areas of open space, (Blocks A and B);
- Landscaping and environmental comments have all been incorporated and respective reports and drawings form part of the application material; and
- Community, Connectivity, Character and Climate have been considered across the design proposals and has been covered in more detail in the following Design Development section.



## 4.5 PARISH COUNCIL PRESENTATION, AUGUST 2019

The proposed scheme was presented to Fulbourn Parish Council on 6 August 2019 to discuss the proposed development.

Comments back from the meeting included:

- Integrate existing aspects of Fulbourn into the scheme to develop an inclusive community;
- Introduction of Swift nesting boxes and the planting of fruit trees;
- Measures in place for maintenance of open areas and safety from the railway; and
- No direct connection from the site to Poor Well Water.



Figure 22. Conceptual Comments over Proposed Sketch Plan



## 4.0 DESIGN DEVELOPMENT contin.

### 4.6 DESIGN ENABLING PANEL, AUGUST 2019

A further revised scheme, taking on board comments from the design workshop and Parish Council was then presented to the design enabling panel on 8 August 2019. The panel consists of a group of local independent architects and designers, who assessed the proposals submitted on an advisory basis.

The presentation included work in progress site layout, street elevations as well as informal plans for the Pump House Garden.

#### The Panel raised the following queries:

- Secondary access to Cox's Drove.
- Amount of hard surfacing was questioned.
- Pedestrian access through Poor Well Water was suggested as being paramount.
- Pedestrian access through the Pump House Gardens to the Pump House.
- Affordable housing needs to be tenure blind and not provided with all apartments.
- Ensure the Chalk Stream is a main feature and selling point of the scheme.
- Provide a pedestrian link to the north east of the site onto Cox's Drove.
- Ensure a sense of place and reference to the Fulbourn Village design guide.

#### The design response to the panel's queries

- This is not possible due to assessment through the outline stage and was approved as an emergency access only.
- The roads have been designed to adoptable standards and to the requirements stated within the design workshop via the highways officer. Alternative arrangements would not be county compliant and would also be to the detriment of the ecology and drainage issues on the Site. It would also destroy the design principles of the Linear Park and Central Meadows, which are fundamental to the scheme design, character and sense of place.
- It was explained through the meeting with the Parish Council that this connection was strongly not desired and that the client has listened to the needs of the parish council.
- The scheme does allow for this access; however the existing gate is currently kept locked and is outside the control of the client.
- The scheme presented is in accordance with the Section 106 provisions.
- The scheme is fundamentally designed around the Central Meadows and Chalk stream. It should be noted that not all views are open views due to the existing landscaped nature of the site. However views are being created, (Wooded Avenue to Chalk Stream), framed and enhanced as much as possible with the design submitted for Reserved Matters and has in fact reduced back from the approved parameter areas for residential development around the Central Meadows area.
- Within the meeting when character was explained it was stated that the panel could see that Fulbourn character reference had been undertaken.



Figure 23. Proposed Sketch Plan, part of the presentation material shown to the Design Panel, August 2019

It was explained that the Site in front of the panel was subject to a Reserved Matters Application following the outline approval. In order for the RM to be registered, it must comply with the approved information within the outline. This includes the approved parameters plans and other documents. These were formalised via extremely complex issues, not only design, such as ecology and drainage. Many of the items raised by the panel have already had the opportunity to be commented upon and have been discussed and approved through the outline process. There are also a number of items raised which form direct conflict with SCDC officer's advice and the Parish Council desires.



# 5. DESIGN PROPOSALS



# 5.0 DESIGN PROPOSALS

## 5.1 Design Concept Principles

Reference has been made to the South Cambridgeshire District Design Guide SPD, 2010, The Fulbourn Village Design Guide SPA (FVDG), Consultation Draft April 2019 and the Fulbourn Conservation Area Draft 2007 for proposed developments set within the village boundary which sets out key design parameters to assist in establishing the design principles:-

### Access Points

- The Development is to be integrated into the Village.
- The Site is accessed from off Teversham Road utilising existing gap between in hedgerow.
- Smaller secondary access off Cox's Drove for emergency access only.
- There are pedestrian only access points proposed off Cow Lane and one off Cox's Grove; supporting pedestrian only route across the Site through open green areas.
- Key buildings located to form vistas through the Site aiding wayfinding.

### Key Spaces and Landscape Design Principles

- The central open green space incorporates and enhances the existing natural features, hedgerows and chalk waterways with a 'loop' of paths to provide improved pedestrian access / amenity.
- Amenity paths are to be low impact 'no-dig' solutions using permeable aggregate surface without edging to soften their appearance and mitigate impact on retained tree roots.
- Wooden 'boardwalk (or bridges)' to cross existing chalk waterways and new SuDS ditches and basins.
- Streetscapes will combine public landscape and private landscape frontages of hedges and mixed shrubs with intermittent trees to contribute to the richness of the rural style greenery.
- There is to be low level pedestrian lighting in accordanc with the FVDG SPA

### Block Structure

- Creation of perimeter block structure where space allows defining main movement corridors and integration of proposed development and existing landscape features.
- Maintain and enhance the existing rural landscape views out from the Village over the Greenbelt, an existing defining feature of Fulbourn.
- Community involvement and the collective desire to enhance the Village character and design with it's building styles, street patterns, public realm and housing mix, to retain and attract local employment.

### Character Areas

The FVDG SPA has identified a number of character areas within Fulbourn such as The High Street, Apthorpe Street, Hope End, Station Road, Poor Well, IDA Darwin Site, Fulbourn Hospital and Residential Areas.

The Site lies in the Poor Well character area which is partly in the Conservation Area, and has the waterways and wetlands around the Victorian buildings of the former Cambridge Water Company. The existing and proposed Site constraints and opportunities has led to the creation of three distinct frontages which have their own individual appearance and character to provide a sense of place-making:-

- Village Lanes
- Meadow Park
- Village Street

The overall design cue of the frontages has stemmed from the character areas of the surroundings.

### Movement

- Vehicular and pedestrian movement through the Site is considered as part of the character areas.
- Network to connect the Village core and community facilities.
- New streets are to be interconnected and wind linking into the older lanes. They are to be designed as pedestrian centred.
- The primary road which leads onto secondary roads terminated with a turning head. Off these are shared surfaces and private lanes.
- Carriageways are to be narrow and slow but to adoptable standards.
- Additional segregated pedestrian movement runs through the Site following natural shortcuts through the open green areas.

### Frontages and Key Vistas

- Frontage onto Teversham Road forms a visual link into the Site. The rhythm of built form is sympathetic to local architectural character.
- Frontage has been created to address the green spine running east/west through the Site.
- Open frontage onto the central Meadow Park.
- As a method of way finding around the Site, street views are set up with strategically located dwellings. These are located on key vistas.
- Open gateways with integrated landscape to reflect the historic open junctions of Fulbourn.



Figure 24. Open green Space with 'Meadow feel'



Figure 25. Maintaining and Enhancing Local Village Character



Figure 26. Pedestrian Friendly Site Access



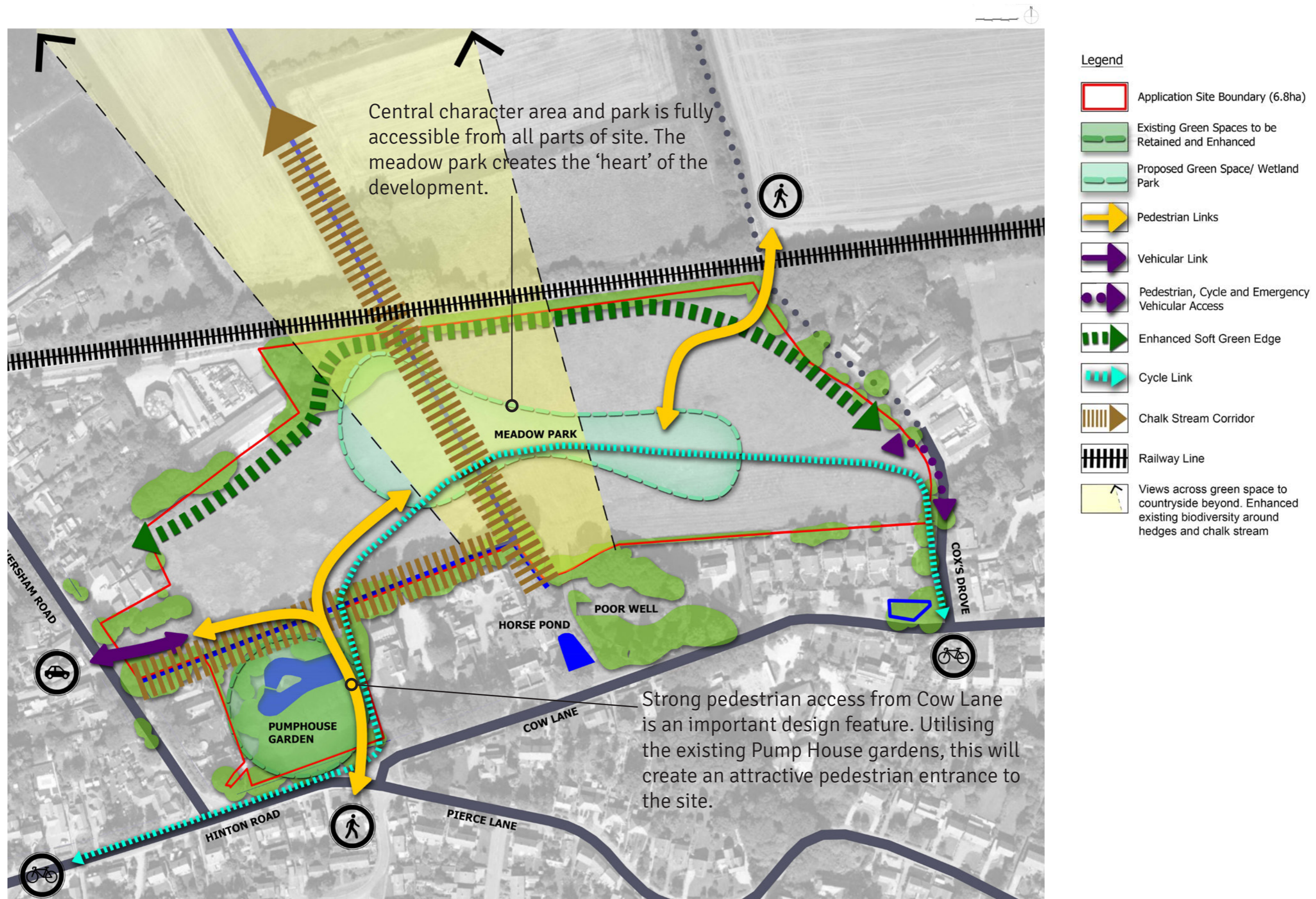


Figure 27. Conceptual Site Layout



## 5.0 DESIGN PROPOSALS contin.

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### 5.2 Layout

The plan, Figure 28 to the right, identifies the Reserved Matters layout. A printed A1 version of this plan will be submitted with this application. The layout has been evolved in accordance with the outline application principles, in collaboration with the LPA, with reference to The Fulbourn Village Design Guide SPD, April 2019, Fulbourn Conservation Area Draft Council Document 2007, The South Cambridgeshire District Design Guide SPD 2010; and designed by the following considerations:

- Acknowledging the local historic village character inbuilt grain and appearance with informally aligned buildings and soft planted edges at the interface of the countryside avoiding forming perimeter building blocks;
- Understanding the distinct character areas within Fulbourn and from these forming distinct character areas within the Site to aid in place-making;
- To establish open entrances, key vistas, and building framing to maintain local countryside views and provide way-finders within the development and reflect the character of the area.
- To improve pedestrian and cycling permeability through the Site and connecting to the village core;
- Integrated design, landscape and surface water attenuation approach, integrating into the existing chalk stream network and Pump House pond;
- To improve and enhance existing natural features within the Site and hence the ecology;
- Provide a new central meadow park for village community integration and involvement;
- Providing a green buffer between the Development and existing built up areas;
- Form the street network as a natural extension of the village with informal interconnecting streets, lanes and shared spaces to an Adoptable standard; and
- Sensitive treatment of public realm to include tall trees, hedges and boundary walls typical of Fulbourn.

