



# NORTH WEST **cambridge**

Design Code  
Condition 7  
February 2013

## **Preface**

This document has been prepared by the North West Cambridge Project Team on behalf of the University of Cambridge.

The Design Code has been prepared further to Condition 7 of the North West Cambridge Planning Application (REF C/11/1114/OUT and S/1886/11) which received Resolution to Grant status on 8th August 2012.

Condition 7 stipulates that all Reserved Matters Applications must accord with the Design Code and include a statement demonstrating compliance with it.



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**All plans in this document are oriented in the same direction, with the North Point pointing to the top of the document. All illustrations are not to scale.**

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## 1.1 INTRODUCTION

This Design Code has been prepared by the North West Cambridge Project Team on behalf of the University of Cambridge through extensive consultation with Cambridge City Council, South Cambridgeshire Council, Cambridgeshire County Council and a number of other stakeholders.

The purpose of this Design Code is to set out clear guidance to designers and developers and to provide a framework within which the Local Planning Authorities will assess Reserved Matters Applications. The intention is to ensure that design quality is maintained throughout the entire development and that the vision for North West Cambridge is delivered.

This Design Code will be a material consideration when determining Reserved Matters applications for North West Cambridge. Any variation to this Design Code will only be possible with the agreement of the University of Cambridge, Cambridge City Council and South Cambridgeshire Council.

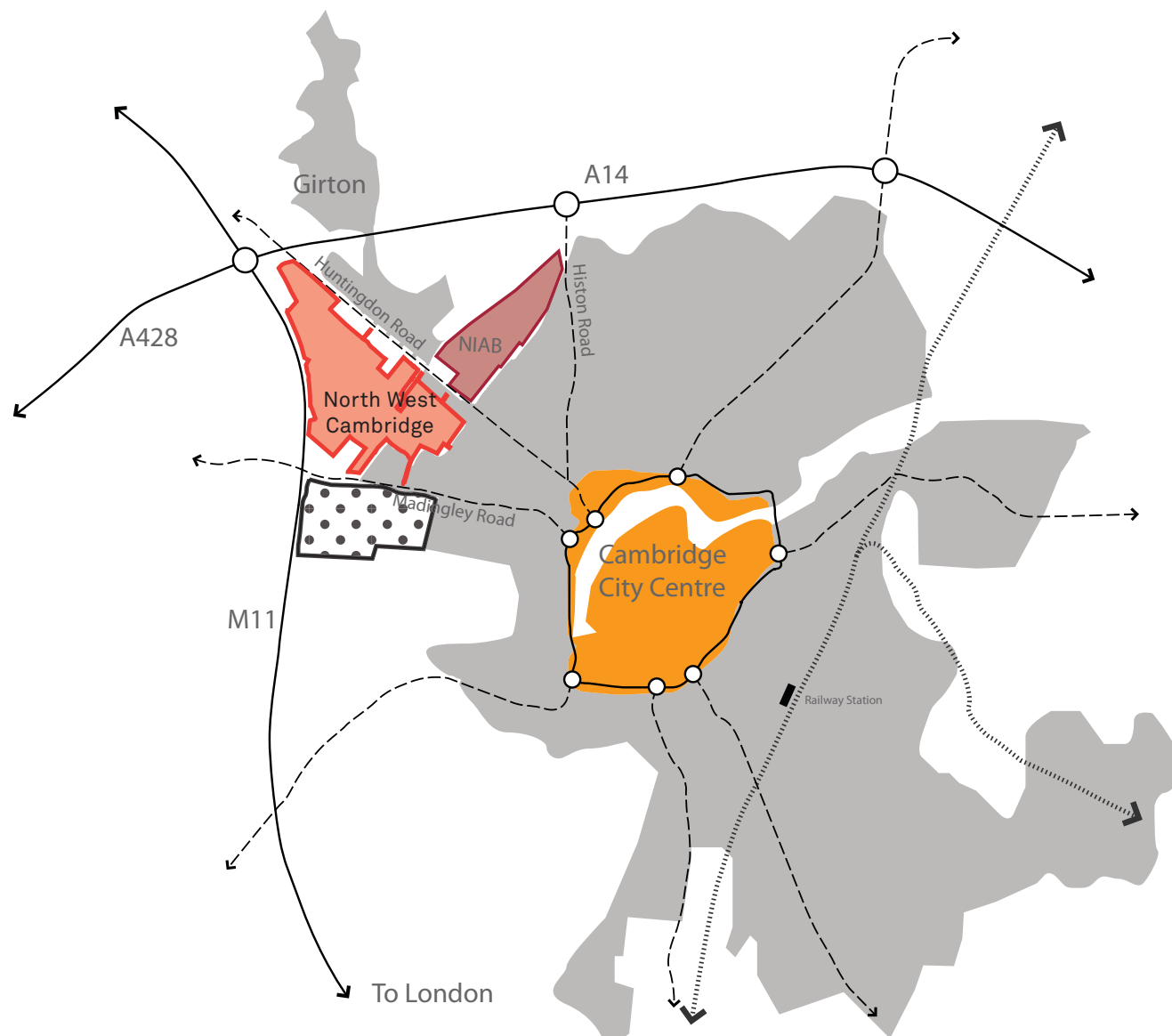


Figure 1.1 Strategic Location Plan





Figure 1.2 Aerial photo with Site Boundary

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## 1.2 PROJECT VISION

### Vision

The University of Cambridge is committed to creating a successful, sustainable, mixed-use new community in North West Cambridge by delivering high quality buildings and landscapes. By producing a robust and flexible development parameters, the University can ensure that this is achieved.

The vision has continually evolved since 2005, through a collaborative process of engagement with the University, Cambridge City Council (CCC) and South Cambridgeshire District Council (SCDC), Cambridge County Council, Cambridgeshire Horizons, key stakeholders and local residents. Throughout this time the intention has been to continually try to achieve the best possible outcome for the University in terms of meeting its development needs, whilst taking into account and responding to site characteristics, landscape character and consideration of the setting of Cambridge.

The vision for North West Cambridge is to create a new urban extension to the built up area of Cambridge. The University's ambition for this development is set out in a series of development principles and concepts. These include:

- A central 'green focus' and parkland corridor which would have a similar scale to Parker's Piece in Cambridge, linking the surrounding development areas and providing sufficient space for it to act as a wildlife corridor;
- A new place in its own right for the whole community to enjoy with a range of facilities, high quality green spaces and good pedestrian and cycle links;
- A public transport corridor which will eventually link West Cambridge with the Cambridge Science Park and will also link North West Cambridge to the NIAB development and future Chesterton station;
- A local centre, including a school, located in the heart of the development to serve the needs of the community in the North West quadrant of Cambridge;
- Three concentrations of commercial research activities: along the western edge of the development, in the north west corner and adjacent to the existing Maddingley Rise sites. Each cluster would create a quality urban setting and encourage inward investment;
- New academic space, within the same three clusters as the commercial research activities, which reflects existing activities at Maddingley Rise and along the north western boundary close to Huntingdon Road;
- A green landscaped area running alongside the M11 which would provide a landscape setting to the edge of Cambridge and provide the opportunity for extensive habitat restoration and enhancement;
- Collegiate accommodation close to the local centre and along the western edge of the development;
- Attractive housing options for University staff on an affordable basis, which learn from the collegial models of housing to create stable, well integrated communities;
- Lower density residential development along Huntingdon Road with private gardens and spaces backing onto the existing residential properties;
- Protection and enhancement of biodiversity and habitats; and
- Advanced energy performance in building design from the development parameters level downwards. Mainly buildings that out-perform current standards in terms of comfort, utilities and whole-life costs.





Figure 1.3 Illustrative Masterplan view



# 1.3 DOCUMENT CONTEXT

In addition to the Design Code, a number of other documents have been or will be submitted to Local Planning Authorities that set out strategies for the delivery of North West Cambridge.

It is important for developers and designers to read these documents in order to understand fully the many complex principles upon which the development parameters, and Design Code have been prepared. These include:



Figure 1.4 Document Context



## Supporting Information

Figure 1.5 shows the relationship between key project documents.

*What Kind of Place* is a site wide document which sits alongside the *Design Briefs* that helps to articulate the qualitative vision for North West Cambridge. This document is intended as a key reference for the overall urban and architectural qualities envisaged for the development.



Figure 1.5 Supporting Information

## 1.4 KEY ELEMENTS

The University is committed to creating a successful, sustainable, mixed-use community at the North West Cambridge which will be a significant addition to the city in terms of housing, employment and research accommodation, public amenities, and open space; merging North West Cambridge with the fabric and community of the existing city. Promoting social interaction is vital to the success of a community. North West Cambridge will attract a variety of residents, from long-term private home owners, to University and College staff and postgraduate students. The shared facilities provided on site, transport infrastructure and support services will encourage social and community groups to be established. North West Cambridge will also promote education through being a living demonstration of a sustainable community, or a ‘living experiment’ for ongoing research and monitoring. New and innovative technologies and systems will be on-show supported by easily accessible information technologies. Opportunities will also be taken to provide linkages between University research and North West Cambridge, in particular the monitoring of resource use across North West Cambridge.

In summary, the key elements of the scheme include the following:



### Everyday life

A local centre, including a primary school, in the heart of the development to serve the needs of the community in the north west quadrant of Cambridge. The local centre will also include an hotel, health care, community centre, space for police, a supermarket and local shops. The new community will take its environmental responsibilities seriously.

Attractive and affordable housing for rent for University staff, some based on collegiate models, will create stable, well-integrated communities.



### Outdoor life

A central green focus and parkland corridor similar in scale to Parker's Piece in central Cambridge (about 7.5 hectares, or 18.5 acres), linking the surrounding development areas and providing sufficient space for it to act as a wildlife haven.

A green landscaped area alongside the M11 (about 23.5 hectares, or 58 acres) provides a landscape setting to the north-western edge of Cambridge and the opportunity for extensive habitat restoration and enhancement. Allotments will provide food growing opportunities for residents.



### Academic life

Three concentrations of academic and research activities, adjacent to the existing Madingley Rise sites, along the western edge of the development and in the north-west corner. Each cluster will create a high-quality urban setting and encourage inward investment.

This will include around 60,000 square meters (approximately 646,000 square feet) of academic facilities and up to 40,000 square metres (430,000 square feet) of commercial research and development space.



### Family life

Lower density residential development in three new neighbourhoods with private gardens and spaces backing onto existing residential properties.

Family housing for University staff and market housing will be blended within these neighbourhoods.

The development will include a total of 3,000 homes, of which half will be affordable homes for University and College staff.



### Collegiate life

Collegiate accommodation close to the local centre and along the western edge of the development.

This includes accommodation for 2,000 postgraduate students, in new colleges or annexes to existing colleges, to meet the needs of a growing student population.



### Sustainable way of life

A public transport corridor will eventually link West Cambridge with the Cambridge Science Park and will also link the proposed scheme to the NIAB development and the planned Chesterton railway station.

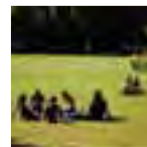
Advanced energy performance will be integrated into the development from the strategic scale to the detailed building design level. The site and buildings will be constructed to very high standards of environmental design.



The Western Edge



The Ridgeway



Parkland - Storey's Field



Family housing



Student housing



Local centre



University housing



Primary School



Academic and commercial research



Low density housing

Figure 1.6 Key Elements



## 1.5 THE SITE

The North West Cambridge site is located at the current edge of the city, bounded by three major roads - Huntingdon Road, Madingley Road and the M11. The Application Site is a component of a significant expansion zone across the north west quadrant of Cambridge, which includes NIAB 1 and NIAB 2 sites and the University's own West Cambridge campus. Girton village lies to the north.

### The Site

North West Cambridge falls within the administrative boundaries of Cambridge City Council and South Cambridgeshire District Council. The Proposed Development is entirely within the joint Cambridge City Council and South Cambridgeshire District Council *North West Cambridge Area Action Plan (AAP)* boundary area.

The site is largely within the University's ownership, and currently functions predominantly as a University farm. There are also uses associated with University research as well as the World Conservation Monitoring Centre (WCMC) and Traffic International.

The urban fabric of Cambridge is distinguished by its many civic and historic University and College buildings which are principally located in and around the historic core. This historic core is between a 10-15 minute cycle ride from the Application Site, a similar distance from the city centre to the station. Girton, a village of 4,500 people is located to the north of the

Application Site, approximately 4km from the city centre on other side of Huntingdon Road and the A14. The West Cambridge campus is located to the south of Madingley Road and is a strategic development area for the University. West Cambridge continues to be developed to provide University academic, commercial research and other uses.

To the north east lies the NIAB sites - an area which will be developed predominantly for residential use.



WCMC building located near the centre of the site, not included within the Application Site Boundary



The Chapel of the Ascension and Burial Ground to the east of the Site Boundary



West Cambridge development to the south of the Application Site and Madingley Road



The M11 forms the western boundary of the Application Site



Existing hay sheds at Gravel Hill Farm and Earth Sciences Bullard Laboratories sited beyond the Application Site Boundary.



Existing detached residential properties to the east of the Site

## **Landscape Character**

Cambridge itself lies at the eastern extent of the Bedfordshire & Cambridgeshire Claylands Landscape Character Area which covers most of East Anglia. The Application Site and broader landscape area lie within this landscape type. The Claylands cover most of central and northern Bedfordshire and western Cambridgeshire and comprise a broad sweep of lowland plateau, dissected by a number of wide shallow valleys, including the river Great Ouse.

The landscape is typically an empty, gently undulating lowland landscape with expansive views of large-scale arable farmland contained either by sparse trimmed hedgerows, shelterbelts, open ditches or stream-side vegetation. There are scattered ancient woodlands and plantation that form important visual and wildlife features within the landscape. A majority of the outlying land is in arable land use, with the land within the site following gently undulating contours and ground topography, softly sloping towards the existing river tributary, the Washpit Brook.



The Horse Chestnut Avenue to the east of the Application Site



Site of Special Scientific Interest within the Application Site



Existing Veteran Oak tree within Site



Application Site with existing agricultural uses



Existing hedgerows and trees within the Application Site



View of Application Site with the ridgeline in the distance



## 1.6 CONSENTED SCHEME

### Introduction

Planning Permission was granted for the North West Cambridge site in February 2013. The basis of the planning permission is a series of *Parameter Plans and Statements* and the *Environmental Statement*. It is expected that designs that come forward are in accordance with these documents as well as with this Design Code.

A extract of the *Parameter Plans* is included in Chapter 7 Appendices, Appendix B - Application Drawings, Parameter Plans and Statements on page 268, please also refer to documents listed in Section 1.3 Document Context on page 6 for further information.

### Development Proposals

The development proposals comprise:

Zone B:

- Up to 3,000 dwellings; (Class C3 and C4)
- Up to 2,000 student bedspaces; 98,000 sq.m. (Class C2)
- Up to 100,000 sq.m. new employment floorspace, of which:
  - Up to 40,000 sq.m. commercial employment floorspace (Class B1(b) and sui generis research uses)
  - At least 60,000 sq.m. academic employment floorspace (Class D1)
- Up to 5,300 sq.m. gross retail floorspace (Use Class A1/A2/A3/A4/A5) (of which the supermarket is not more than 2,000 sq.m. net floorspace)
- Senior living; up to 6,500sq.m. (Class C2)
- Community centre; up to 500 sq.m. (Class D1)
- Indoor sports provision, up to 450 sq.m. (Class D1)
- Police; up to 200 sq.m. (Class B1)
- Primary Health Care; up to 700 sq.m. (Class D1)
- School; 3,750 sq.m. (Class D1)
- Nurseries; up to 2,000 sq.m. (Class D1)
- Community Residential; up to 500 sq.m. (Class C3)
- Hotel (130 rooms); up to 7,000 sq.m. (Class C1)
- Access roads
- Pedestrian, cycle and vehicle routes
- Parking
- Energy Centre; up to 1,250 sq.m.
- Provision and/or upgrade of services and related service media and apparatus including

pumping stations, substations and pressure regulators

- Drainage works (including sustainable ground and surface water attenuation and control)
- Open space and landscaping (including parks, play areas, playing fields, allotments, water features, formal/informal open space, maintenance sheds, pavilions and support facilities)
- Works to Washpit Brook (including enlarged channel, storage area and flow control structure)
- Earthworks to provide revised ground contours
- Demolition of existing buildings and structures

Zone A: Huntingdon Road - Highway and Utility Works

- Construction of a new three arm and a new four arm signal controlled junctions, including pedestrian and cycle crossings, to provide access to the Proposed Development from Huntingdon Road
- Installation of a toucan crossing across Huntingdon Road
- Construction of sections of unsegregated footway/cycleway and provision of sections of on-carriageway cycleway on the southern side of Huntingdon Road
- Diversion and/or replacement and/or protection of existing utilities affected by the proposed highway works
- Provision of new telecommunications infrastructure and connection to existing utility infrastructure situated along Huntingdon Road
- Related landscaping, accommodation works,



street furniture, drainage, telemetry and utilities

### Zone C: Madingley Road - Highway and Utility Works

- Junction improvement works at the High Cross/Madingley Road junction to alter it from a three arm priority junction to a four arm signal controlled junction, including pedestrian and cycle crossings, to provide access to the Proposed Development
- Installation of a toucan crossing across Madingley Road
- Diversion and/or replacement and/or protection of existing utilities affected by the proposed highway works
- Construction of sections of unsegregated footway/cycleway and provision of sections of on-carriageway cycleway on the northern side of Madingley Road
- Installation of a retaining wall along Madingley Road
- Provision of a new pumped foul water rising main, including chamber connection, and new telecommunications, electricity and gas infrastructure and the associated connection to existing utility infrastructure situated along Madingley Road
- Related landscaping, accommodation works, street furniture, drainage, telemetry and utilities
- This Design Code focuses on the development in Zone B, as defined on Parameter Plan 01, though the principles apply across the Proposed Development.

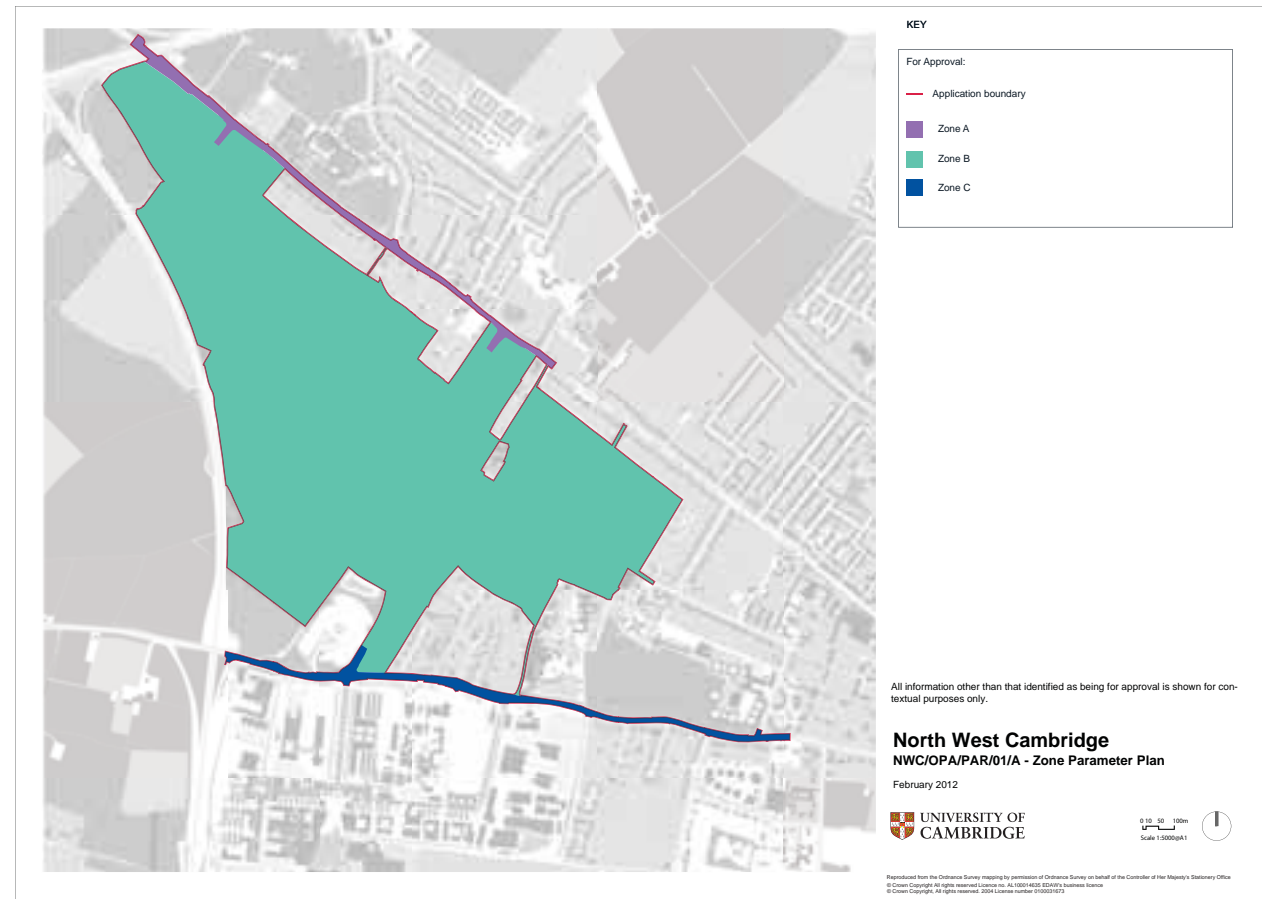


Figure 1.7 Zone Parameter Plan



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# HOW TO USE THE CODE

The Design Code provides the next level of detail for design parameters than those set out in the Parameter Plans within the Planning Application. Compliance with the Code will ensure a consistently high quality outcome is achieved throughout North West Cambridge. **Unless otherwise stated, all design codes are MANDATORY.**

## 2.1 CODE STRUCTURE & NAVIGATION

The Code is structured into the following chapters:

- Introduction
- How To Use The Code
- Site Wide Design Code
- Character Areas
- Bringing It All Together
- Delivery
- Appendices

To enable easy navigation, between chapters and character areas, a navigation bar is located on each page spread. Each of the character areas is colour-coded for reference.

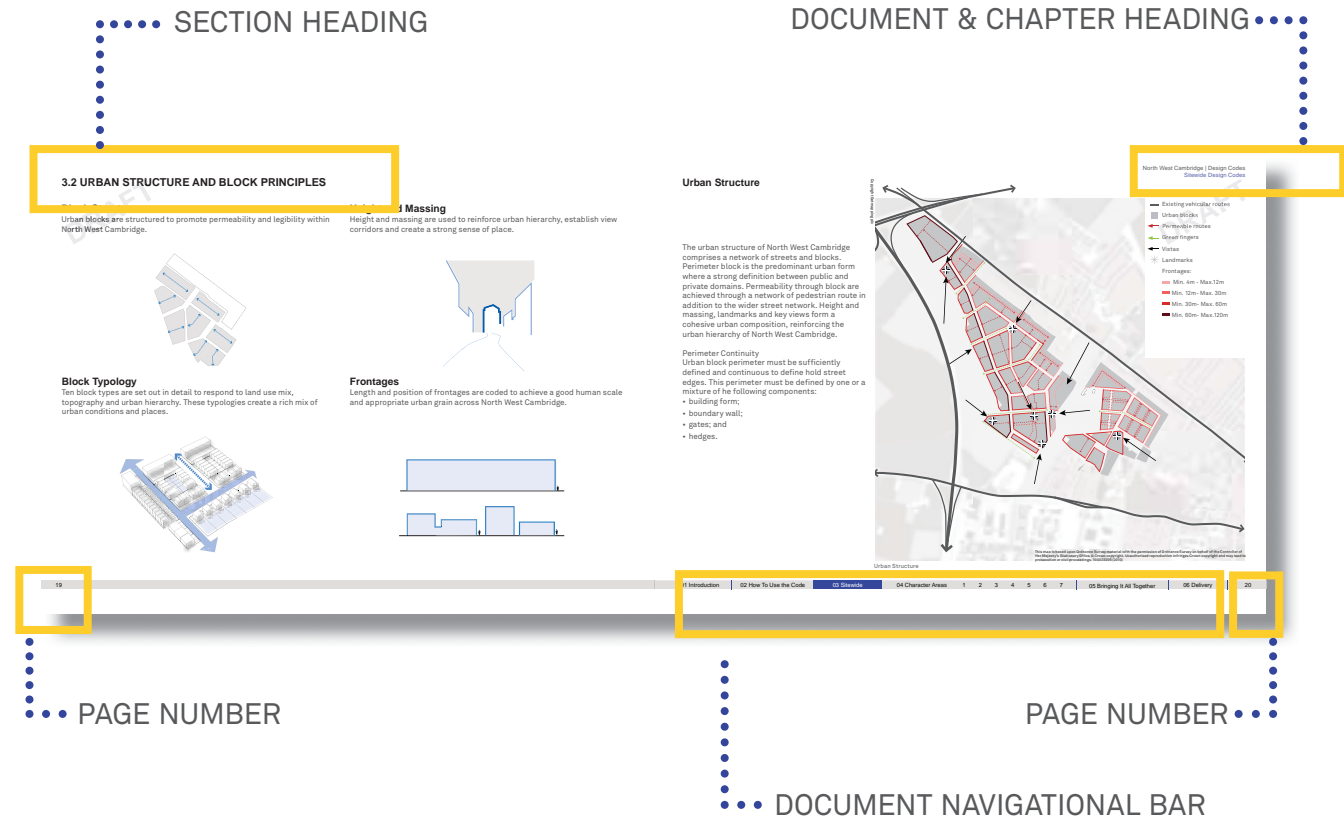


Figure 2.1 Extract from Site Wide Chapter

## 2.2 SITE WIDE DESIGN CODES

The Design Code is set out in two main chapters, Site Wide and Character Areas. Content of both sections are structured in the following order:

- Land Use
- Urban Structure
- Access & Movement
- Landscape
- Infrastructure
- Sustainability
- Accessibility

Within the Site Wide section, each urban layer is presented as a series of concept diagrams which underpin the site wide strategies.

Typologies for each urban layer are set out in tables where design codes are detailed. These tables provide a site wide overview of hierarchy in terms of urban blocks, streets and landscape.