### 5.3 General Character

- There is a clear distinction between public and private space within the development and the houses and their respective landscaping are intended to contribute to the character of the wider open space landscape;
- High quality surface materials are proposed to enhance public realm and encourage pedestrian activities. The soft landscaping treatment and tree planting is used to create an appropriate setting;
- Parking is predominately on-plot spaces. There is very little on-street parking and visitors will be encouraged to park on-plot to those they are visiting;
- Parking is to be incidental and minimal visual dominance on street frontage;
- Minimum distance of 25m is maintained between rear face elevations in order to achieve acceptable privacy levels for properties;
- Buildings face the public realm with front doors and/or windows to habitable rooms to maximise natural surveillance;
- All car park areas can be viewed from ground or upper floor windows;
- Provision of adequate space for refuse and recycling bins as well as accessibility to them is provided with designated pathways for access. Where bins are to be stored to the rear of the property, gated access is provided to the rear garden from the front of the property. Generally bins will be collected from the front of properties;
- Turning heads for service vehicles are integrated within the proposed roadways to avoid an over engineered appearance;
- Elevations to the public realm include bay windows, feature windows and/or entrances, avoiding long sections of blank walls;
- Key elevationally treated buildings are provided at junctions to aid in way-finding; and
- Building house types are to be varied and not repetitive. They are to have a range of variations in roof forms, window styles, architectural features and materials; and to be designed with coherent scale, massing and simplicity in detailing.





Figure 28. Proposed Site Layout Plan



## 5.0 DESIGN PROPOSALS contin.

### 5.4 Scale

The figure to the left provides an overview of the building height for the proposed development.

As can be seen, the majority of the height of buildings is 2 storeys with the exception of the apartments and 5 bed housing around the larger open green area of Meadow Park which are 2 1/2 storeys. The Fulbourn Village Design Guide SPA confirmed that 3 storey buildings, although not common within the village, can be considered if designed appropriately. However, it is considered this height is not appropriate on the Site.

Mostly at 2 storeys, the simple proposed building forms and features with an irregular building alignment and prominent roofline and have been kept to a scale appropriate to the character of Fulbourn.



Figure 29. Proposed Site Plan Showing Building Heights





Figure 30. Proposed Site Plan Showing Housing Mix

## 5.5 Use and Amount

The Fulbourn residents of all ages see their village as having a unique settlement of historic rural origin, with a strong relationship with the countryside and the farming community; with attractive buildings and rich nature. The proximity of Cambridge is valued, but also the individuality of the village as a good place to live, work and have friends which provides a strong sense of local community.

Within the FVDG, SPA, it has been emphasised that the community of Fulbourn has expressed clear views on the need for a housing mix which includes suitable dwellings for the elderly and for younger households.

The distribution of the land uses and their relationship has been derived from the contextual, opportunities and constraints analysis undertaken and upon the wishes of the community as a whole.

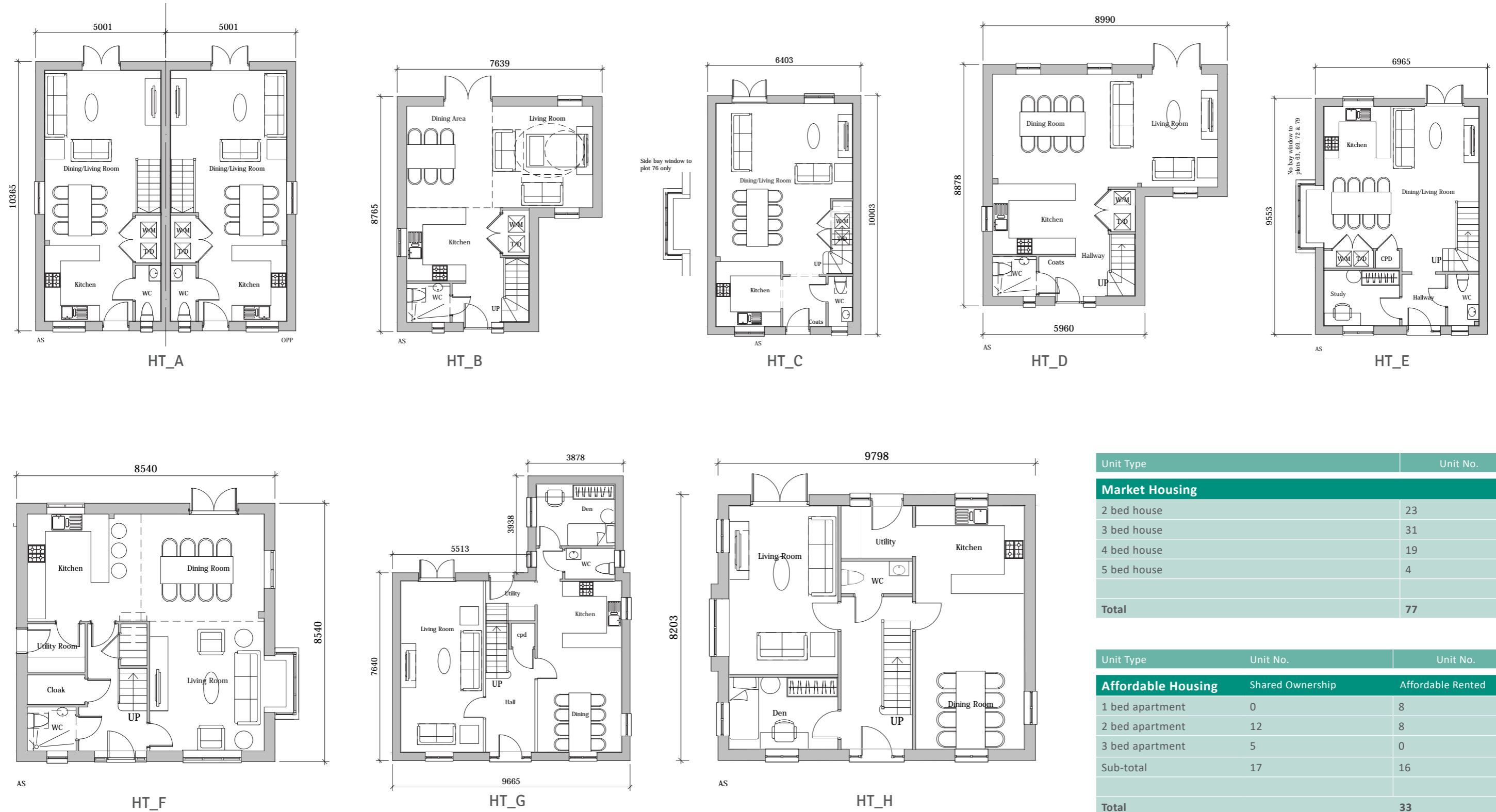
The RM application provides 110 residential dwellings of mixed sizes and a net density of 33 dph within the developed parts of the Site. Additionally we have provided 9 units to M4 (2) standards as indicated in Figure 30.

The scheme provides a mix of 2, 3, 4 & 5 bed houses including 1, 2 and 3-bed apartments.

In line with the outline planning permission 30% affordable residential units provided over a mix of 1, 2 and 3 bed flats in the form of shared ownership and social rented. The housing mix and accommodation schedule is set out in Figure 32. Their relative locations and type are shown in Figure 30.



# 5.0 DESIGN PROPOSALS contin.



Unit Type	Unit No.
<b>Market Housing</b>	
2 bed house	23
3 bed house	31
4 bed house	19
5 bed house	4
<b>Total</b>	<b>77</b>

Unit Type	Unit No.	Unit No.
<b>Affordable Housing</b>		
	Shared Ownership	Affordable Rented
1 bed apartment	0	8
2 bed apartment	12	8
3 bed apartment	5	0
Sub-total	17	16
<b>Total</b>		<b>33</b>

Figure 31. Proposed Housing Mix Plans

Figure 32. Accommodation Schedule





Figure 33. Site Plan Showing Proposed Building Material

## 5.6 Appearance

The FVDG SPA describes Fulbourn as having a distinct village character based around a rural and heritage setting, the varied environment of different houses arranged informally along traditional lanes and streets, and the tall trees of the English countryside. Buildings are typically simple: single blocks, steep roofs, rendered or brick-faced. Boundary walls of pale bricks and flint or thick boundary hedges are also common.

This is more clearly identified within the historic core of the village, which extends through three different character areas of Home End, High Street and Apthorpe Street/ Cow Lane. Other character areas display some of the same features, being Poor Well, Station Road, Ida Darwin Site, Fulbourn Hospital and the Residential Areas

The Site is within the Poor Well Character area which has links to the heritage of water management and fenland agriculture, and brings nature directly into the village. The tall trees and green aspect of Cow Lane is an important setting to protect along with the Victorian building of the former Cambridge Water Company.

The materials plan to the left indicates how materials and architectural detailing help define the different character areas.

Picking up on the above, three character areas have been identified within the Site as being:-

### Village Lanes Character Area

Adjacent Teversham Road and the primary access onto the Site, this area picks up on the variety of scale, building form and materials present within the historic character areas of High Street.

### Meadow Park Character Area:

As a variation to the general Poor Well character area, the residential units surround the large central open green space, framing the existing natural Site features, the chalk streams and hedging. It locates the larger apartment units which have been articulated and rendered to appear as individual units. All the units around the Meadow Park fringe are distinct and provide a 'sense of place'.

### Village Street Character Area

Towards the railway line and Cox's Drove, this area identifies with the Station Road character area and the different housing styles and appearance from the Victorian to recent times.



# 5.0 DESIGN PROPOSALS contin.

## 5.7 Character Frontages

### Village Lanes

This is the first area of housing upon entering the Site from Teversham Road.

Reference is made to the existing residential buildings along Teversham Road as well as picking up on the variety of scale, building form and materials present within the historic character areas of High Street, Apthorpe Street and Home End.

Narrow frontages with hedges or well defined walls onto shared street surfaces, diversity of building type but with uniformity of scale, simplicity of detailing and use of traditional materials. A variety of open eaves rooflines with cat slides down to single storey with chimney stacks within the centre of the ridgeline are key features along with window fenestration of traditional timber casement proportions. Cat slide porches and lean-to bays provide consistency in appearance.



Figure 34. Village Lane Location Plan



Figure 35. Village Lanes Frontage Elevations





Proctor and Matthews  
Cambridge Housing Community, 2015



High Street Fulbourn



High Street Fulbourn



Local Timber Boarding

Figure 36. Local Character and Precedent References

Typology aims to extend the Traditional Village character into the Site.  
Architectural detailing and scale form the threshold to Meadow Park.