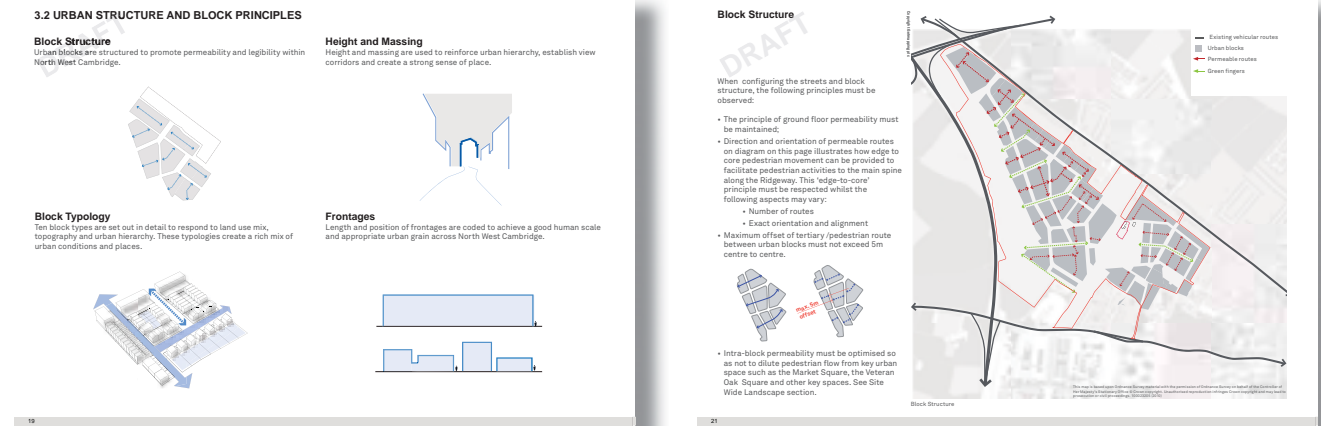


Figure 2.2 Extracts from Site Wide Chapter

Block Typology	1 Development Edge	2 Perimeter Blocks	3 Central Courtyard	4 Back to Back Rear Gardens	5 Hybrids	6 Residential Perimeter Block	7 Non-Residential Perimeter Block	8 Local Centre Mixed Use	9 Linear Block	10 Special Block
Plan										
Character Area	Stoney's Field, Neighbourhood Village, Local Centre	Western Edge, North West Corner	Highgate Rise, The Ridgeway							
Design Details										
Building Typology	Detached, Semi-detached, Terrace houses, apartments	Terrace houses and Duplex, Mews	Terrace houses, Duplex and Apartments	Semi-detached, Terrace houses, Duplex and Apartments	Terrace houses, Duplex, Mews and Apartments	Duplex, Apartments, Student Housing, Collegiate, Senior Care	Academic / Commercial Research	Local Centre Mixed Use	Local Centre Mixed Use, Academic / Commercial Research, Apartments, Student Housing, Collegiate	Community, School, Hotel, Energy Centre, Supermarket
Continuous Street Frontages	Fragmented frontage with broken edges	Continuous frontage with occasional breaks, which also provide mews access points. Along mews, frontage as continuous as possible.	Continuous frontage with minimum breaks, length range from	Continuous frontage with occasional breaks	Continuous frontage with occasional breaks, which also provide mews access points. Along mews, frontage as continuous as possible.	Continuous frontage with occasional breaks	Continuous frontage with occasional breaks	Continuous frontage with minimum breaks	Continuous frontage with minimum breaks	Continuous frontage with minimum breaks
Massing	Generally low lying with buildings height about 2-3 storeys high	Generally low lying with buildings height about 2-3 storeys high	Generally low lying, massing step down from streets into central communal courtyard	Generally low lying, massing step down from streets into central communal courtyard	Hybrids					
Depth of Building Footprint	Buildings along streets with private back garden extend to the edge of development	Buildings along perimeter, with mews running into the block providing access to internal buildings	Buildings along perimeter, with small private rear gardens, fronting on to central private communal courtyard	Buildings along perimeter, with back to back rear gardens and/or raised courtyards and gardens	Hybrid of Access, Mews, Central Communal Courtyard and Back to Back, Rear Gardens typology	Buildings along perimeter, with semi-private communal courtyards	Buildings along perimeter, with semi-private / public communal courtyards	Buildings along perimeter, with private communal courtyards and/or raised courtyards and gardens	Linear Block, with building fronting streets and access points	Special standalone typology

Figure 2.3 Extract of Site Wide Block Typology Table

## 2.3 CHARACTER AREA DESIGN CODES

North West Cambridge is divided into seven character areas, namely:

- Storey’s Field
- Neighbourhood Village
- Local Centre
- Western Edge
- North West Corner
- Madingley Rise
- The Ridgeway

At the beginning of each Character Area is a ‘sign-posting’ page that identifies which parts of the Site Wide Design Codes are relevant to the particular Character Area. This is followed by the presentation of three place-making layers as a follow up from the Site Wide section. Where relevant, character-area-specific design codes are set out in the rest of the character area section.

CHARACTER AREAS	SITE WIDE																		
	BLOCKS										STREETS				LANDSCAPE				
	Development Edge	Access Mews	Communal Courtyard	Back to Back Rear Gardens	Hybrid Block	Residential Perimeter	Non-Residential Perimeter	Local centre Mix Use	Linear Block	Special Block	Primary Street	Busgate Street	Secondary Street	Tertiary Street	Western Edge, Girton Gap (Primary Open Land)	Green Corridors (Secondary Open Land)	Ridgeway	Key Spaces (Secondary Open Land)	Community Infrastructure (Play Spaces)
	01	02	03	04	05	06	07	08	09	10	01	02	03	04	01	02	03	04	05
STOREY’S FIELD																			
NEIGHBOURHOOD VILLAGE																			
LOCAL CENTRE																			
WESTERN EDGE																			
NORTH-WEST CORNER																			
MADINGLEY RISE																			
THE RIDGEWAY																			

Table 2.1 Site Wide and Character Areas Matrix



Figure 2.4 Character Areas

## 2.4 COMPLIANCE & NON-COMPLIANCE

This Design Code will form the basis of the design assessment for Reserved Matters Applications that come forward for North West Cambridge. Each application will need to include a Design Code Compliance Statement, which should indicate how the designs put forward in the application relate to the Design Code. The Compliance Statement should reference both Site Wide and Character Area aspects of the Code.

The University and Planning Authorities recognise that the approach to design changes over time, and due to the mixed use nature of the North West Cambridge site as well as the long-term implementation process, it may be possible in the future for designs to come forward that are not entirely Design Code compliant. Any areas of non-compliance with the mandatory aspects of the Design Code should be raised with the University and the Planning Authority, and a thorough rationale for non-compliance must be set out, demonstrating why it is not possible to achieve Design Code compliance. Any variations to the approach should be agreed through the pre-application process with both the University and the Planning Authorities.







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## DESIGN PRINCIPLES AND CONCEPTS

The Site Wide Design Code chapter provides guidance for elements that are applicable across the site. Character Areas chapter has further detail guidance regarding specific character and exceptions. For North West Cambridge, the design principles and concepts are explained via the following layers.

### 3.1 Land Use

North West Cambridge is a mixed use development, primarily residential with supporting retail and community amenities. There are research facilities located to the northern and southern peripheries, with academic and commercial uses along the western edge.

Please refer to Section 3.1 Land Use on page 26.

### 3.2 Urban Structure and Block Principles

The Urban Structure layer is further sub-divided to 4 layers, the coding for each is set out in this chapter:

- Block Structure
- Frontages
- Height & Massing
- Block Typologies
- Thresholds and Interfaces

Please refer to Section 3.2 Urban Structure and Block Principles on page 28.

### 3.3 Access and Movement

The Access & Movement layer is further sub-divided into 4 layers, the coding of each is summarised in the Street Typologies Table in this chapter. The 4 sub-layers are:

- Street Hierarchy
- Pedestrian & Cycle
- Parking

Please refer to Section 3.3 Access and Movement on page 50.



Figure 3.1 Land Use



Figure 3.2 Urban Structure



Figure 3.3 Access and Movement

### 3.4 Landscape

Landscape comprises the following design code layers:

- Landscape Structure
- Landscape Principles
- Landscape Typologies
- Hardscape Strategy
- Softscape Strategy
- Ecology Strategy
- Play Areas Strategy
- Key Spaces are further detailed in Chapter 4 Character Areas from page 147 onwards.

Please refer to Section 3.4 Landscape on page 78.



Figure 3.4 Landscape

### 3.5 Infrastructure

Infrastructure comprises the following design code layers:

- Energy
- Utilities & Waste
- SuDS & Surface Water Drainage
- Light
- Noise

Please refer to Section 3.5 Infrastructure on page 118.



Figure 3.5 Infrastructure

### 3.6 Sustainability

Sustainability comprises the following design code layers:

- Materials
- Waste
- Composting
- Recycling
- Cycle Parking
- Energy Efficiency

Please refer to Section 3.6 Sustainability on page 134.

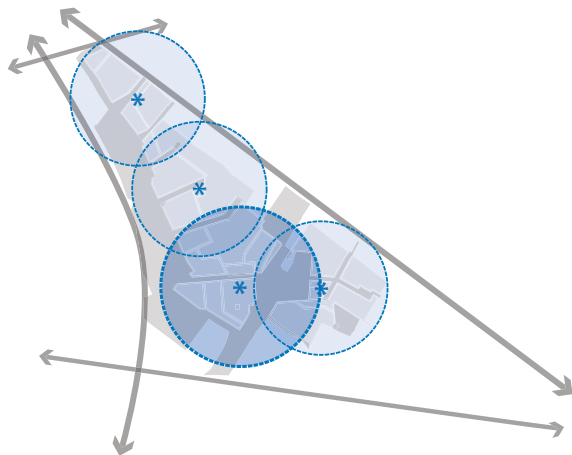


Figure 3.6 Sustainability

## 3.1 LAND USE

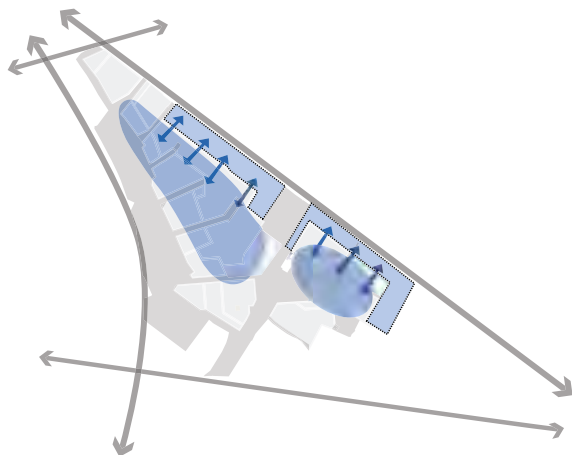
### Mix Use Centres

The land use strategy is derived from the concept of four neighbourhoods, each within easy walking/cycling distance to the Local Centre.



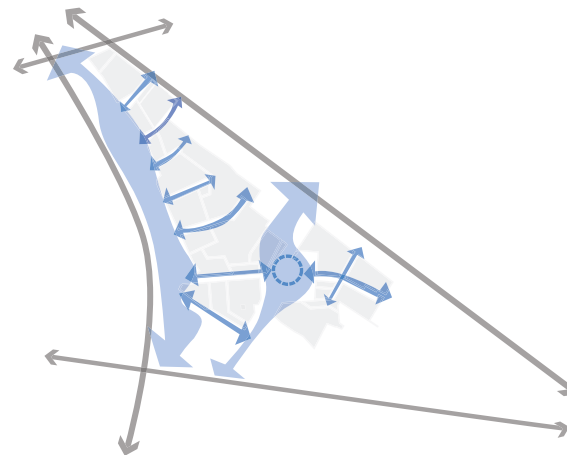
### Responding to Existing Residential

Compatible residential land uses are positioned adjacent to existing houses on Huntington Road to create convivial neighbourhoods.



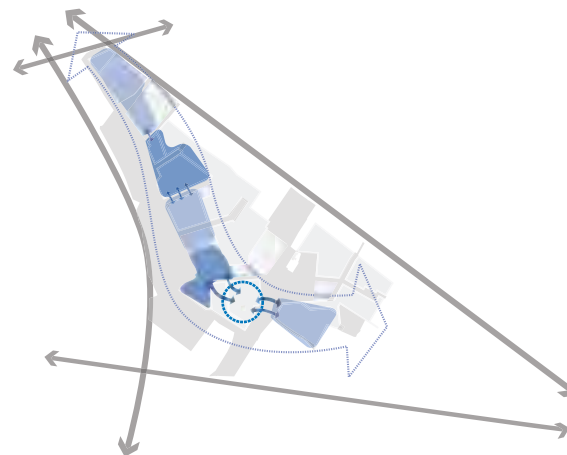
### Green Open Space as Focus

Strategic parklands are structuring elements within the masterplan. Connections to and across these landscape features create strong urban hierarchy and distinctive sense of place.



### Collegiate / Academic Research Adjacency

Collegiate and academic research uses are co-located along the Ridgeway, the pedestrian and cycle focused spine of North West Cambridge, to create a good mix of uses throughout the day.



Within the parameters set out in the *Parameter Plan 04* (Chapter 7, Appendix B, page 282), the following principles must be observed in detailed design:

- the allocation of mixed use must seek to provide privacy for residential use. Where non-residential use is positioned opposite to dwellings, internal layout must be arranged to provide privacy of residents;
- where residential units are located on the ground floor, defensible space must be created to provide for privacy;
- internal layout of dwellings and other non-residential use must be varied sufficiently to help animate the street. For example, a street facade should not comprise solely or predominantly by all utility rooms or bedrooms; street elevations should comprise a mixture of living spaces, work spaces and non-active rooms to allow for eye-on-the-street during different times of the day.
- flexible ground floor units within the residential and complementary mixed use areas are encouraged. These units will have increased floor to ceiling height at Ground level (typically 3.75m) which allows for the building to be adapted for other uses in the future.

The detail land use breakdown is set out in Chapter 1, Section 1.6 Consented Scheme on page 14 and also *Parameter Plan 04* (Chapter 7, Appendix B, Parameter Plan 04: Land Use (Built Development and Ancillary Space); Zone B on page 282) in *Description of Development*.