Chimney stack, more characteristic of Lane typology



Plot 19  
House Type C

Plot 20  
House Type F

Plot 33  
House Type A

Plot 34  
House Type A

Plot 35  
House Type A

Plot 36  
House Type A

Plot 37  
House Type A

Plot 40  
House Type G



# 5.0 DESIGN PROPOSALS contin.

## 5.7 Character Frontages

### Village Lanes contin.

Details and materials can inspire very different perceptions when viewed, for example, stone walls can give an impression of strength and weight, and hence are very important in establishing a sense of place and architectural character within an area.

Buildings in Fulbourn have a variety of materials which mostly reflect the period when they were built. For the Village Lanes character area the building material proposed generally reflects the earlier period of buildings within Fulbourn. These are listed on the table to the right, which previously formed part of the Design and Access Statement to support the outline application.



Open Eaves



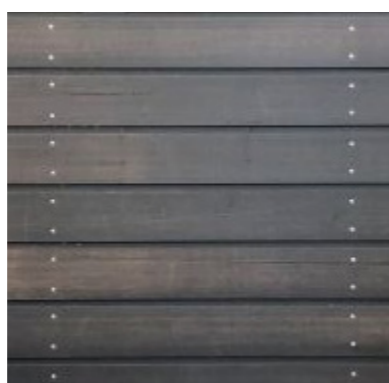
Pantile



Slate



Porch Detail



Black Timber Cladding

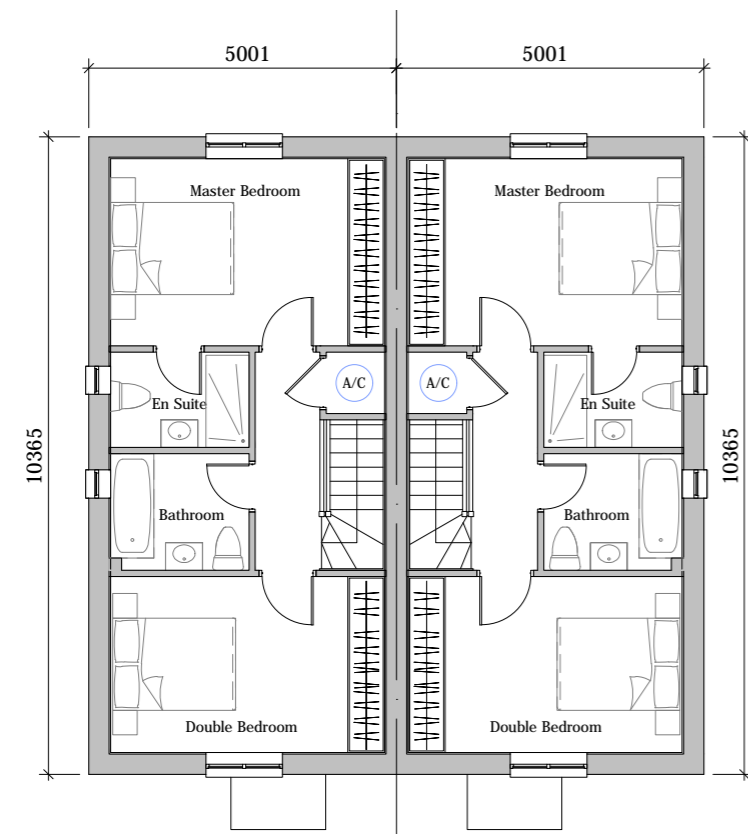


Cambridge Brick

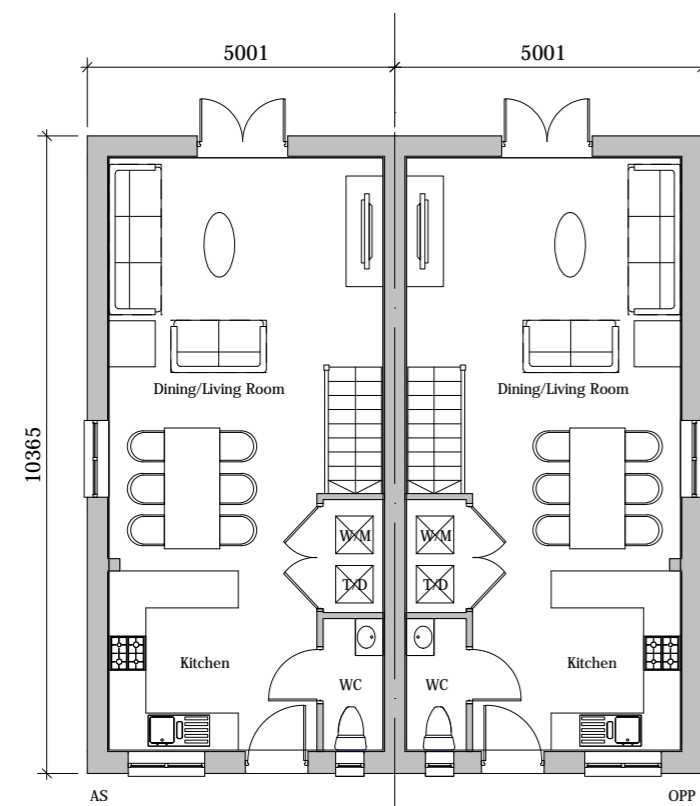
Figure 37. Typical Materials Palette

Characteristic	Description
Mix	2, 3 and 4-bed units 1 and 2 bed flats
Building Type	Short terraces, semi detached and detached dwellings with wider frontages
Storey Height	2 storey
Front Gardens	1.5m - 2m
Roofs	Mostly pantile with occasional slate. Open eaves with catslide
Elevations	Cambridge Brick with varying extents of dark timber cladding
Chimneys	Central in ridge
Porch/ Bay/ Dormer	Catslide or lean-too
Windows	Dark grey small timber casement
Ironmongery	Dark Grey





First Floor



Ground Floor



FRONT ELEVATION

Figure 38. House Type A - Plan and Elevation

Figure 39. House Type A - Street Elevation



# 5.0 DESIGN PROPOSALS contin.

## 5.7 Character Frontages

### Meadow Park

This housing sits around the new central green area, Meadow Park, which is subdivided by the chalk stream and mature hedge.

Reference is made to the variety of scale, building form and materials present within the historic character areas and in particular to the rendered buildings around Home End.

The buildings sit around Meadow Park with frontage directly into the open green space with minimum defined areas for defensive planting. There is a range of built form with simplicity of detailing and use of traditional materials. Open eave rooflines with chimney stacks within the centre of the ridge line on the gable are key features along with window fenestration of simple timber casement proportions with head and sill projections. Flat roof lead effect porches, bays and dormers provide consistency in appearance.



Figure 40. Meadow Park Location Plan

Flat lead-effect dormers and porches

Bay Window Features pick up the Key Elevations that overlook the Park

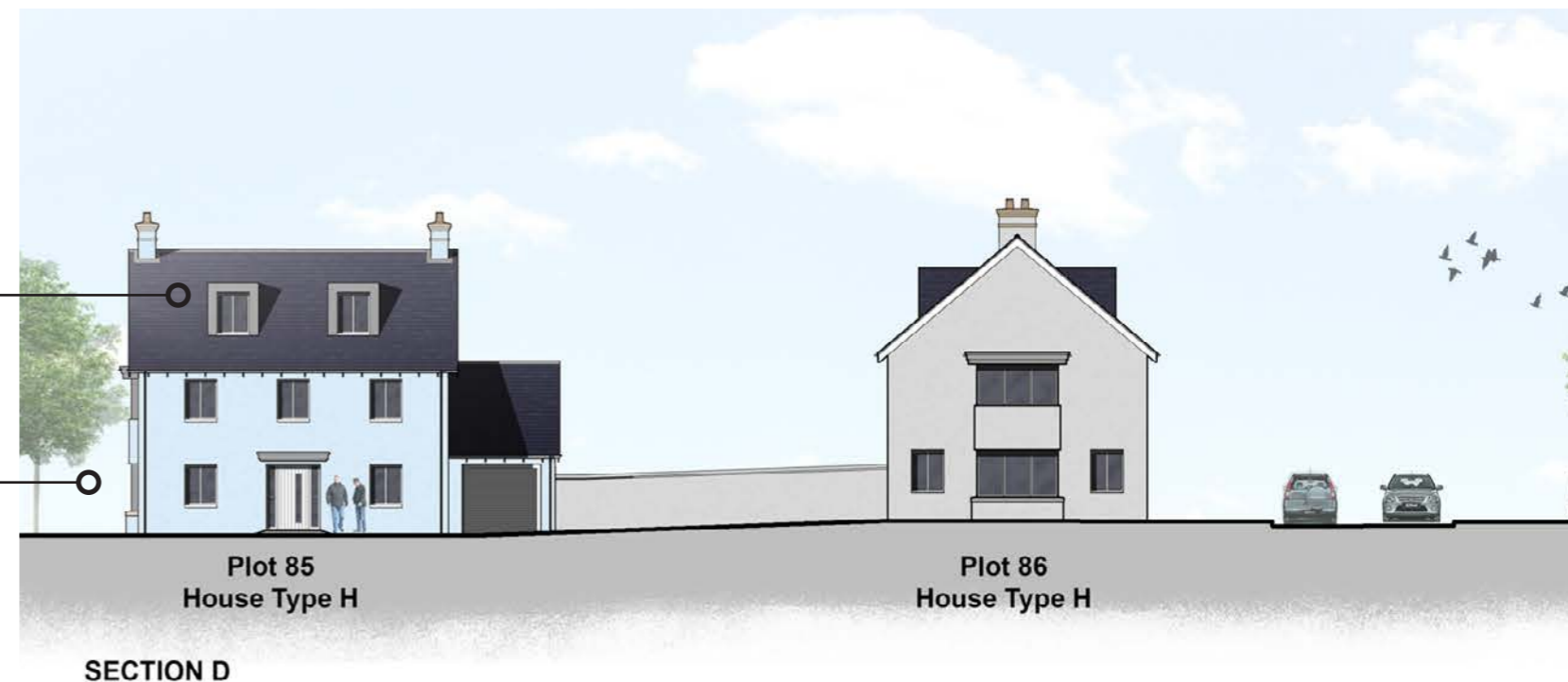


Figure 42. Meadow Park Frontage Elevations





Apthorpe Street, Fulborne Render



Pumping Station Architectural Verticality



Grand Housing on High Street



Precedent Reference

Figure 41. Local Character and Precedent References





## 5.0 DESIGN PROPOSALS contin.

### 5.7 Character Frontages

#### Meadow Park contin.

The buildings around Meadow Park are well spread out allowing open views of the countryside beyond. They also need to provide a framing effect for the open space and hence be bright and distinctive. Many of the historic buildings around Fulbourn are uniquely rendered in a range of light natural colours with the odd injection of pale blues, greens and pinks.

There are five proposed render colours in Meadow Park (pale grey, pale yellow, coffee, cream and pale blue) and the apartment blocks have been designed to be split into different coloured render units helping to reduce the massing and giving the appearance of terrace housing. All these colours are found within the Village centre.

For this character area the building materials proposed are listed on the table to the right.

The Meadow Part Character Area follows the guidance within the Village Design Code, which seeks to keep long views of the country side from Poor Well water. The proposal, whilst working within approval parameters, retains the green link north to south through the Site along the chalk stream.