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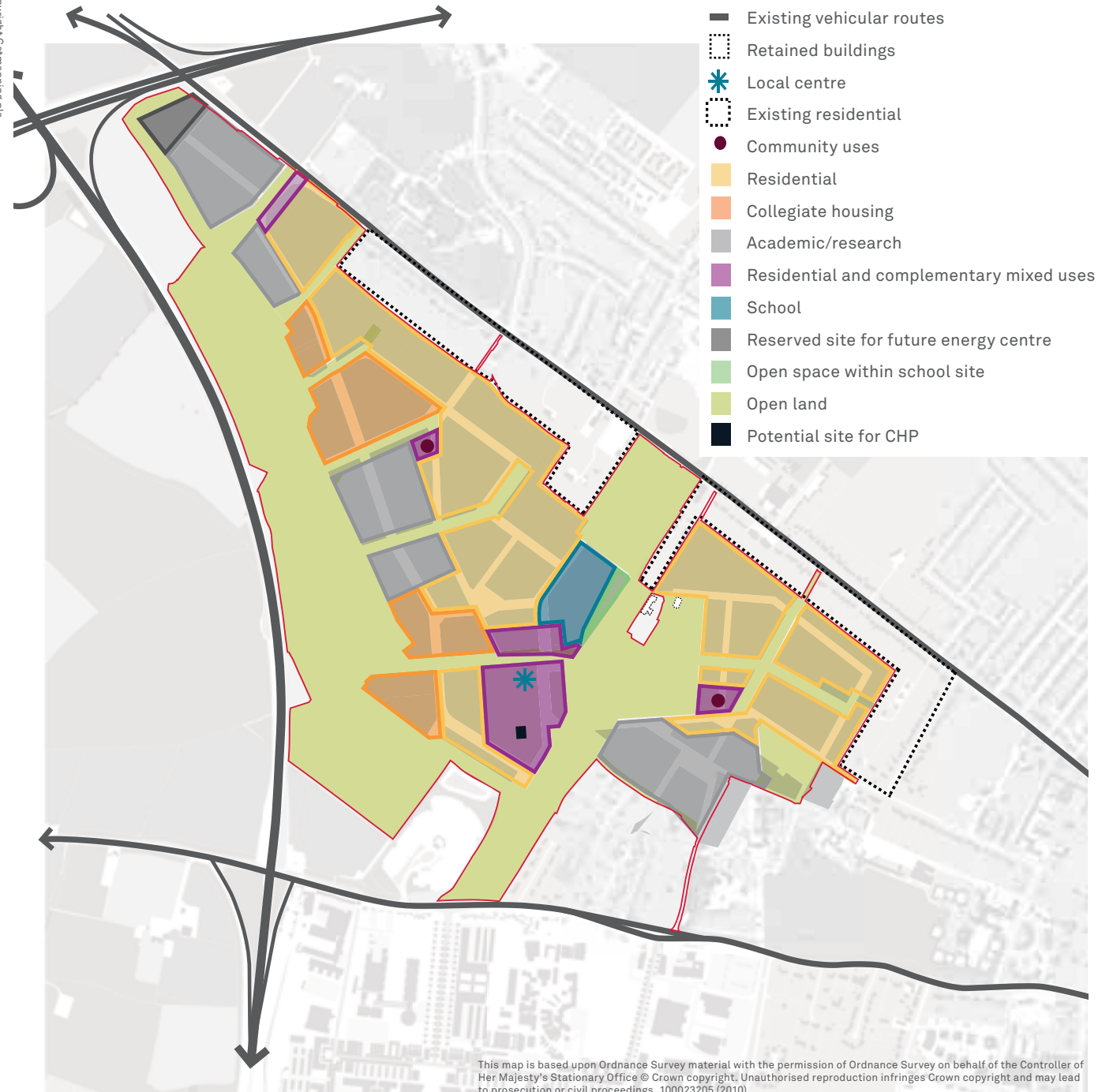


Figure 3.7 Land Use

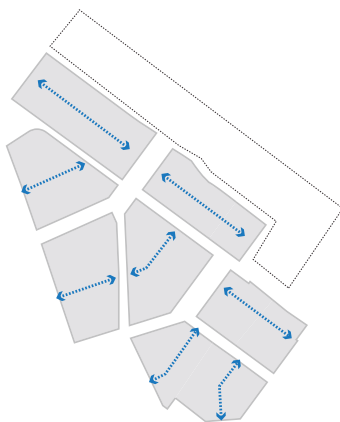


## 3.2 URBAN STRUCTURE AND BLOCK PRINCIPLES

The urban structure of North West Cambridge comprises a network of streets and blocks. Perimeter block is the predominant urban form where a strong definition between public and private domains. Permeability through block are achieved through a network of pedestrian route in addition to the wider street network. Height and massing, landmarks and key views form a cohesive urban composition, reinforcing the urban hierarchy of North West Cambridge.

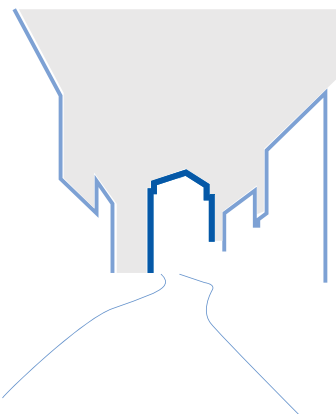
### Block Structure

Urban blocks are structured to promote permeability and legibility within North West Cambridge.



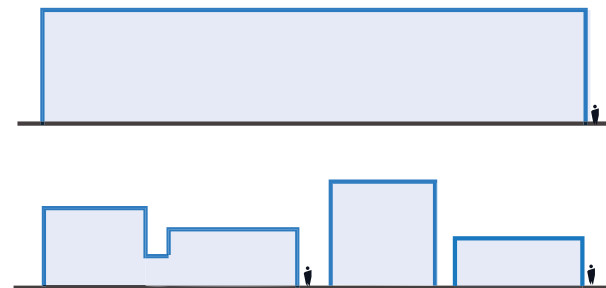
### Height and Massing

Height and massing are used to reinforce urban hierarchy, establish view corridors and create a strong sense of place.



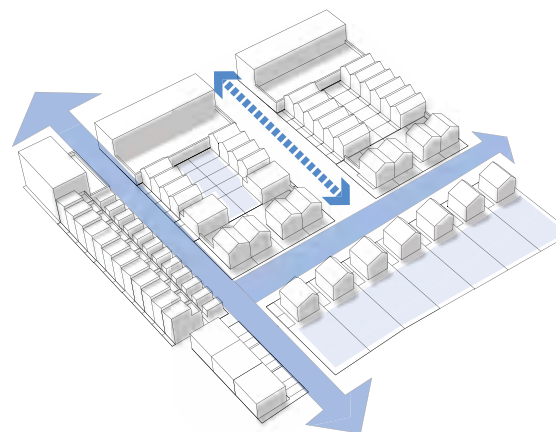
### Frontages

Length and position of frontages are coded to achieve a good human scale and appropriate urban grain across North West Cambridge.



### Block Typology

Ten block types are set out in detail to respond to land use mix, topography and urban hierarchy. These typologies create a rich mix of urban conditions and places.



## Block Structure

When configuring the streets and blocks, the following principles must be observed:

- The principle of ground floor permeability must be maintained;
- Direction and orientation of permeable routes on this page illustrate how edge to core pedestrian movement can be provided to facilitate pedestrian activities from the edges of the development to the main spine along the Ridgeway and the Local Centre which is the core. This 'edge-to-core' principle must be respected whilst the following aspects may vary:
  - Number of routes
  - Exact orientation and alignment
- Maximum offset of tertiary /pedestrian route between urban blocks must not exceed 5m centre to centre.

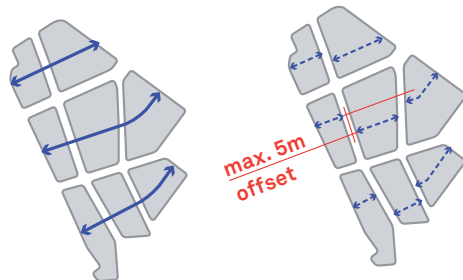


Figure 3.8 Block permeability offsets

- Intra-block permeability must be optimised so as not to dilute pedestrian flow from key urban space such as the Market Square, the Veteran Oak Square and other key spaces. See Section 3.4 Landscape on page 78.



Figure 3.9 Block Structure and Permeability

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## Frontages

The hierarchy of urban grain presented here reflects the broad land use parameters and block types set out in subsequent section. Together, they reinforce the overall urban hierarchy for North West Cambridge. In addition to the minimum and maximum building frontage lengths as set out in *Parameter Plan 05* (Chapter 7, Appendix B, page 284), the following building frontage codes must be observed:

- Building frontage must hold the street edge by building up to the privacy strip as set out in Site Wide Street Typology Table;
- For any one urban block (shown in grey in diagram), the frontage line must hold for the predominant stretch of the block to achieve a consistent street edge across multiple blocks; and
- Special Frontage are not subject to dimensional coding but these must be designed to fulfil urban design requirements as set out in Site Wide Block Typology Type 10 (page 45).

## Perimeter Continuity

Urban block perimeter must be sufficiently defined and continuous to hold street edges. This perimeter must be defined by one or a mixture of the following components:

- building form;
- boundary wall;
- gates; and
- hedges.

Also see Thresholds and Interfaces on page 46.

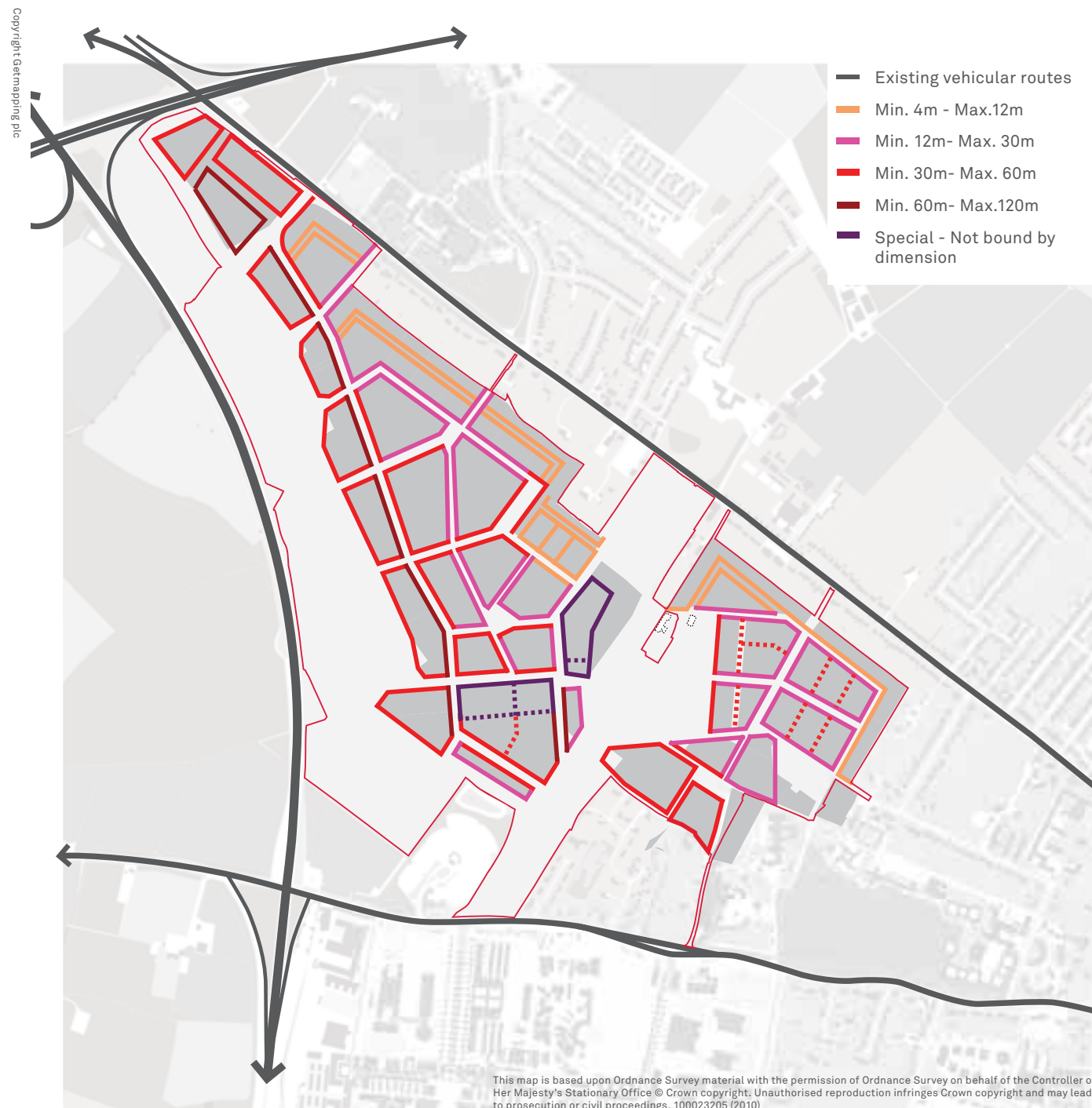


Figure 3.11 Hierarchy of Frontages



## Height and Massing

The following principles of height and massing must be observed to reinforce the urban hierarchy and legibility of North West Cambridge:

- higher massing on key routes such as The Ridgeway and along key spaces such as Storey's Field;
- lower massing along development edge, especially along the rear of properties along Huntingdon Road;
- alignment of key views identified on diagram must be respected;
- Landmark can refer to a taller element within the massing composition; but they can also be formed by special building features, public art or other medium without being expressed by height;
- land use floor-to-floor heights are not fixed but daylight access requirements within *Code for Sustainable Homes Level 5 (Code 5)* must be achieved;
- rooftops must be optimized for PV integration to achieve the requirements within *Code 5*; and
- The principle of urban hierarchy and thus relative heights must be respected, though exact heights in AOD are subject to detail design and co-ordination.

These codes must be used in conjunction with *Parameter Plan 05* and *Parameter Plan 06*, where maximum building heights in AOD are set out. Please refer to Chapter 7, Appendix B, page 284 to page 286.

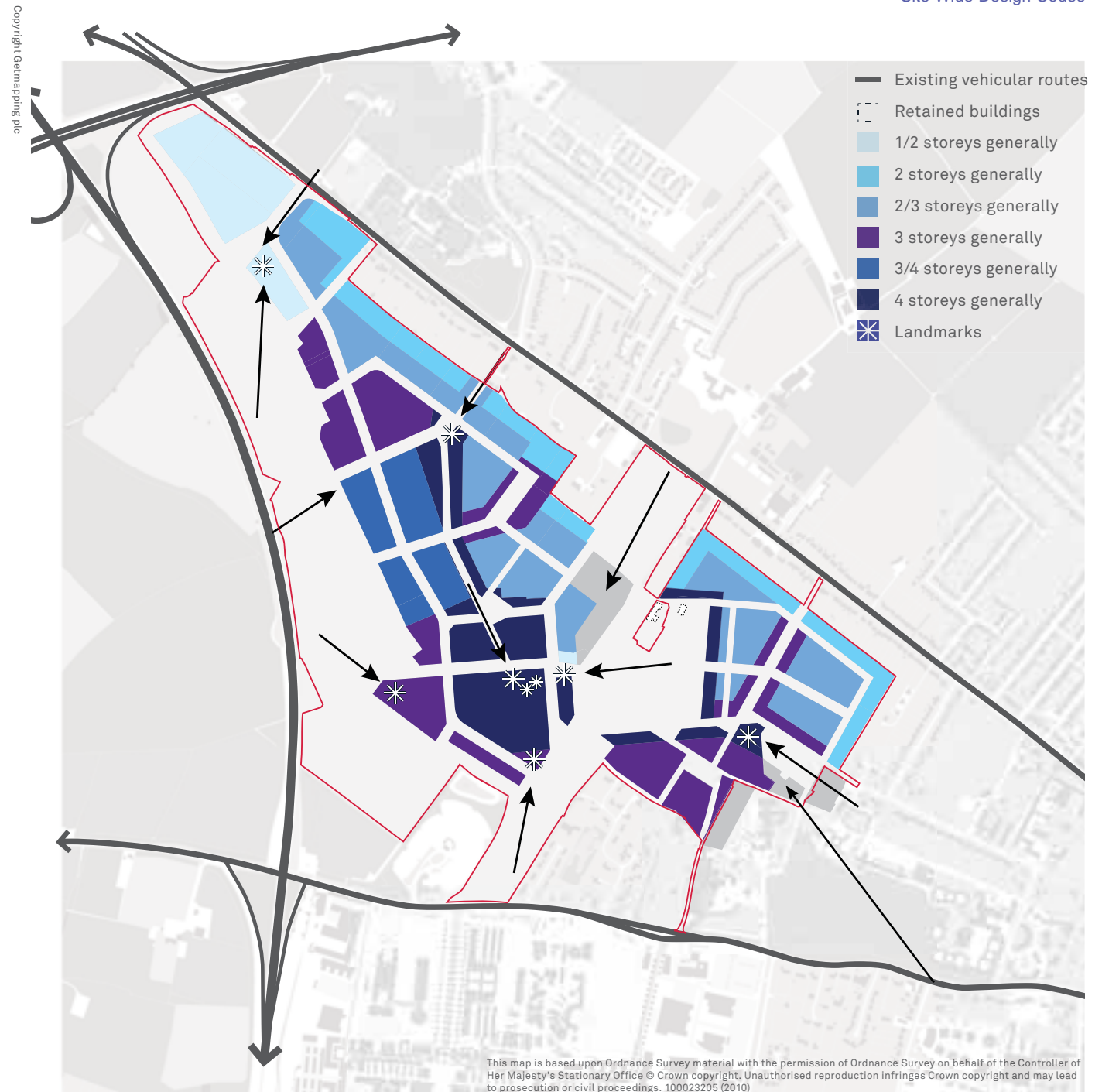


Figure 3.12 Building Height and Landmarks

## Block Typology

The block typologies illustrated in this diagram are set up to reinforce the urban hierarchy and legibility of North West Cambridge. The design coding for each type and their relevance in various character areas as illustrated in the Block Typology Table (Table 3.1 on page 34) are detailed in the following pages.

Block types are distinguished primarily by land uses, urban grain and building typologies. Whilst addressing issues such as block access and servicing, these allocation of typologies must not, however, distract the urban design intention in creating coherent streets. Therefore, the delineation of Character Area boundaries are deliberate such that two sides of any particular street are captured within a single character area.

For detail coding of block type transitions within each character area and between character areas, see Chapter 5 Bringing It All Together on page 223.

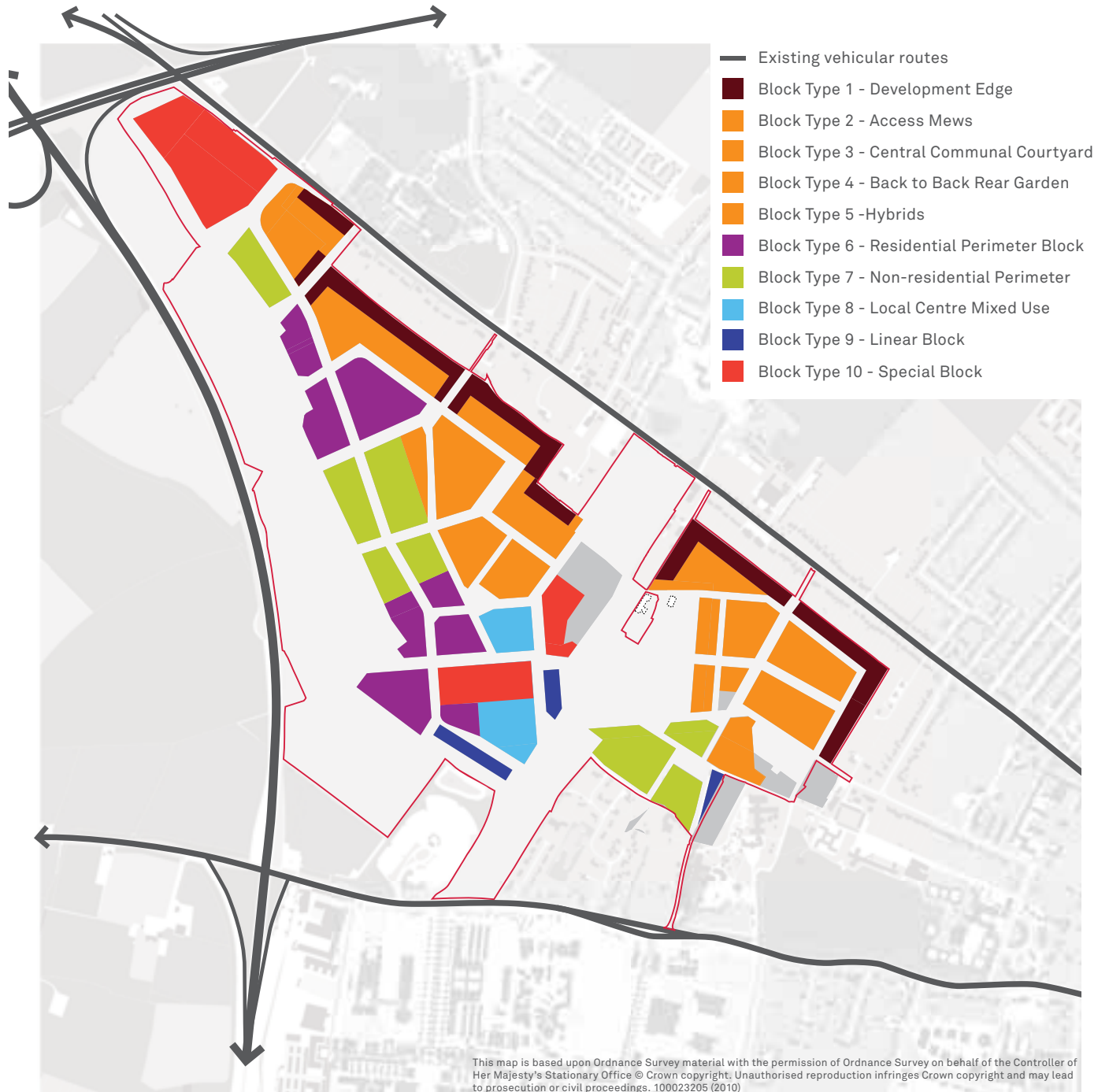


Figure 3.13 Block Types



### Bad Practice

Blank and unarticulated non-residential block on the right does not work well with residential blocks on the left:

**Lacks Rhythm** – the A-B-B-B-A rhythm of the residential block on the left is not picked up on the block (residential or non-residential) on the right.

**Lacks Façade Depths** – Shallow or flush window reveals and depth of door opening details creates a façade that lacks shadow lines and visual interests.

**Poor Roofline** – unarticulated roofline detracts from the public realm.

**Inappropriate Scale** – the monolithic scale of block on the right obliterate the sense of human scale of the street.



### Good Practice

Buildings on both sides of street should work together to create visual interests and serial visions and thus create a strong sense of place. Buildings on both sides should hold the 'street wall' to create good consistent streets.

**Good Rhythm** – as illustrated, the non-residential block on the right develops an A-B-A-B-A-B rhythm which resonates with the asymmetrical rhythm on the residential block on the left.

**Good Façade Depths** – buildings on both side of the street present sufficient façade depth to create visual interests.

**Good Roofline** – a varied roofline is created on both sides of the street to create rhythm at upper levels.

**Good Scale** – the scale of non-residential block is broken down vertically and horizontally to create an appropriate scale so as not to overwhelm the residential scale on the left.

Figure 3.14 Transition between Block Types

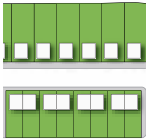
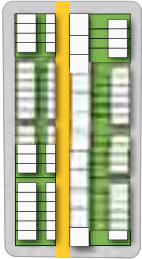
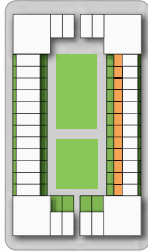
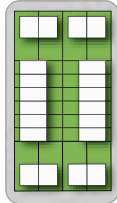
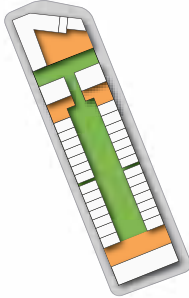








Block Typology	1. Development Edge	Perimeter Blocks			
		2. Access Mews	3. Central Communal Courtyard	4. Back to Back Rear Gardens	5. Hybrids
Plan					
Character Area					
Storey's Field					
Neighbourhood Village					
Local Centre					
Western Edge					
North West Corner					
Madingley Rise					
The Ridgeway					
Design Details					
Building Typology Composition	Detached, Semi-detached, Terrace houses, apartments	Terrace houses and Duplex, Mews	Terrace houses, Duplex and Apartments	Semi-detached, Terrace houses, Duplex and Apartments	Terrace houses, Duplex, Mews and Apartments
Continuity of Streets	Fragmented frontage with broken edges	Continuous frontage with occasional breaks, which also provide mews access points. Along mews, frontage as continuous as possible.	Continuous frontage with minimum breaks, length range from	Continuous frontage with occasional breaks	Continuous frontage with occasional breaks, which also provide mews access points. Along mews, frontage as continuous as possible.
Massing Composition	Generally low lying with buildings height about 2 - 3 storeys high	Generally low lying with buildings along mews not more than 2 storeys tall, perimeter buildings may be 3 - 5 storeys	Generally low lying, massing step down from streets into central communal courtyard	Generally low lying, with massing focus on framing streets, and step down facing internal.	Hybrids
Layout (Design Intent)	Houses along streets with private back garden extend to the edge of development	Buildings along perimeter, with mews running into the block providing access to internal buildings	Buildings along perimeter, with small private rear garden, fronting on to central private communal courtyard	Buildings along perimeter, with back to back rear gardens and/or raised courtyards and gardens	Hybrid of Access Mews, Central Communal Courtyard and Back to Back Rear Gardens typology
For Further Details	See page 36	See page 37	See page 38	See page 39	See page 40

Table 3.1 Block Typology Table



Block Typology	Perimeter Blocks			9. Linear Block	10. Special Block
	6. Residential Perimeter Block	7. Non-Residential Perimeter Block	8. Local Centre Mixed Use		
Plan					
Character Area					
Storey's Field					●
Neighbourhood Village					
Local Centre	●		●	●	●
Western Edge	●	●		●	
North West Corner					●
Madingley Rise		●			
The Ridgeway	●	●		●	
Design Details					
Building Typology Composition	Duplex, Apartments, Student Housing, Collegiate, Senior Care	Academic / Commercial Research	Local Centre Mixed Use	Local Centre Mix Use, Academic / Commercial Research, Apartments, Student Housing, Collegiate	Community, School, Hotel, Energy Centre, Supermarket
Continuity of Street	Continuous frontage with occasional breaks	Continuous frontage with occasional breaks	Continuous frontage with minimum breaks	Continuous frontage with minimum breaks	
Massing Composition	Hybrids with discretely varied massing to achieve an interesting but coherent roof and streetscape.	Hybrids with discretely varied massing to achieve an interesting but coherent roof and streetscape.	Hybrids with discretely varied massing to achieve an interesting but coherent roof and streetscape.	Hybrids with discretely varied massing to achieve an interesting but coherent roof and streetscape.	Generally low lying, responding to context and landmark requirements if any
Layout (Design Intent)	Buildings along perimeter, with semi-private communal courtyards	Buildings along perimeter, with semi-private / public communal courtyards	Buildings along perimeter, with private communal courtyards and/or raised courtyards and gardens	Linear Block, with building framing streets and access points.	Special standalone typology
For Further Details	See page 41	See page 42	See page 43	See page 44	See page 45

## Block Type 1 - Development Edge Block

The Development Edge Block is designed to complete the perimeter block form with the existing housing typologies that front onto Huntingdon Road and All Souls Lane. These blocks must:

- back onto existing plots to create a secure back garden to back garden urban form;
- achieve a minimum of 20m distance between rear boundary of existing houses and the rear elevation of new houses;
- only detached, semi-detached and terrace houses are permitted in this block type;
- apartments are permitted in limited number to complete the corners or to hold strategic vistas;
- garages must be integral to the main dwelling built-form - individual stand-alone garages are not permissible