Stipple Render



Render Colours



Bay Window



Slate



Open Eaves

Figure 43. Typical Materials Palette

Characteristic	Description
Mix	Larger 4 and 5-bed units 1, 2 and 3 bed flats
Building Type	Detached dwellings and apartments with active wider frontages
Storey Height	2-2½storey
Front Gardens	Minimal adjacent open space otherwise 2-3m
Roofs	Slate
Elevations	Pale render shades with Cambridge brick plinth
Chimneys	Central in ridge on gable
Porch/ Bay/ Dormer	lead -effect flat
Windows	Dark grey or white timber simple large casement
Ironmongery	Dark Grey or White



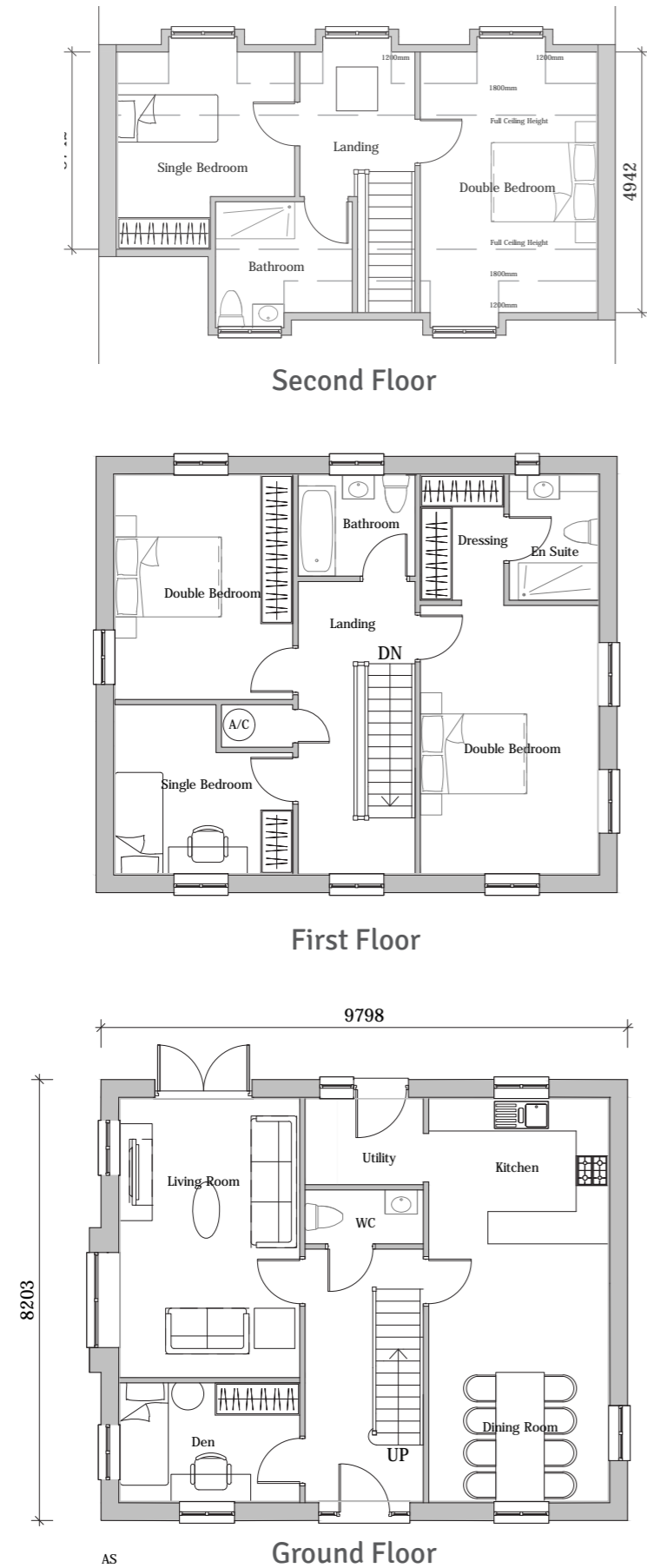


Figure 44. House Type H - Plan and Elevation



Figure 45. House Type H - Street Elevation



# 5.0 DESIGN PROPOSALS contin.

## 5.7 Character Frontages

### Village Streets

This area of housing sits towards the West of the Site and is bisected by the new Linear Park.

With a strong linearity presence within this area, architectural reference is made to the residential developments in Fulbourn post Industrialisation period, in particular, the late Victorian, Edwardian and the 1950's architectural languages which can be observed along Station Road, School Lane, Cambridge Road and Cow Lane. Attention to detail has been provided to ensure that there is variety of building types and when similar building types are used, they have different fenestration treatment and roofing material.

Housing lining the Linear Park have generous front gardens from 2 to 6m with a strong rhythm of gables to the road on the south side and a variety of house forms to the northern edge. Closed eaves rooflines with chimney stacks on the gable are key features along with tripartite window fenestration with reconstituted stone lintels and sill. Flat roof lead effect porches and hipped bays provide consistency in appearance.



Figure 46. Village Streets Location Plan



Figure 48. Village Street Frontage Elevations





High Street Gables, Fulbourn



Hinton Road, Fulbourn



Local Stone Heads and Sills



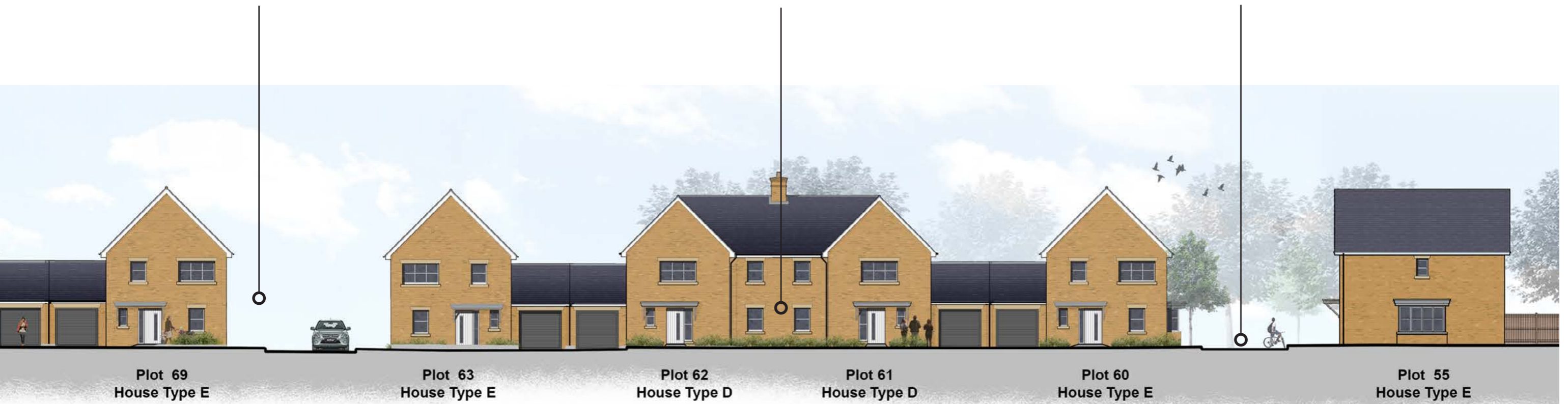
Appleton Grange

Figure 47. Local Character and Precedent References

Off street parking to create pedestrian/cyclist priority streets

Houses front onto shared green space

Shared surface for pedestrian friendly feel





# 5.0 DESIGN PROPOSALS contin.

## 5.7 Character Frontages

### Village Streets contin.

As the village streets frontage character covers the largest area on the Site and is bisected by the new Linear Park, there are subtle variations to the building forms both fronting the Park and to the rear. Where it does not change is with the wall materials and architectural detailing hence maintaining a distinct placemaking.

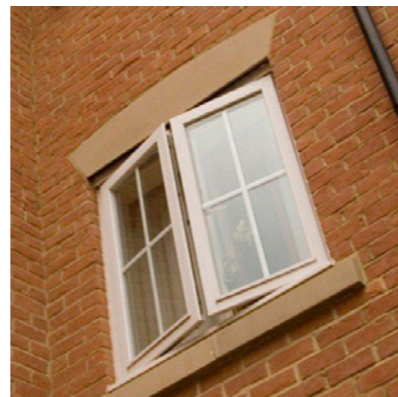
For this character area the building materials proposed are listed on the table to the right.



Cambridge Brick



Closed Eaves



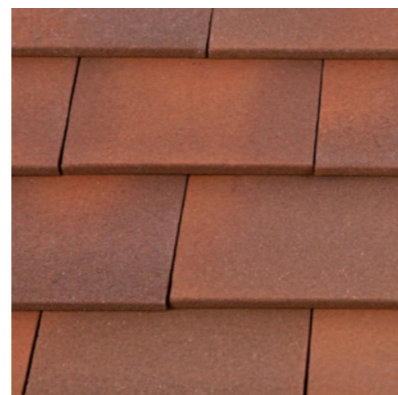
Window Detail



Pantile



Slate

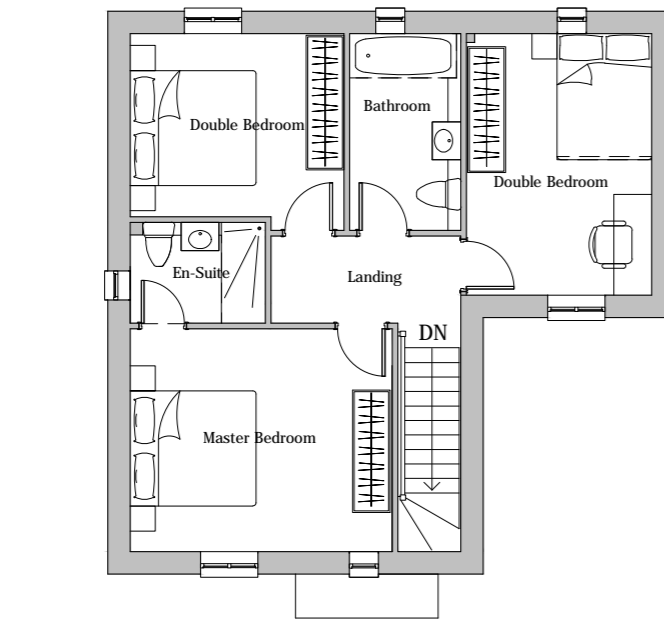


Plain Tile

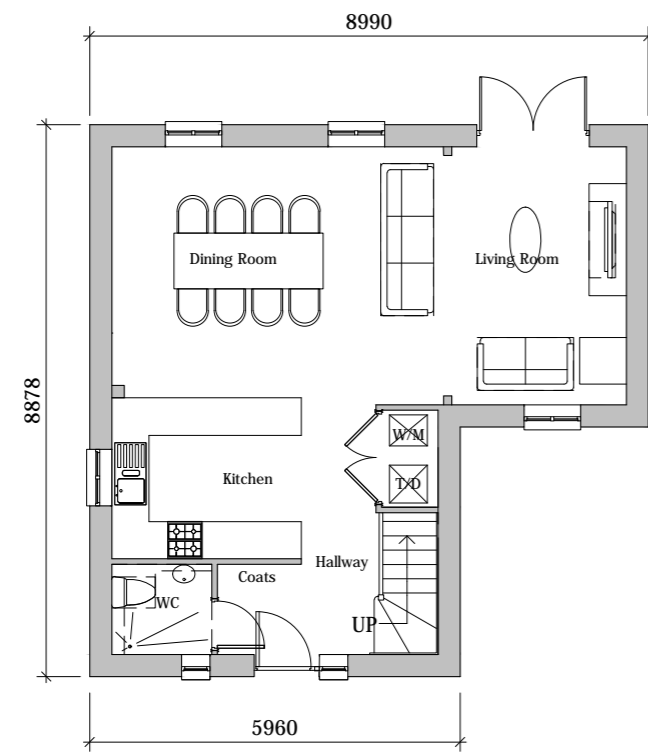
Characteristic	Description
Mix	2,3 and 4-bed units
Building Type	Terraced, semi-detached & detached dwellings with wider frontages
Storey Height	2-storey
Front Gardens	Generous to parkland 2-6m
Roofs	Slate, pantile mostly to rear & occasional plain tile
Elevations	Cambridge brick
Chimneys	Central in ridge on gable
Porch/ Bay/ Dormer	Lead-effect flat or hipped over bays
Windows	Dark grey or white tripartite timber casement
Ironmongery	Dark Grey or White

Figure 50. Typical Materials Palette





First Floor



Ground Floor

Figure 51. House Type D- Plan and Elevation



FRONT ELEVATION

Figure 52. House Type D - Street Elevation



# 5.0 DESIGN PROPOSALS contin.

## 5.8 Landscape Design Strategy

The design has been developed to integrate landscape, ecology and water resources to generate a strong landscape infrastructure that delivers the core principles set out for the development. The site benefits from a number of existing landscape features such as the existing chalk stream, the woodland areas, the Pump House Garden with existing pond, trees and hedgerows with ecological values, and open grasslands. Where possible the existing features have been incorporated and enhanced in the landscape proposals to ensure that the distinct character of the site is maintained. The landscape strategy is composed of the following landscape typologies (see figure).