Corner dwelling 'turning corner' to animate street edge

Regular front doors creates safe/convivial neighbourhoods

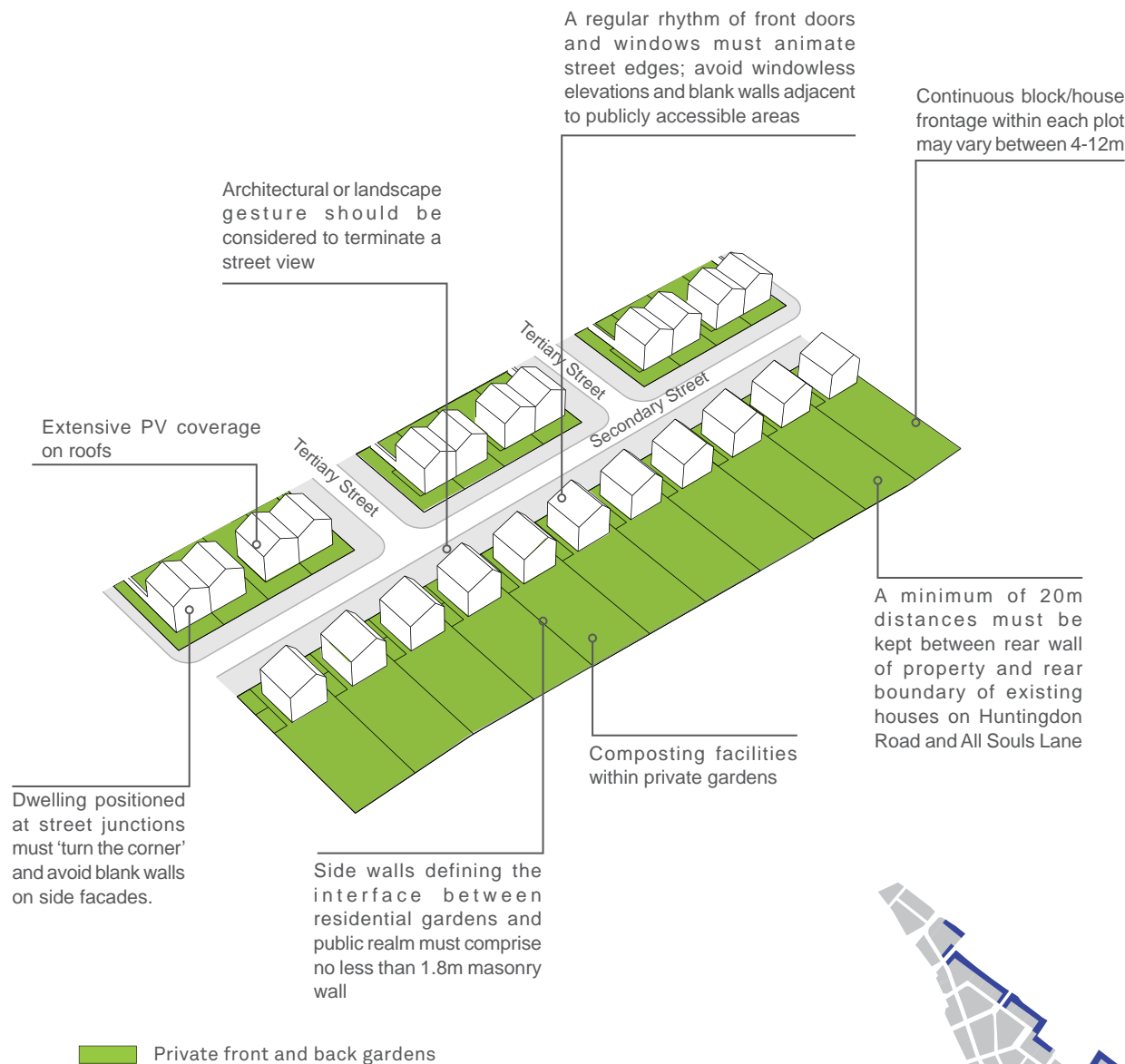


Figure 3.15 Typical Block on Development Edge

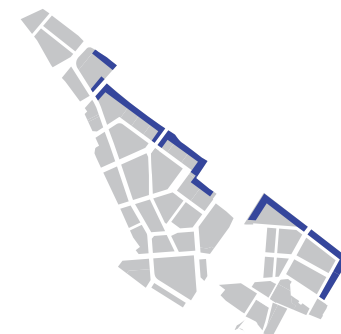


Figure 3.16 Areas Designated for Development Edge Block

## Block Type 2 - Access Mews

The Access Mews Block is designed as a complete perimeter block where primary dwelling frontages line the perimeter streets. For the mews, mew-house entrances must front onto the mews. These blocks must:

- create a comfortable mews environment which is pedestrian and cyclist-oriented rather than car-dominant;
- create a good street rhythm using regular front door access and windows; avoid a continuous row of garages or non-active frontage;
- provide step-free access between ground floor dwellings and mews;
- access to undercroft parking must be well-integrated to minimise negative impact on public realm; See Parking on page 75.



Well-designed garage doors can transform mews design

Integral parking at grade that does not detract from the public realm

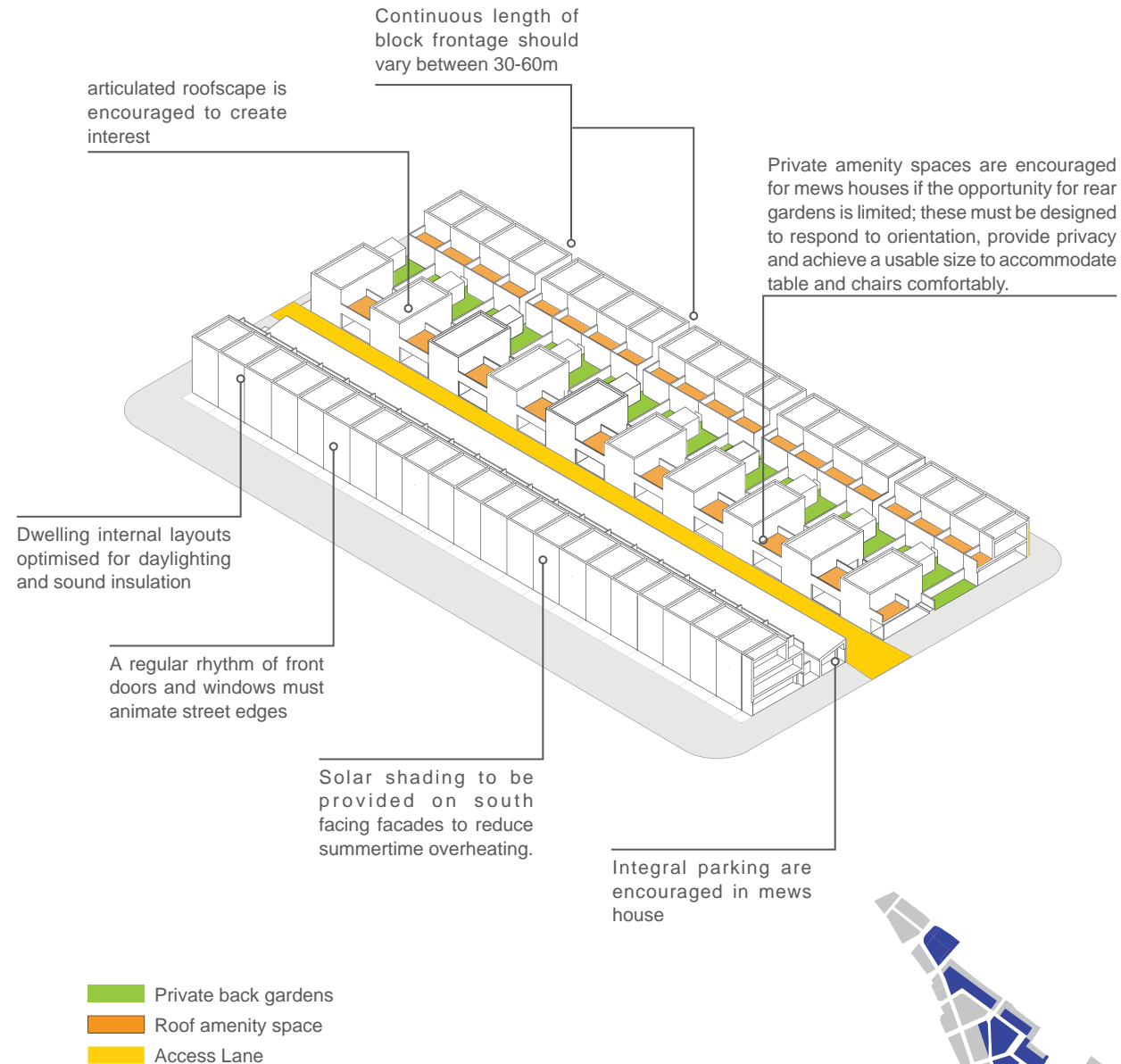


Figure 3.17 Typical Perimeter Block with Access Mews

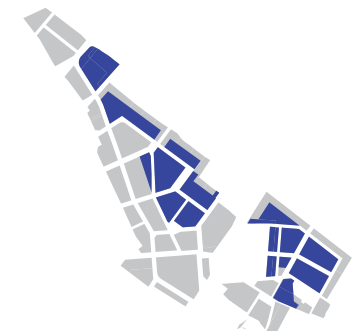


Figure 3.18 Areas Applicable for Access Mews Block



## Block Type 3 - Central Communal Courtyard

The Central Communal Courtyard Block is a perimeter block comprising a shared central courtyard which serves as a social and visual focus for residents. These blocks must:

- all dwelling front doors to be accessed directly from surrounding streets to delineate public realm;
- hold the street edge by building up to the privacy strip as set out in the Street Typology Table (Table 3.3 on page 52);
- design for privacy by working with existing topography; for example, ground floor dwellings can be slightly raised so that high level window provides 'eye-on-the-street' yet maintain privacy to ground floor residents;
- provide step-free access where possible between ground floor dwellings and communal courtyard(s);
- access to semi-basement parking must be well-integrated to minimise negative impact on public realm; See Parking on page 75;
- not allow through public pedestrian route to run through the block to create a completely secure internal courtyard environment.



Defensible space filled with dense shrubs to provide dwelling privacy and comfortable size Private outdoor space of usable size

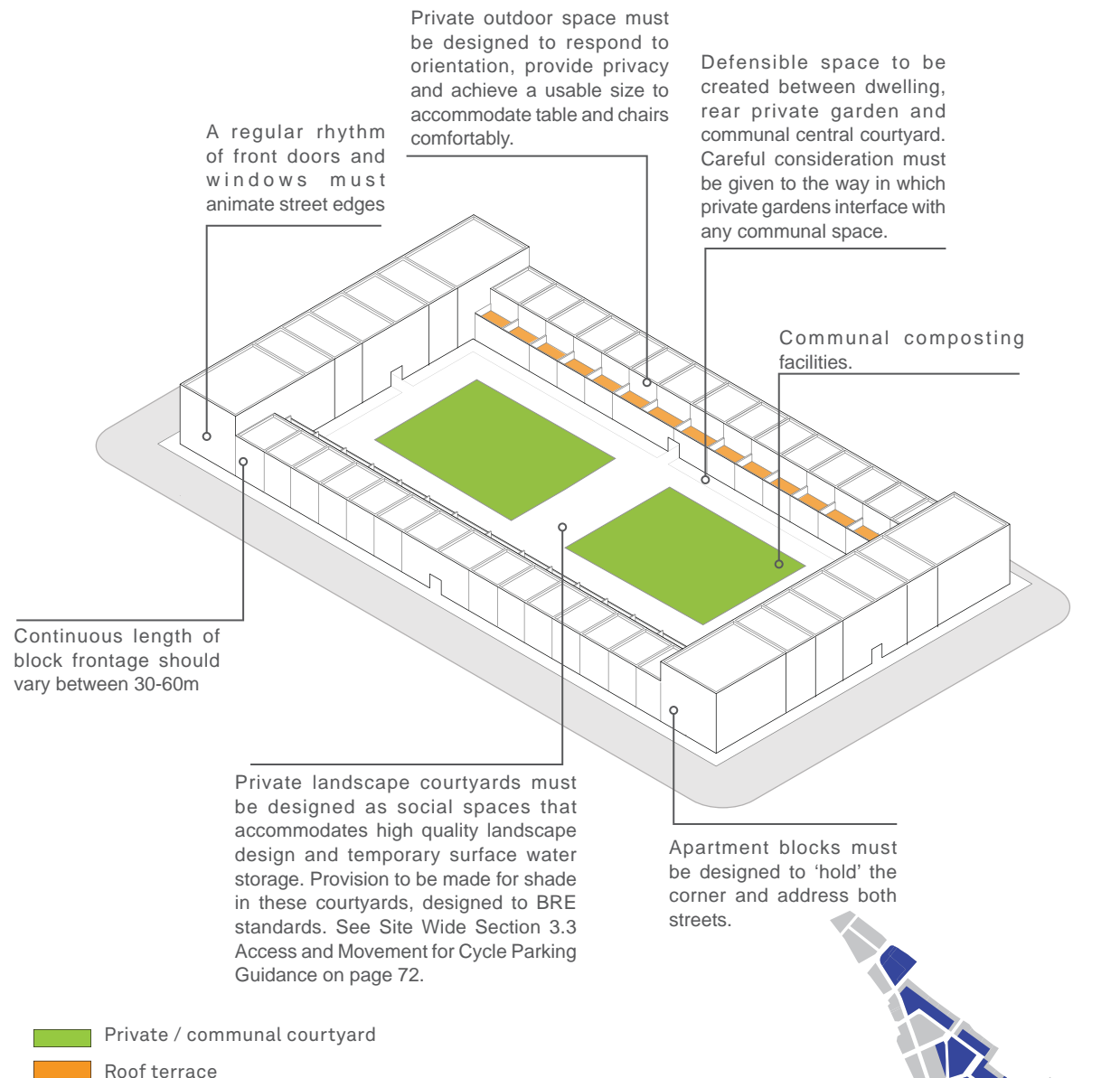


Figure 3.19 Typical Perimeter Block with Central Communal Courtyard

Figure 3.20 Areas Applicable for Central Communal Courtyard Block

## Block Type 4 - Back to Back Rear Garden

The Back To Back Rear Garden Block is a perimeter block comprising secure rear gardens in the centre and a mix of house types and apartments defining the street edges. These blocks must:

- clearly define public and private domains by locating all front entrances onto the surrounding streets;
- achieve a typical distance of 18m between building face to building face at the rear of dwellings to provide residential privacy. In exceptional circumstances only an absolute minimum of 12 m will be permitted;
- create good street rhythm by address the roofscape and create regular plot widths;
- accommodate a range of housing types to create a legible environment; house types must be varied and arranged to create a strong sense of place;
- not allow through public pedestrian route to run through the block to create a completely secure internal block environment.