**KEY**
















-  Application boundary
-  Existing Water Course
-  Vehicular access
-  Pedestrian/cycle access points
-  Pedestrian access point
-  Emergency access
-  Wide open views & green space towards the countryside
-  Existing Northern Woodland Area
-  Proposed Northern Boundary Buffer Planting
-  Meadow Park and Chalk stream
-  Formal Play Area (LEAP)
-  Linear Park
-  Perimeter Planting Areas
-  Pump House Garden
-  Proposed Built Area(house, roads, private gardens, etc.)



Figure 53. Landscape Typologies



## 5.8.1 Landscape Typologies

### NORTHERN BOUNDARY PLANTING

This proposed planting is located along the railway line towards the Northern boundary. It is an extension to the existing woodland which acts as a visual and noise buffer between the proposed housing scheme and the existing railway line. This proposed buffer will include a mix of native trees and shrub planting and form a part of the public accessible open spaces.



### MEADOW PARK AND CHALK STREAM

The Meadow Park at the heart of the development, provides recreational opportunities. It is divided into two parts due to the existing Chalk stream passing through the site. The western side of the park is mainly natural landscape retained for its ecological value. The eastern side has opportunities for recreation and play. Both parts of the park are connected by a network of footpaths and raised walkways which create attractive green routes throughout the year.



### FORMAL PLAY AREA

A local equipped play area (LEAP) is proposed in the heart of the development and is part of the public accessible open space. The LEAP is approximately 955 sqm and is a combination of raised deck and landscape areas. The play area caters for a wide range of age groups and features both proprietary and bespoke play features. The variation in landscape levels itself forms a part of proposed natural play experience.



### LINEAR PARK

Linear park is an extension to the meadow park with accessible public open spaces. Along with its ecological value, this park also provides opportunities for informal or incidental play areas. With well connected pathways from all directions, it is easily accessible from the proposed housing and other open spaces on the site. The informal play areas comprise of natural play elements such as boulders, stepping stones, planting and grass.



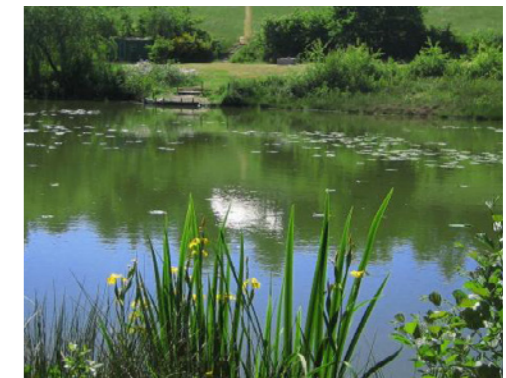
### PERIMETER PLANTING AREAS

The proposed boundary planting comprises of native tree and shrub planting at various locations of the site. The aim here is to thicken existing perimeter planting to provide visual or noise buffer. The perimeter planting areas have a proposed mown path access primarily for maintenance purpose.



### PUMP HOUSE GARDEN

The Pump House Garden, at the southern part of the site, lies within Fulbourn Conservation Area, which extends to the south of the site. A new pedestrian and cycle access is proposed from the south which will benefit both existing and new residents. The area around the pond will be restored, and poor-quality trees removed to address over-shading of the pond. The landscape proposal consists of some seating spaces overlooking the pond, new paths and a raised boardwalk through the existing tree cover. A number of fruit trees will provide a small community orchard.










## 5.8.2 Public Open space and play strategy

The network of existing and proposed green open spaces on site are broadly categorised into accessible public open space and other landscape areas. The accessible public open space includes the Meadow park (western and eastern fields), the Linear Park and the Pump House Garden. There are proposed formal and informal play opportunities for varied age groups spread across the site. The other landscape areas comprise mainly of existing vegetation, existing woodland, existing areas to be retained for its ecological value and the proposed boundary planting.



Figure 54. Public Open Space and Play Strategy

### KEY

-  Application Boundary
-  Accessible Public Open Space (Meadow park, Linear park, Formal & Informal Play areas, etc.)
-  Other Landscape Areas (proposal boundary planting, existing vegetation, existing woodland, etc.)
-  Local Equipped Area for Play (LEAP)
-  Informal Play



### a. Local Equipped Area for Play



1 Cradle Nest Special



2 Toddler Twin Swing



3 Stepping Stones



4 Slide



5 Wobble Dish



6 Logs



7 Large Spinner



8 Little Chicken



9 Small Hexagonal Hut with roof



10 Bespoke Timber Logs



11 Boulders



12 Bespoke Feature Play Area



13 Bespoke Feature Play Area





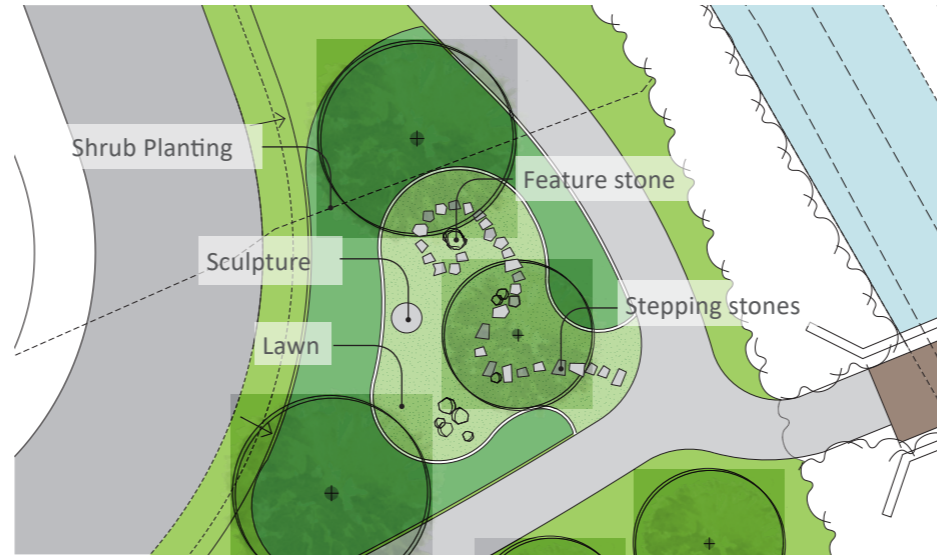
Figure 55. Local Equipped Area for Play (LEAP)



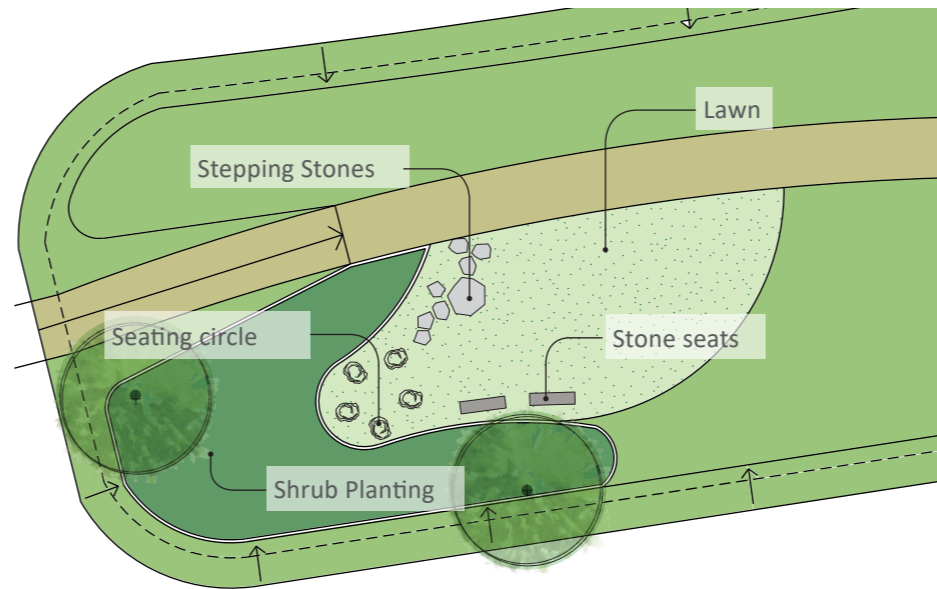
## b. Informal Play Areas



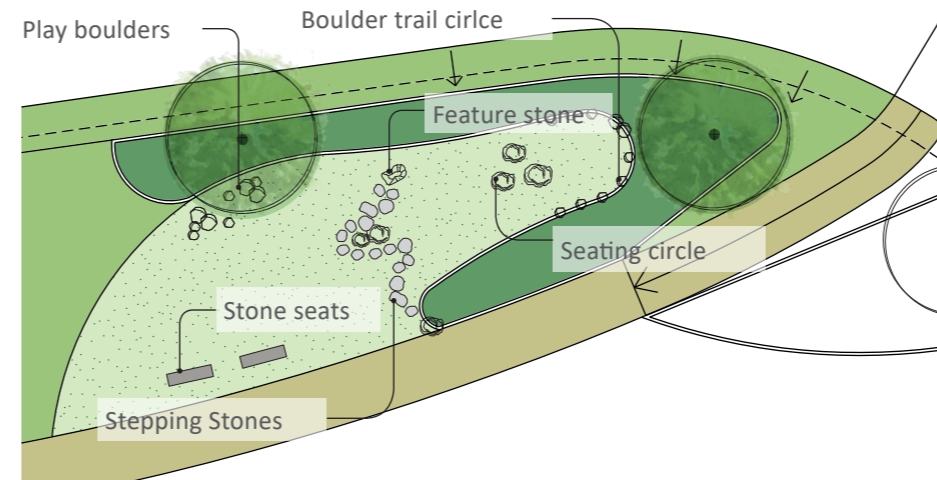
- KEY**
-  Local Equipped Area for Play (LEAP)
  -  Informal Play



Informal Play Area 1



Informal Play Area 2



Informal Play Area 3





### c. Public Open space - Pump House Garden

- Application Boundary
- Existing Trees
- + Proposed Trees
- 1 Existing Pond
- 2 Existing Timber Bridge to be Restored (for Maintenance Access only)
- 3 Existing Stone Edging to the Pond to be Restored
- 4 Existing Ditch to be Retained
- 5 Existing Path to be Retained
- 6 Proposed Breedon Path
- 7 Proposed Raised Timber Deck (Cycle/pedestrian bridge)
- 8 Proposed Seating Areas
- 9 Proposed Feature Planting
- 10 Proposed Wildflower Meadow (Potential Area for Translocation of Species on Site)
- 11 Proposed Raised Deck Access to adjoining area



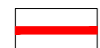
Figure 56. Pump House Garden














### 5.8.3 Hard Landscape strategy

The hard landscaping materials for the development have been carefully selected to complement the local context and to provide suitable paving surfaces that are fit for purpose. The materials are arranged to emphasise the hierarchy of public and private spaces across the site. Shared surfaces are proposed where vehicle routes cross the main public spaces giving pedestrian priority and providing a continuous public realm. Where necessary, hazard paving forms an integral part of the design rather than being an afterthought. Permeable paving has been introduced in places taking into consideration existing water table and drainage across the site.









 Site / Application Boundary


FINISHES

-  F1. Asphalt - Dark Grey
-  F2. Asphalt - Light Grey
-  F3. Permeable Concrete Block Paving - Autumn
-  F4. Concrete Paving
-  F5. Permeable Concrete Block Paving - Light Grey
-  F6. Permeable Concrete Block Paving - Harvest
-  F7. Brendon Gravel
-  F8. Hardwood Timber Decking with Anti-Slip
-  F9. Composite Decking - Grey Brown
-  F10. Safety Surfacing
-  Mown Paths

- UCR Pedestrian Crossing
- a. Concrete block paving, Size: 200 x 100 x 80 mm thick, Supplier: Aggregate Industries or similar approved, Product : Andover textured paving, Colour :Light grey.
  - b. Tactile paving slab, size 400 x 400 x 65mm thick, Supplier: Aggregate Industries or similar approved, Colour : Grey
- Proposed Granite Channels to Roads. Size 200 x 100 x 85mm thick, Supplier: Marshalls or similar approved, Colour: Dark grey
  - Proposed Kerb - To front of footpath 125mm upstand, Size: 145 x 255 x 915mm, Supplier: Marshalls or similar approved, Product: Conservation kerb, Colour: Charcoal
  - Proposed Edging - to back for footpath Concrete Edging, Size: 63 x 150 x 915 mm, Supplier: Marshalls or similar approved, Product: Conservation edging, Colour: Charcoal






BOUNDARY TREATMENT

-  Feature Brick Wall  
Min. 1.8 m high, 250 thick exposed brick wall and/or flint wall, 600 (L) x 280 (w), 50 thick concrete coping, concrete footing to Engineer's specifications
-  Fence Type 1 - Fence Between Houses  
Close board fence, 1.8m high, taper sawn, Timber support posts 125 x 100mm, 2.7 m long, with min 3 arris rails, 2.4 m c/c fixed in ground to Manufacturer's specification. Matching entrance gates to be installed where applicable
-  Fence Type 2 - Fence around Play Area  
1.1 m high, bow top railing (as per RoSPA guidelines), powder coated black, fixing as per manufactures details. Supplier : HERAS or similar approved, Product : Tangoraill TR800 play
-  Railing Type 1 - Metal Railing to Vehicular Bridge.  
Bespoke metal fence, 1.1 m high, Grade 316 Stainless Steel, Finish: Powder coated, Colour: Matt Black RAL9005
-  Railing Type 2 - Timber Railing to Deck and Boardwalk,  
Bespoke timber fence 1.10 m high. Posts at 2.4m c/c fixed in concrete.
-  Railing Type 3 - Knee Rails  
0.3 m high, 100 x 100mm treated softwood rails and posts fit with metal angle straps. Posts at 2.4m c/c fixed in concrete.

-  Play Area Gate  
1.1 m high, 1.2 m wide gate with self-closing mechanism (as per RoSPA guidelines), powder coated black. Supplier: Heras or similar approved, Product: Tangoraill TR800 play

- Movement of Hedgehogs  
Free movement of hedgehogs between private gardens and public open space to be facilitated through the provision of openings between them (130mm x 130mm) at ground level. To prevent residents from blocking up the openings inadvertently, discreet signage should be provided above the openings to identify the holes as 'hedgehog highways'.

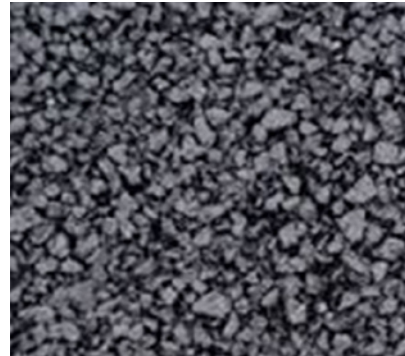
BRIDGES

-  Vehicular Bridge
-  Foot Bridge
-  Indicative location of control chamber to Engineer's details
-  Indicative location of below ground crates
-  Indicative location of headwall to Engineer's details



## Hard Material palette

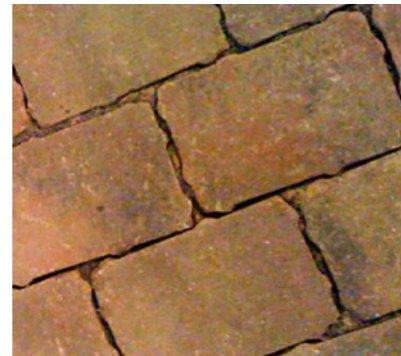
### Proposed Finishes



F1. Asphalt - Dark Grey



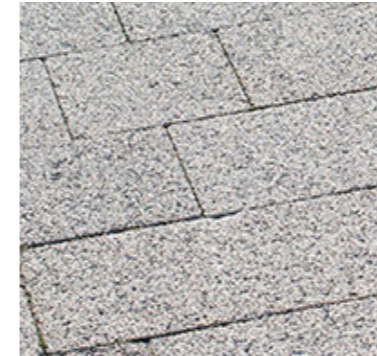
F2. Asphalt - Light Grey



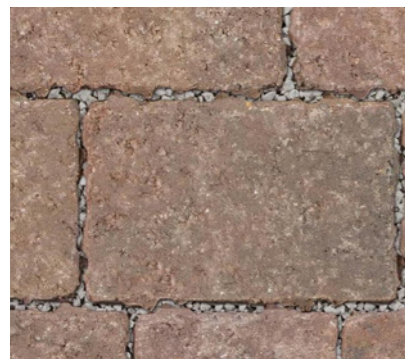
F3. Permeable Concrete Block Paving - Autumn



F4. Concrete Paving



F5. Permeable Concrete Block Paving - Light Grey



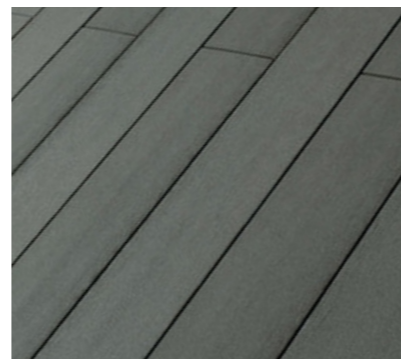
F6. Permeable Concrete Block Paving - Harvest



F7. Breendon Gravel



F8. Hardwood Timber Decking with Anti-Slip



F9. Composite Decking - Grey Brown

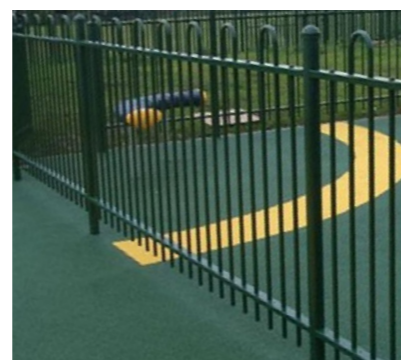
### Proposed Boundary Details



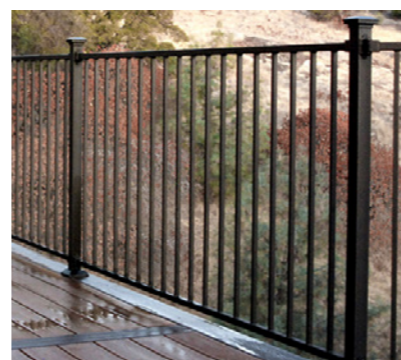
Feature Flint Wall



Close Board Fence



Play Area Fence



Metal Railing



Timber Railing



Knee Rail



Design Intent for Footbridges



Design Intent for Raised boardwalks



Design Intent for vehicular bridge



### 5.8.4 Planting strategy

The aim of the planting scheme is to provide a strong landscape structure for the Development that promotes its visual integration into the wider landscape context. The planting is differentiated for each of the landscape typologies of the development, promoting a rich variety of open space characters. It is selected to reflect the variety of open spaces use and the site conditions.

Trees are used to create a planting structure that is appropriate in scale to that of the proposed buildings and open spaces. Planting species are proposed to be predominantly native to ensure visual integration into the landscape context and to promote the creation of natural habitats. Ornamental planting, using species of value to wildlife where possible, is introduced in places where year-round interest and variety is of relevance.

The private front gardens offer additional opportunities for ornamental planting, adding interest and local distinctiveness to the development. The areas of amenity grassland and grassland verges aim to evoke the local open space character typically found in Fulbourn.

Where possible, significant existing planting is retained and integrated into the development to make an immediate positive visual and ecological contribution to the development following construction.



**KEY**

Site /Application boundary

**Planting strategy - Open spaces**

Existing vegetation

Existing trees to be retained

Proposed trees

Existing Woodland to be retained

Habitat retention/ translocation areas  
Grasslands/Scrub mosaic + log piles  
Hibernacula. Existing grassland/ scrub to be retained. For details refer to Reptile Mitigation Strategy report by ecologist.

Existing landscape retained  
Existing natural habitat/ grassland/ scrub to be retained. For details refer to Ecologist details.

Retained landscape with additional grassland/ scrub mosaic planting as required

Proposed Meadow  
Product: Emorsgate Seeds' EM2 standard general purpose meadow mix  
Supplier: Emorsgate seeds

Bio retention basins  
Product: Flora Aqua (70% Wildflowers and 30% Grasses)  
Supplier: Tillers Turf

Proposed native buffer planting  
• Blackthorn (*Prunus spinosa*)  
• Field maple (*Acer campestre*)  
• Goat willow (*Salix caprea*)  
• Hawthorn (*Crataegus monogyna*)  
• Holly (*Ilex aquifolium*)

Proposed native tree / shrub  
• *Cornus sanguinea*  
• *Corylus avellana*  
• *Crataegus monogyna*  
• *Euonymus europaeus*  
• *Ilex aquifolium*  
• *Ligustrum vulgare*  
• *Prunus spinosa*  
• *Rosa canina*  
• *Salix cinerea*

Proposed ornamental shrub planting /lawn (For Play areas and landscaped open spaces)

**HEDGE**

- Field maple (*Acer campestre*)
- Ninebark 'Diabolo' (*Physocarpus opulifolius 'Diabolo'*)
- Ninebark 'Luteus' (*Physocarpus opulifolius 'Luteus'*)
- Wilds privet (*Ligustrum vulgare*)

**SHRUB & HERBACEOUS**

- Corkscrew rush (*Juncus effusus*)
- Lavender (*Lavandula intermedia 'Grosso'*)
- Mock Orange (*Philadelphus coronarius*)
- Pachysandra terminalis 'Green Carpet' (Japanese spurge)
- Rose (*Rosa 'Canary Bird'*)
- Spindle (*Euonymus europaeus*)
- Yellow iris (*Iris pseudocorus*)