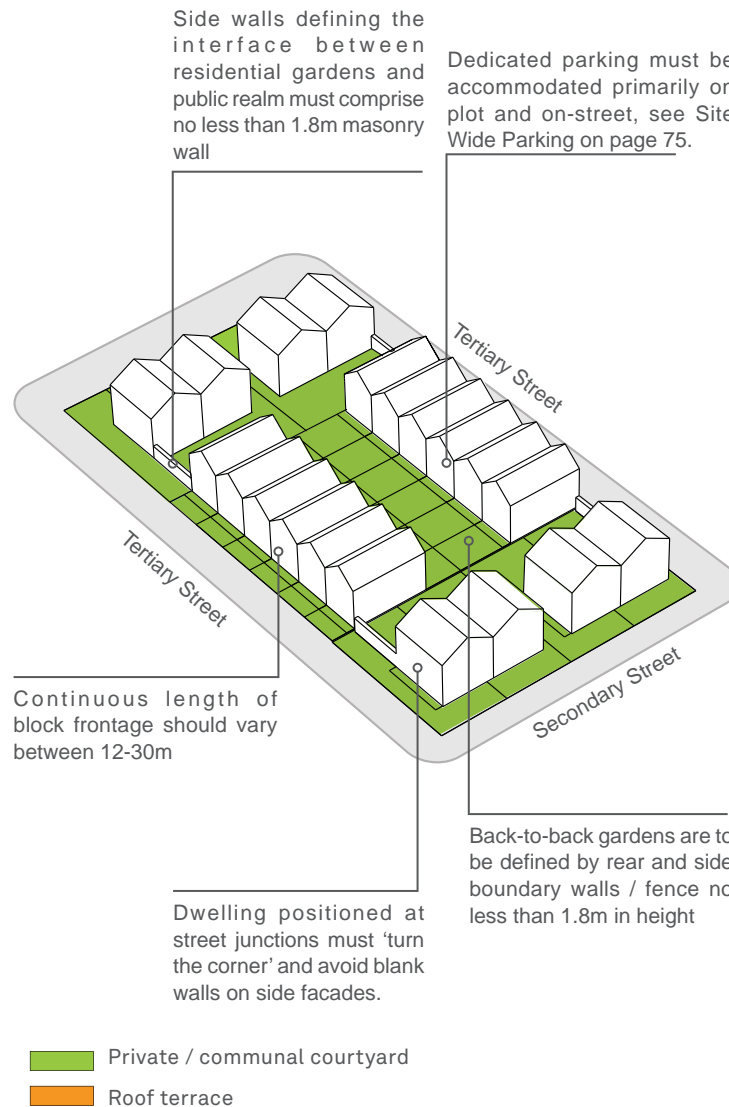


Figure 3.21 Typical Perimeter Block with Back to Back Rear Garden

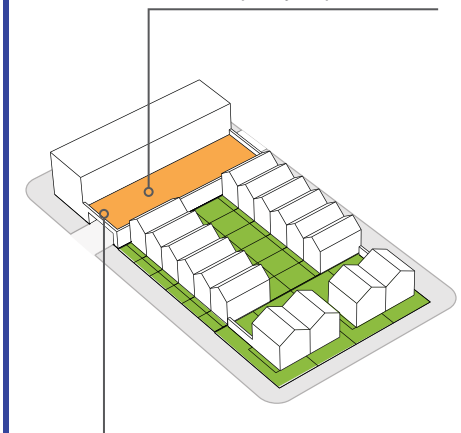


Front doors create a sociable urban realm

Good street rhythm

## Alternative Block Arrangement

For apartments, residents' parking for apartments must be accommodated within undercroft parking with private amenities above rather than at grade parking which will detract from the quality of public realm



Transition from higher density to low density should be accommodated within the length of a single perimeter block rather than creating drastic contrast on two sides of a street.



Figure 3.22 Areas Applicable for Back to Back Rear Garden Block

## Block Type 5 - Hybrid Block

The Hybrid Block is a perimeter block with a through access road embedded within it. This block type occurs in areas adjacent to the Ridgeway where no vehicular access is permissible. The embedded access road will allow refuse lorries and fire truck access. These blocks must:

- clearly define public and private domains by locating all front entrances onto the surrounding streets;
- achieve a typical distance of 18m between building face to building face at the rear of dwellings to provide residential privacy. In exceptional circumstances only an absolute minimum of 12 m will be permitted;
- create a comfortable mews environment which is pedestrian and cyclist-oriented rather than car-dominant;
- create a good street rhythm using regular front door access and windows; avoid a continuous row of garages or non-active frontage accommodate a range of housing types to create a legible environment; house types must be varied and arranged to create a strong sense of place;
- not allow through public pedestrian route to run through the shared/communal courtyard to create a completely secure internal block environment.



Defensible space filled with dense shrubs to provide dwelling privacy  
Comfortable and welcoming communal courtyard

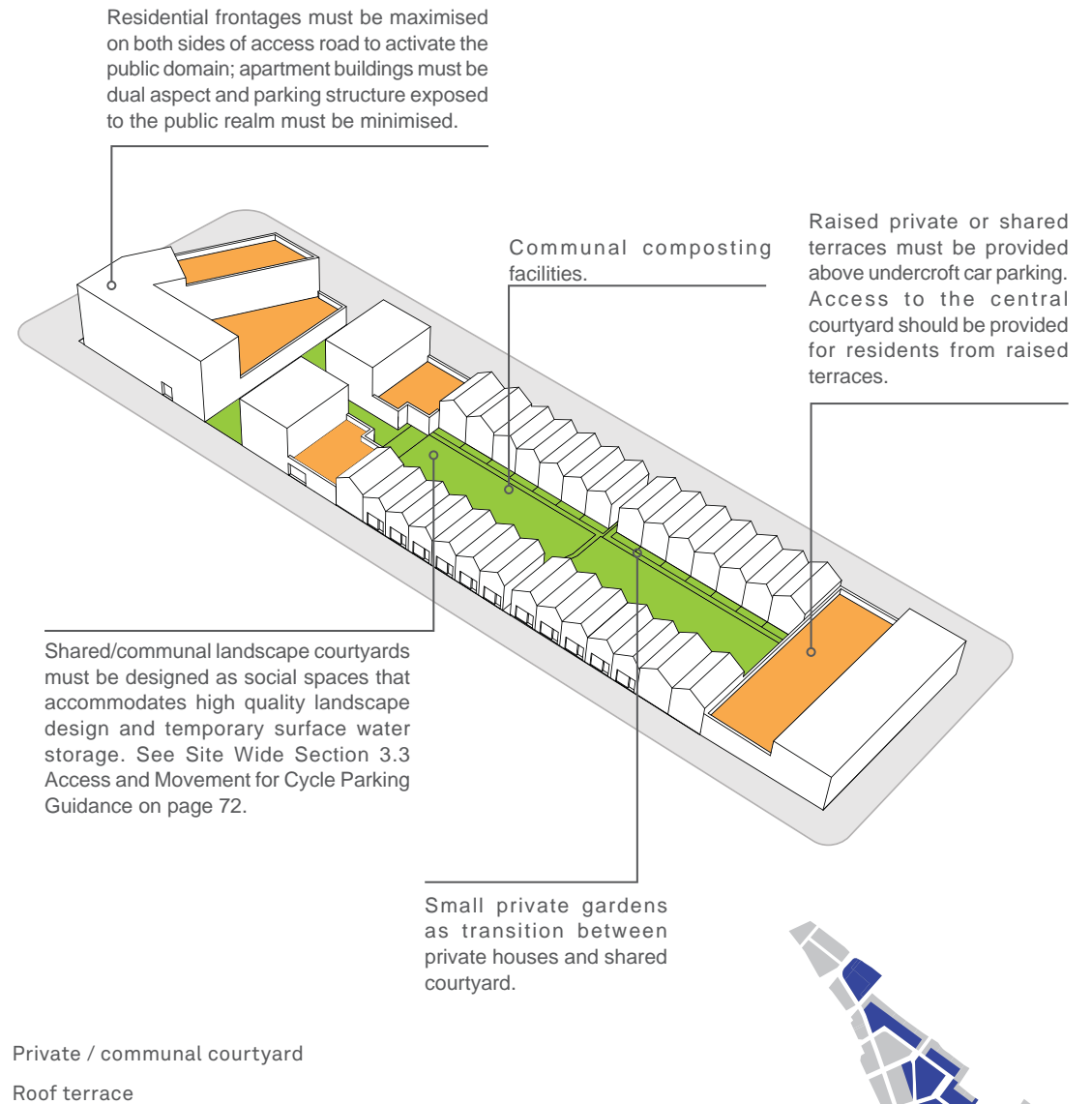


Figure 3.23 Typical Hybrid Block



Figure 3.24 Areas Applicable for Hybrid Block



## Block Type 6 - Residential Perimeter Block

The Residential Perimeter Block is a perimeter block comprising shared central courtyards which serve as a social and visual focus for residents. These blocks must:

- clearly define public and private domains by providing secure private courtyard(s);
- achieve broadly equal proportion of dwelling front-door access from central courtyard(s) and from surrounding streets to bring animation to the public realm;
- hold the street edge by building up to the privacy strip as set out in Street Typology Table (Table 3.3 on page 52);
- design for privacy by working with existing topography; for example, ground floor dwellings can be slightly raised so that high level window provides 'eye-on-the-street' yet maintain privacy to ground floor residents;
- provide step-free access where possible between ground floor dwellings and internal courtyards;
- minimise blank walls along ground floor elevations;
- access to semi-basement parking must be well-integrated to minimise negative impact on public realm; See Parking on page 75.

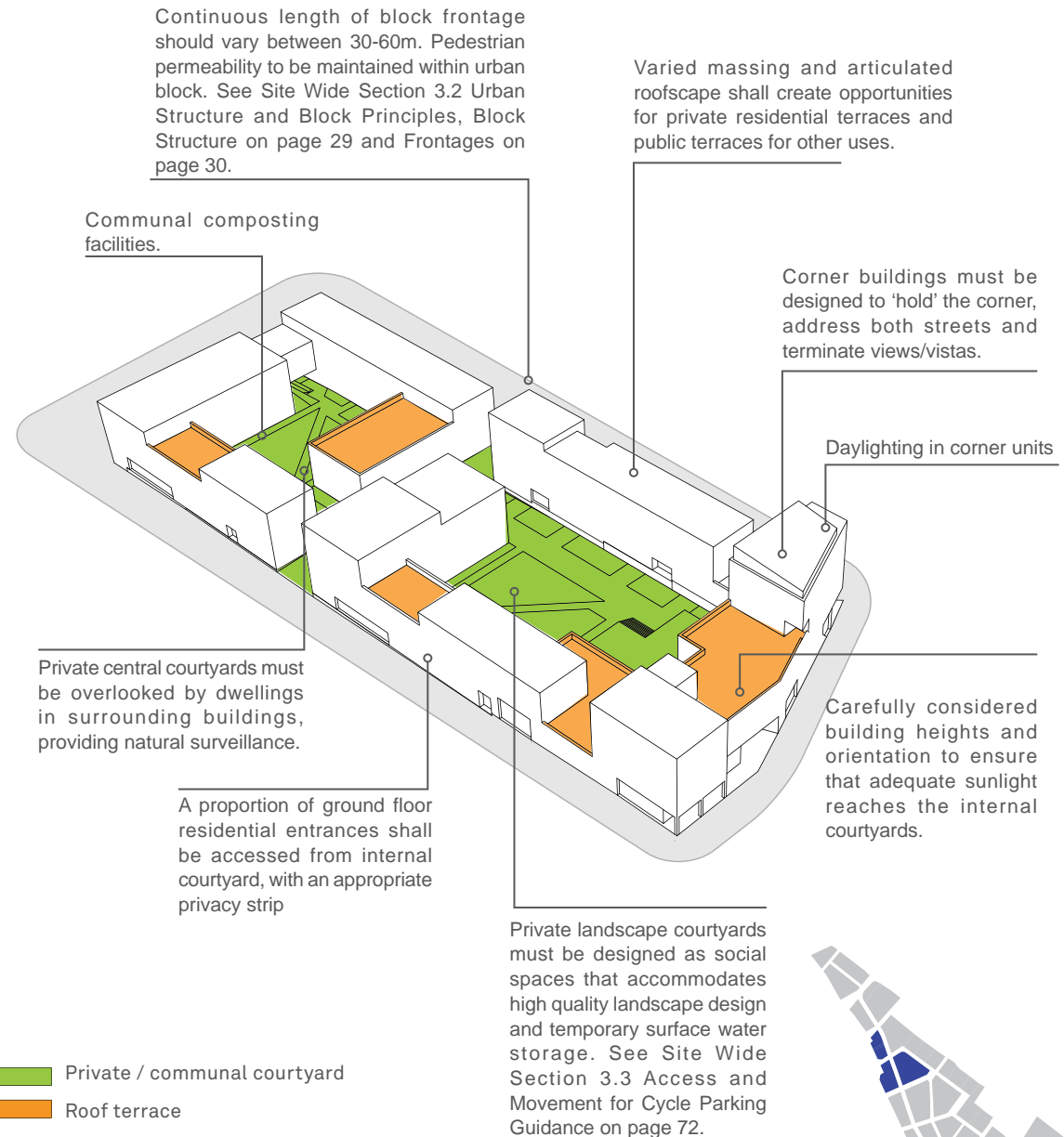


Figure 3.25 Typical Residential Perimeter Block



Buildings holding street edge by building up to privacy strip

Change in levels allow for privacy & natural surveillance on the street

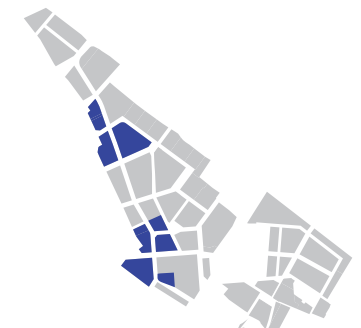


Figure 3.26 Areas Designated for Residential Perimeter Block

## Block Type 7 - Non-Residential Perimeter Block

The Non-Residential Perimeter Block is a perimeter block comprising public central courtyards which serve as a social and visual focus for local users. These blocks must:

- achieve dual aspect buildings that fronts onto perimeter streets as well as central courtyards;
- achieve broadly equal proportion of dwelling front-door access from central courtyard(s) and from surrounding streets to bring animation to the public realm;
- hold the street edge by building up to the privacy strip as set out in Street Typology Table (Table 3.3 on page 52);
- minimise blank walls along ground floor elevations;
- access to semi-basement parking must be well-integrated to minimise negative impact on public realm, see Parking on page 75;
- waste & recycling will be temporarily stored on-plot and managed through University and commercial management entities.