**LAWN**

- Lindum Festival Landscape Turf - LT7

Proposed aquatic / marginal planting

- Stream water crowfoot (*Ranunculus penicillatus*);
- Brook water crowfoot (*R. peltatus*);
- Watercress (*Nasturtium officinale*)
- Common Water-starwort (*Callitriche stagnalis*)
- Purple loosestrife (*Lythrum salicaria*)
- Hemp agrimony (*Eupatorium cannabinum*)
- Water forget-me-not (*Myosotis scorpioides*)
- Branched bur-reed (*Sparganium erectum*)
- Lesser water-parsnip (*Berula erecta*)

**Planting strategy - around built areas**

Proposed Road verges  
Product: Species Rich Lawn Turf  
Product code: WFT-Species-Rich-26  
Supplier: Wildflower Turf Ltd

Private Front gardens (Hedge, shrubs & lawn)

**HEDGE**

- Cherry Laurel 'Otto Luyken' (*Prunus laurocerasus 'Otto Luyken'*)
- Red Tip Photinia (*Photinia fraseri 'Red Robin'*)

**SHRUBS & HERBACEOUS**

- English lavender (*Lavandula angustifolia 'Hidcote'*)
- Garden Sage (*Salvia nemorosa 'May Night'*)
- Great wood-rush (*Luzula sylvatica*)
- Hebe Mrs Winder
- Purple cranesbill (*Geranium magnificum*)
- Yellow iris (*Iris pseudocorus*)

**LAWN**

Product: Premium grade turf

Indicative location of control chamber to Engineer's details

Indicative location of below ground crates

Indicative location of headwall to Engineer's details

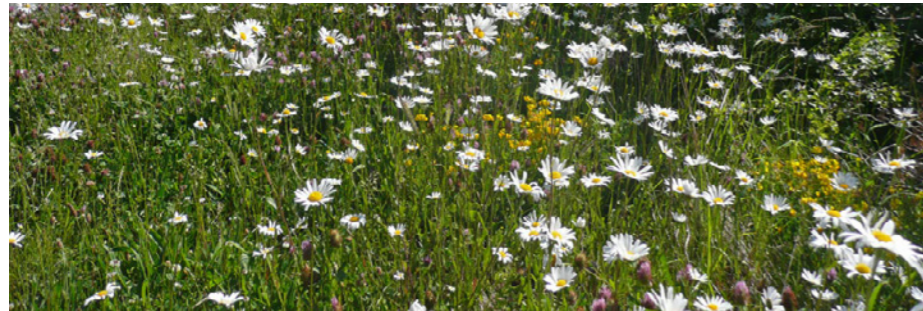
Existing Chalk Stream

Existing Pond



### Proposed meadow

Product: Emorsgate Seeds' EM2 standard general purpose meadow mix  
 Supplier: Emorsgate seeds



### Proposed grassland & scrub mosaic

#### SHRUBS & HERBACEOUS

- Hawthorn (*Crataegus monogyna*)
- Lady's mantle (*Alchemilla mollis*)
- Laurustinus (*Viburnum tinus*)
- Mock Orange (*Philadelphus coronarius*)
- Purpletop vervain (*Verbena bonariensis*)
- Smooth Hydrangea (*Hydrangea arborescens* 'Annabelle')
- Spindle (*Euonymus europaeus*)
- Wild privet (*Ligustrum vulgare*)

Bio retention basins within these areas to be planted with: Product: Flora Aqua (70% Wildflowers and 30% Grasses); Supplier: Tillers Turf



*Crataegus monogyna*  
(Common Hawthorn)

Mock Orange  
(*Philadelphus coronarius*)

*Verbena bonariensis*  
(Purpletop vervain)

### Proposed native buffer planting

- Blackthorn (*Prunus spinosa*)
- Hawthorn (*Crataegus monogyna*)
- Field maple (*Acer campestre*)
- Holly (*Ilex aquifolium*)
- Goat willow (*Salix caprea*)



*Prunus spinosa* (Blackthorn)  
*Acer campestre*  
(Field Maple)

*Ilex aquifolium*  
(Common holly)

### Proposed ornamental shrub planting/lawn (For Play area and landscaped open spaces)

#### SHRUBS & HERBACEOUS

- Field maple (*Acer campestre*)
- Ninebark 'Diabolo' (*Physocarpus opulifolius* 'Diabolo')
- Ninebark 'Luteus' (*Physocarpus opulifolius* 'Luteus')
- Wilds privet (*Ligustrum vulgare*)
- Corkscrew rush (*Juncus effusus*)
- Lavender (*Lavandula intermedia* 'Grosso')
- Mock Orange (*Philadelphus coronarius*)
- Pachysandra terminalis 'Green Carpet' (Japanese spurge)
- Rose (*Rosa* 'Canary Bird')
- Spindle (*Euonymus europaeus*)
- Yellow iris (*Iris pseudocorus*)

#### LAWN:

- Lindum Festival Landscape Turf - LT7



*Physocarpus opulifolius*  
'Diabolo' (Ninebark)

*Lavandula intermedia*  
'Grosso' (Lavender)

*Rosa* 'Canary Bird' (Rose)

### Planting strategy around built areas

#### Proposed Road verges

Product: Species Rich Lawn Turf; Product code : WFT-Species-Rich-26

Supplier : Wildflower Turf Ltd



#### Private Front gardens (Hedge, shrubs & lawn)

##### HEDGE

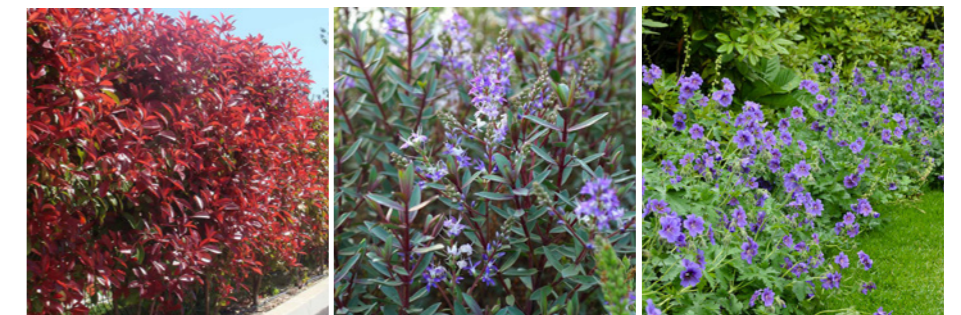
- Cherry Laurel 'Otto Luyken' (*Prunus laurocerasus* 'Otto Luyken')
- Red Tip Photinia (*Photinia fraseri* 'Red Robin')

##### SHRUBS & HERBACEOUS

- English lavender (*Lavandula angustifolia* 'Hidcote')
- Garden Sage (*Salvia nemorosa* 'May Night')
- Great wood-rush (*Luzula sylvatica*)
- Hebe Mrs Winder
- Purple cranesbill (*Geranium magnificum*)
- Yellow iris (*Iris pseudocorus*)

##### LAWN

Product: Premium grade turf



*Photinia fraseri* 'Red Robin'  
(Red Tip photinia)

Hebe Mrs Winder

*Geranium magnificum*  
(Purple cranesbill)



## 5.0 DESIGN PROPOSALS *contin.*

### 5.9 Ecology

The most ecologically important feature of the Site is the historic hay meadow habitat which is in poor condition. Where possible, the layout will allow this grassland to remain in place and a programme of ecological management based on traditional techniques will improve its condition. This management plan is proposed in perpetuity to preserve, enhance and restore the condition of the retained grassland over time. Where important species such as orchids (five species have been recorded on site), occur within the development footprint, they will be translocated, using cut turves, to receptor sites in retained habitat, thus retaining these populations within the Site. Additional species targeted for translocation, where necessary, are those which are identified as 'Strong Grassland Indicators' in the Local Wildlife Site (LWS) Selection Criteria. Board walks will be installed to allow controlled access over the more ecologically valuable retained grasslands.

The Chalk Stream which runs through the Site is a Priority Habitat, but its condition is poor following historic canalisation which takes away the natural meanders and other characteristics of a natural stream. The banks have become heavily shaded over time so that little light reaches the stream and no aquatic vegetation is found. The scheme will open up the stream corridor by carefully selected vegetation removal which aims to balance the retention of shrubs and trees, and their associated ecological functions, with the enhancement of the stream itself. The course will be modified to create a channel with varied width, depth and flow rate and more naturalised bank structure to encourage the stream to develop a natural route through the channel, creating a variety of conditions which will allow aquatic plants and invertebrates to flourish.

Bioretention basins around the edges of the Site are an important part of the drainage scheme, but also offer an opportunity for translocation of suitable grassland turves or ecological enhancement with new wetland wildflower planting.

Existing trees and hedgerows will be retained and protected during development, with the exception of small areas of tree removal required to facilitate the layout such as the access road; to enhance habitats such as the Pump House Gardens, northern woodland and the Chalk Stream; or where there are safety concerns with a tree in poor condition. New tree planting within the development will offset the minor scale of tree removal proposed, and the in-fill and buffer planting of existing hedgerows especially along the northern and eastern boundaries will ensure a net gain in terms of tree and shrub cover within the final scheme.

The woodland to the north of the Site is densely shaded with little light penetration and poor ground flora. Targeted management including selective thinning and coppicing will create a range of vegetation structures within the woodland and open up the canopy to allow woodland ground flora to develop. Arisings will be stacked as log piles, brash piles and complete trunks to create deadwood habitat for invertebrates and a valuable space of refuge and shelter for reptiles.

The Pump House Gardens will be restored as an amenity space for residents of Fulbourn and the new development to enjoy; however there will also be ecological enhancements in this area such as the enhancement of the pond; creation of new refugia and hibernacula for reptiles; and planting of fruit trees which will benefit local bird and mammal populations.

The reptile populations on the Site will be translocated to the northern boundary and temporarily excluded from the Site to allow works to take place. Following the completion of works they will be allowed to re-colonise the Site from this habitat. New measures to enhance the Site for reptiles will include the creation of hibernacula, refugia and new hunting/foraging habitats. The enhancement of the Chalk Stream and the pond in the Pump House Gardens are anticipated to significantly benefit grass snakes in particular.

Nesting birds will be accommodated through the retention of the majority of trees and shrubs, and the planting of new trees and shrubs to create additional nesting habitat in the long term. Nest boxes will be installed on retained trees and swift boxes incorporated into the eaves of new houses.

The existing use of the Site as flight lines for commuting bats will be maintained with the retention of dark corridors around tree and shrub lines. Habitats around the Chalk Stream and the Pump House Gardens will be improved to increase their suitability for use by foraging bats, and new roosting habitats will be created through the installation of bat boxes on retained trees.



Figure 57. Common European Frog



# 6. ACCESS



## 6.0 ACCESS

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### 6.1 Overview

The access and movement strategy for the Site has been developed in line with The South Cambridgeshire Design Guide, The Fulborn Village Design Guide SPD, as well as national best practice design guidance set out in Manual for Streets. This encourages sustainable transport provision to address the negative impacts associated with traffic generated by new development.

### 6.2 Main Site Access

It is proposed to provide a priority junction with a ghost right-turn lane from Teversham Road for vehicular access. This junction will facilitate the majority of vehicular movements to and from the Site.

There is a secondary access off Cox's Drove to provide servings, refuse and emergency vehicular permeability through the Site in forward gear.

It is also proposed to provide additional pedestrian/cycle access points, including an access from Cow Lane via the Pump House Garden, and off Cox's Drove. These access points will provide connections through to the village from the Site.

### 6.3 Public Transport

The existing bus stops located less than 400m from the Site on Hinton Road provide access to the thirty minute services Citi 1 and Citi 3. These services provide routes into the major local employment destinations such as Capitol Park, ARM, Addenbrookes and the city centre. They also provide routes to Cambridge Station, retail destinations such as Tesco and Cambridge.

### 6.4 Vehicular Network

Vehicular movement within the development will be accommodated through a simple network of interconnected streets.

A hierarchy of streets is proposed as described in Figure 54. Streets will be designed to a maximum of 20 mph speeds, which will be reinforced through traffic management measures.

Carriageways have been kept as narrow as possible to still satisfy the SCDC adoptable highway standards. Detailed design attention of the pedestrian and cycling links has given to encourage walking and cycling.

### 6.5 Traffic Calming

The primary method of traffic calming will be in the design and alignment of roads reinforced by building form, landscape and public realm treatments will ensure that the design traffic speeds are maintained. Other suitable methods include:

- Key spaces with changes in surface treatment and landscape measures; and
- Road alignment with tighter bends.

All measures will be fully integrated with building form, landscape and public realm treatments.

By designing in order to encourage low vehicle speeds will add to the 'sense of place' rather than allowing highway features to dictate the character of the street.





Figure 58. Movement and Access Plan



# 6.0 ACCESS contin.

## 6.6 Pedestrian and Cycle Network

The internal layout has been designed to ensure pedestrian and cyclist movement is prioritised, with a combination of shared surface and segregated footways provided. As illustrated, there will be a central pedestrian route that will promote movement in a northeast/southwest direction.

Situated at the centre of the development is a large area of green amenity space for residents that will provide connectivity along pedestrian desire lines, as well as encouraging the integration between residents and their surroundings by maximising accessibility.

Further south of the Site the primary footway will bifurcate providing access to each area of the development, with raised tables provided at transitions to areas of shared space.



Figure 59. Pedestrian, Cycle Access and Circulation





### 6.7 Refuse Strategy

The majority of the properties are provided with secure storage of bins and recycling located in rear gardens. Direct street access through garden gates is provided to move bins on collection days.

The apartment blocks have integrated bin storage on the ground floor for local council collection with the exception of Block C1 which has a designated storage facility next to the highway and within close proximity to the Blocks main entrance.

The refuse strategy approach ensures safe and convenient storage within a close proximity to the highway, allowing for refuse collection to take place at the roadside and prevents the ad-hoc storage of bins on the pavement. Refuse vehicular movement sweeps have been shown on the Refuse Strategy Plan to the left.

Figure 60. Refuse Strategy Plan



## 6.0 ACCESS contin.

### 6.8 Car Parking

Parking will be provided in accordance with the emerging Local Plan policy 'TI/3 Parking Provision', which exceeds the adopted policy 'TR/2 Car and Cycle Parking Standards'.

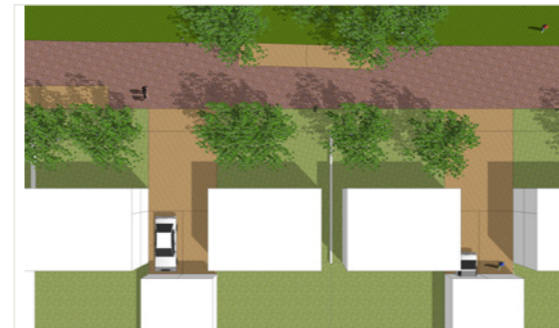
Parking will be provided as follows:

- 2 car parking spaces per dwelling - 1 space to be allocated within the curtilage
- 1 bicycle space per bedroom

Parking will be primarily provided with a combination of off-street private driveways or garages for the houses, whilst parking for the apartment blocks will be situated within off-street parking courts, with allocated parking.

As in accordance with the FVDG SPA, on the whole, parking provision has been located on-plot between housing or hidden behind apartment blocks to ensure that it does not visually dominate the streetscene.

Cycle parking is provided through a combination of dedicated cycle stores for the apartments and on-plot cycle storage for the houses, either within a dedicated cycle store or within the garages, which have been designed to the suitable dimensions of 7m depth.



#### Detached Garage

Garage is located to side of house, giving indirect access to dwelling. May be paired with neighbour

Allocated



#### Attached Garage

Garage is located to side of house, giving access to dwelling. May be paired with neighbour

Allocated



#### Integral Garage

Garaging within footprint of residential block gives access to dwelling, accommodation continues above and around

Allocated



#### Rear Court

Grouped surface parking around shared court, accessed between properties.

Spaces are allocated to dwellings and is designed to serve only a small number of dwellings.

Allocated

### Car Parking Design Principles



# 7. ENVIRONMENTAL SUSTAINABILITY



# 7.0 ENVIRONMENTAL SUSTAINABILITY

## 7.1 Overview

Climate change mitigation and adaptation measures have been considered in the design of the proposal. This section of the DAS identifies a number of design principles which should be addressed at the Reserved Matters stage as below.

## 7.2 Flood Risk

The Site is generally flat and lies at a lower level than the majority of Fulbourn, causing a risk of flooding from surface water run-off from the surrounding development.

The proposed development will be constructed on three raised development platforms. These will help to maintain space within the Site boundary for any overland flow which might be generated from the land to the south during periods of intense rainfall. Raising the proposed plots to create floodable areas of the Site will help to protect the houses and avoid displacing floodwater.

## 7.3 Surface Water Management

The proposed detailed strategy comprises five sub-catchments managing runoff from the three development parcels. There are three attenuation facilities in the eastern part of the Site which comprise both sub-base replacement crates (beneath permeable paving) and bio-retention basins. The attenuation facilities for the western part of the Site drains to attenuation crates below permeable paving.

Runoff from the primary road will drain via a grassed filter drain and channel/aqueduct to the existing pond in the Pump House Garden. It is worth noting that as well as allowing for more of the existing plant life to be left in situ, increasing the flow of clean water to the Pump House Garden pond should compliment the proposals to improve the amenity value and interest of the pond and garden.

Each facility includes sufficient surface water attenuation that will be provided to manage the 1 in 100 annual probability storm inclusive of 40 % climate change.

### Treatment

Suitable treatment for runoff will be provided by the permeable paving which will accept direct rainfall and some flow from adjacent impermeable surfaces. The primary road runoff in the east of the Site will be conveyed to either the bio-retention basins or channel drains running along the private roads. Runoff from the primary road in the west of the Site will be treated by a filter strip and drain arrangement.

### Maintenance

Currently maintenance of the surface water management will be undertaken by a private management company (details of which will be determined at the appropriate later stages).



Figure 61. Drainage Strategy, Attenuation Crates





Figure 62. Drainage Strategy, Attenuation Basins and Permeable Paving



## 7.0 ENVIRONMENTAL SUSTAINABILITY *contin.*

### 7.4 Green Infrastructure Network

The landscape design seeks to promote environmental sustainability. Tree removal and vegetation is limited to the minimum required to incorporate the proposals and the effect is mitigated through replacement planting and management. Arboricultural and Ecological Consultants are appointed alongside the Landscape Architect to ensure a cohesive and considered approach for the maximum continued benefit of the Site. As well as planting for ecological / sustainable enhancement, the infrastructure / open space planting is generally native and of local provenance.

### 7.5 Layout and Massing

The layout of the Teversham development has contributed to mitigating the impacts of climate change through setting out a spatial framework that facilitates movement by walking and cycling as an integral part of the design approach. Careful consideration of the massing of buildings can also minimise overshadowing and optimise the efficiency of groups and individual buildings.



Figure 63. Building Regulation Part M4(2) Accessible and Adaptable Dwellings

### 7.6 Access

The proposed development has been designed in order to promote sustainable travel via walking/cycling. This has been achieved by creating pedestrian routes throughout the Site in a northeast/southwest direction and also implementing shared surface carriageways along secondary carriageways. The development will also make use of existing public transport services located to the south of the Site and also benefits from being situated within walking distance of existing amenities in Fulbourn Village centre.

#### Inclusive Design

The aim for inclusive design is to remove barriers which create undue effort, separation or special treatment, and enable everyone to participate equally in mainstream activities independently with choice and dignity. Although the principles of inclusive design have emerged from the disability movement, inclusive design is relevant to all members of society, such as older people, children and carers of young children. From the outset the design of the development has included the fundamental principles of inclusive design. Our approach has been as follows:

- Provide level access to all buildings
- Create safe pedestrian crossings
- Ensure changes in level including ramps have a maximum gradient of 1 in 20 (5%)
- Provide good transport infrastructure and link to existing and proposed bus stops

#### Accessible and Adaptable Dwellings BR M4 (2)

Local Council Housing Policy stipulates that 5% of new homes should be built to the accessible and adaptable dwelling requirements as defined in Building Legislation Approved Document Part M4 (2) rounding down to the nearest whole property. This provision should be split evenly between the affordable and market homes in the development rounding to the nearest whole number. It is also noted that wheelchair housing standards will only be expected as part of the affordable housing element of developments and only in response to identified needs.

The proposed Development is for 110 residential units which at 5% would equate to a total of 6 units to comply with BR M4(2). Divided equally between affordable and private requires a minimum of 3 residential units each. Affordable units allocated as BR M4(2) compliant include the following: Plot s11 & 21 (Block D & C 2Bed Social Rented) and Plot 48 (Block A 2Bed Shared Ownership). Private Market units allocated include Plot 77 (House type C 3Bed) and Plots 83 & 84 (House Type B 2Bed).



## 7.7 Materials and Waste

Demolition and construction waste will be managed and reduced through good on-site construction management practice so that a significant amount of waste requiring off-site processing or disposal is not generated. As the design progresses, materials will be selected that take account their recycled and reused content, their source and the certification that accompanies them. The end function of the development will also integrate a waste and recycling strategy to encourage residents to recycle and reduce waste to landfill.

## 7.8 Energy Efficiency

Energy efficiency and mitigation measures, and changes to national policy which change the weight of local policy, is a dynamic and rapidly evolving field due to: regular advances in technology; emerging heat networks; changes in energy prices; changes to feed in tariffs; and changes to the understanding of best practice.

A best practice approach of reducing the energy use by: incorporating the appropriate opportunities that are available within the site and design; taking advantage of thermal massing; reducing heat movement through the building fabric; taking advantage of materials with high thermal mass; reducing undesirable air/temperature movement; specifying efficient equipment; and enabling occupants to operate the building efficiently, rather than mitigating for that use, is proposed and has been incorporated into the planning application proposals.

Cambridge City Council Local Plan Policy 8/16 from the 2006 Local Plan and the supporting Sustainable Design and Construction SPD 2007 requirements states that this Development will be required to provide at least 10% of the development's total predicted energy requirements on-site, from renewable energy sources. The Development must also comply with BR Part L1A.2013 'Lean Measures' are applicable in the form of enhanced thermal performance of the building fabric.

The Sustainability Statements prepared by MLM Group supporting this Reserved Matters planning application demonstrate how the proposed development could provide at least 10% of its total predicted energy requirements on-site, from renewable energy sources, enhance fabric and passive measures to the highest feasible level using renewables technologies, including Photovoltaics. All other technologies have been discounted. This is also based upon all residential units being built to Accredited Construction Detailing for all junctions and achieving compliance with Part L.

## 7.9 Pollution

Best practice measures will be employed during the construction process to minimise the risk of pollution. The Site is not located within an Air Quality Management Area.

Measures are proposed to reduce the impacts of noise on future residents and light on future and existing residents. Insulation materials with a Global Warming Potential of less than 5 could also be procured, and boilers should be used which have low NO<sup>2</sup> emissions.



Figure 64. Roof Integrated Photovoltaic Panels