Academic building set within landscape courtyard



Change in levels are well integrated within urban block

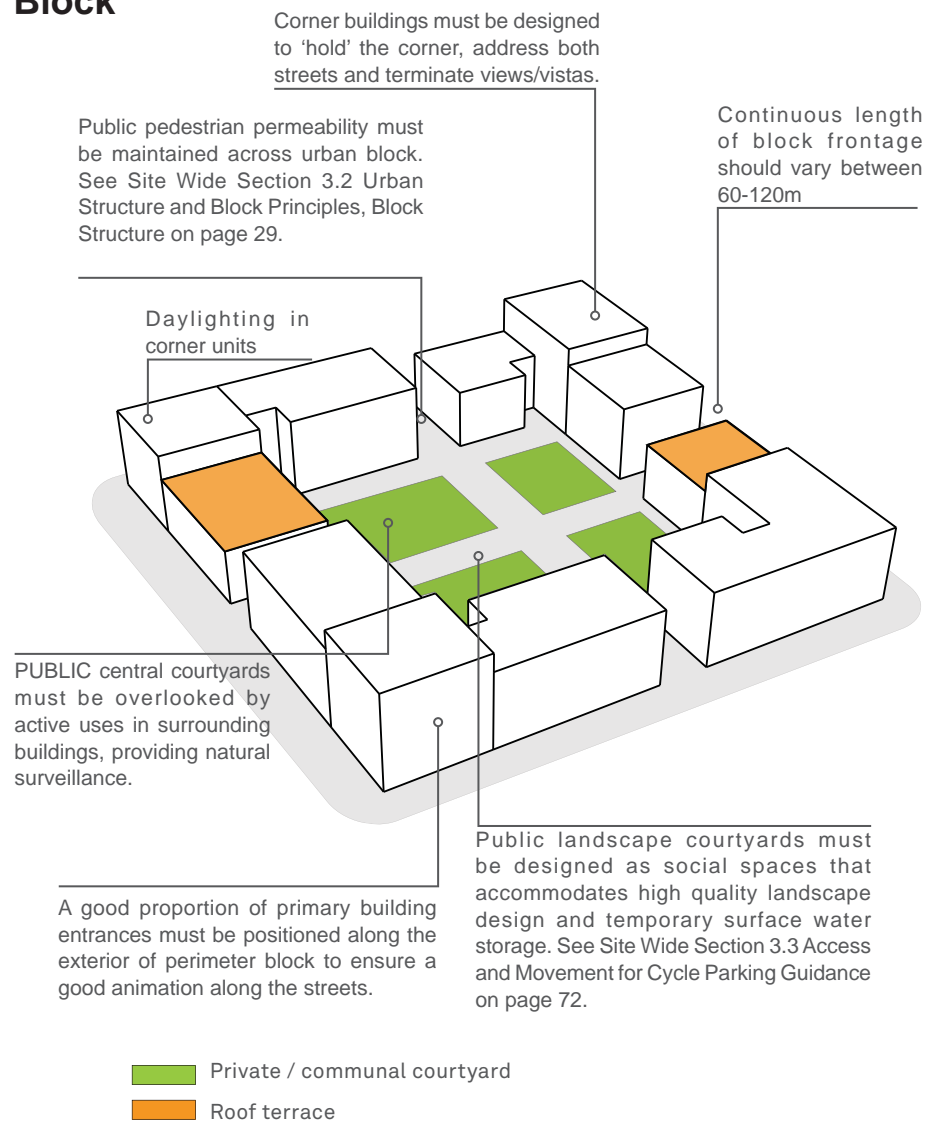
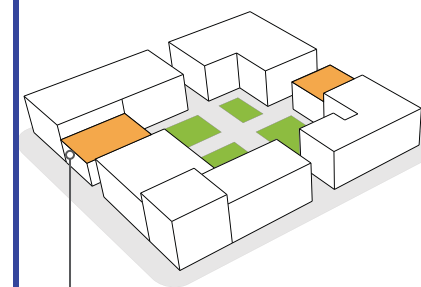


Figure 3.27 Typical Non-Residential Perimeter Block

## Alternative Block Arrangement



In order to accommodate floor-plate requirements for academic and research laboratories / work-spaces, deeper floor plates could be explored whilst retaining the perimeter block form as illustrated above.

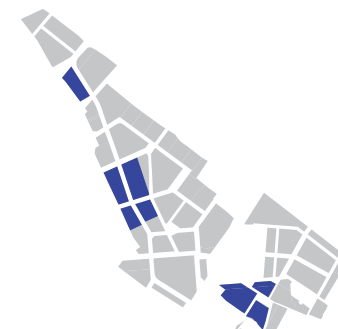


Figure 3.28 Areas Designated for Non-Residential Perimeter Block

## Block Type 8 - Local Centre Mixed Use Block

The Local Centre Mixed Use Block is a perimeter block with shared through access road or service yard at the centre to serve back of house operations. Due to the mixed use nature, these blocks must:

- maximise strong building fronts and primary entrances around the perimeter of the block;
- present, where possible, an active secondary frontage along the access road and service yard, where natural surveillance is achieved;
- for non-residential use - waste & recycling will be temporarily stored on-plot and managed through University and commercial management entities.



Angled facade provide privacy between adjacent buildings

Well-overlooked service yard

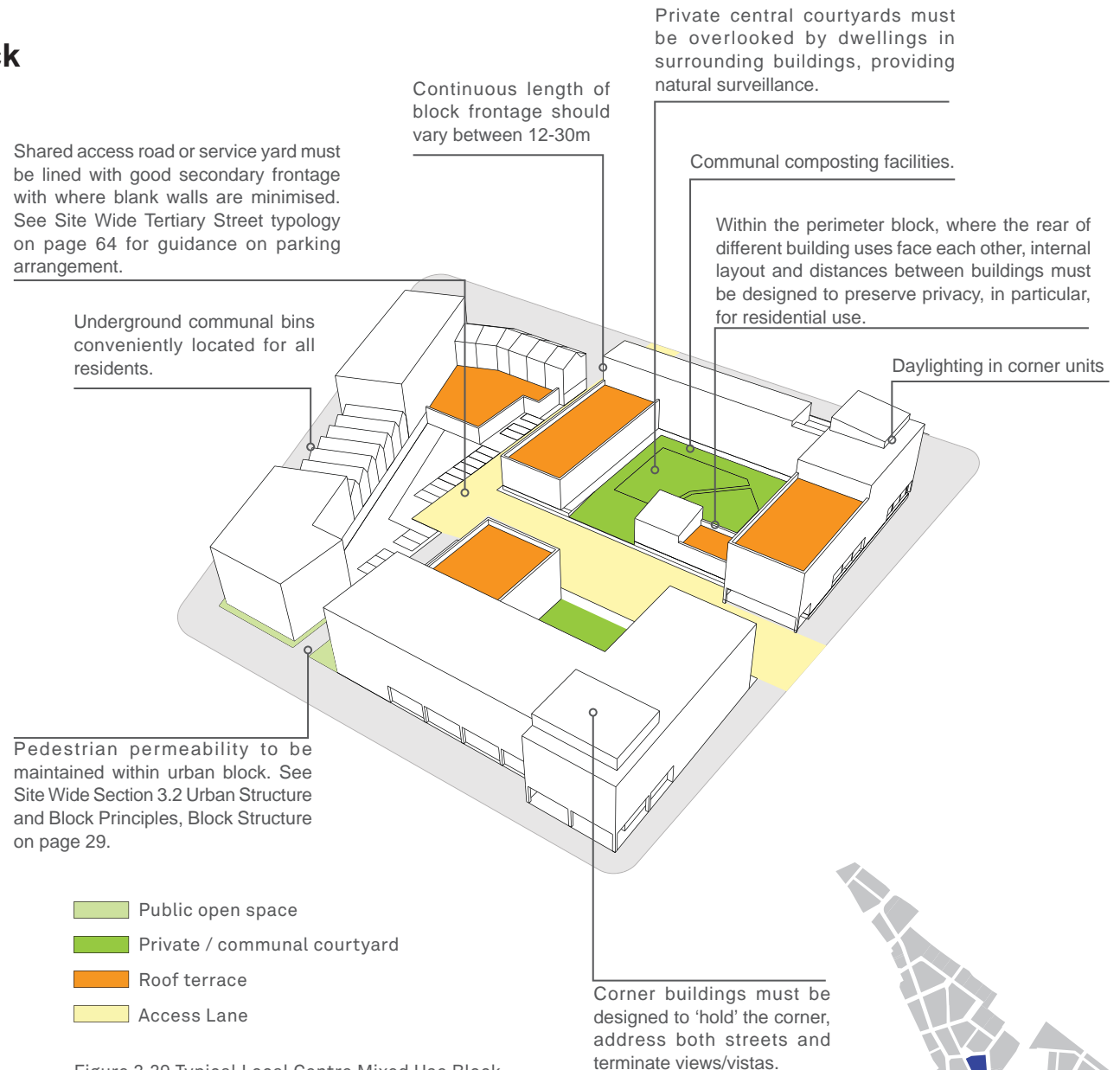


Figure 3.29 Typical Local Centre Mixed Use Block

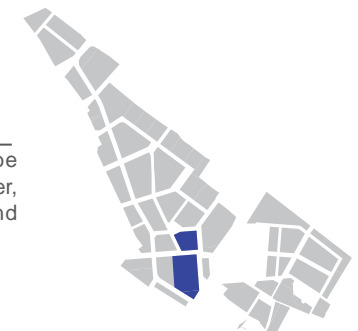


Figure 3.30 Areas Designated for Local Centre Mixed Use Block



## Block Type 9 - Linear Block

The Linear Block comprises dual-aspect buildings located between key open spaces and streets. These blocks must:

- be dual aspect to create a strong frontage to address open spaces as well as street edge;
- fulfil on-plot private parking requirements as set out within Parking on page 75; visitor parking is to be accommodated on street;
- parking must be provided in semi-basement car park and avoid parking at grade which will detract from the quality of the public realm;
- private landscaped areas should also be separated from the public realm, that is the street.



Building facade to engage with open space at ground plane



Active ground floor configuration to address key pedestrian/cycle routes

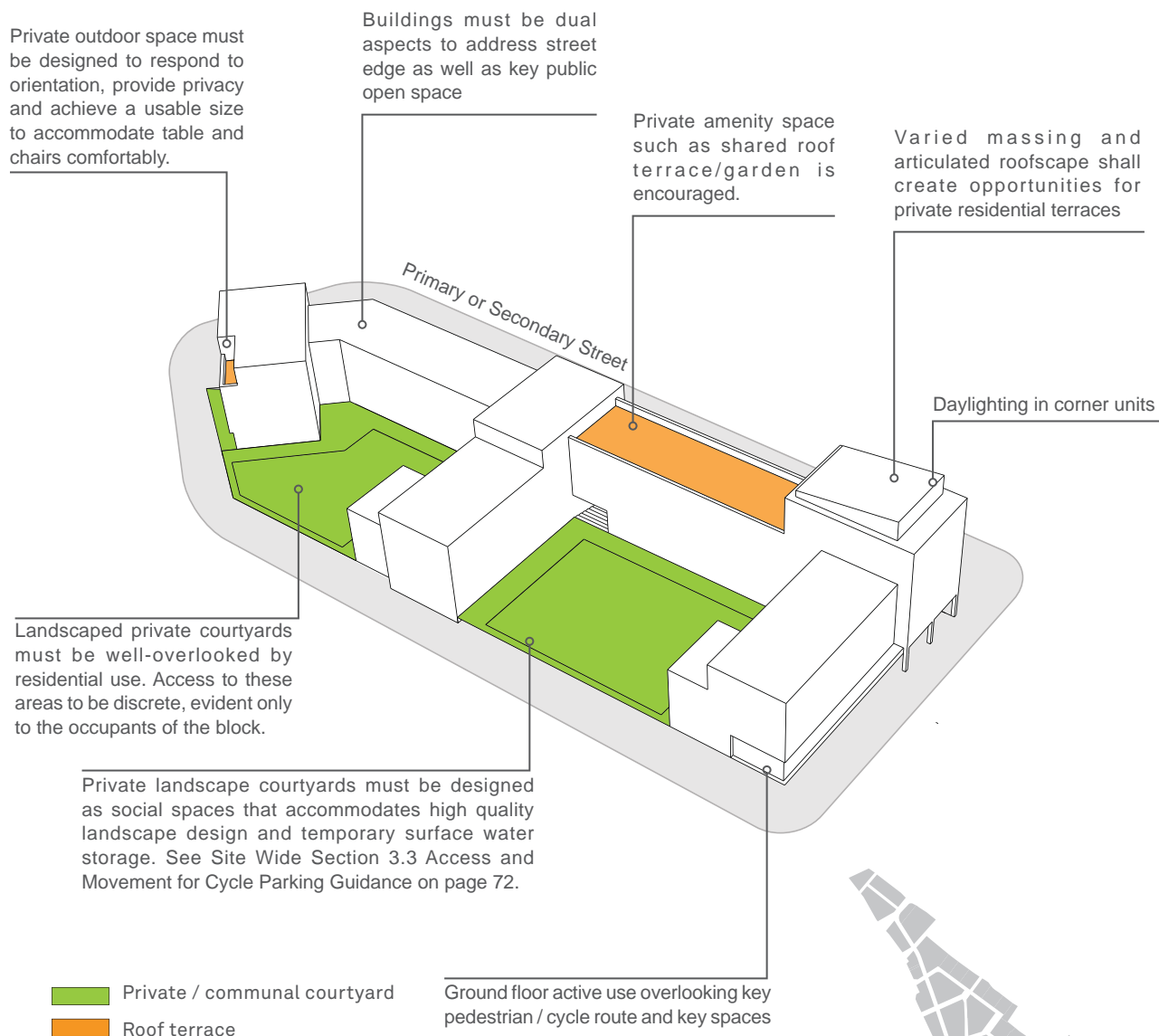


Figure 3.31 Typical Linear Block

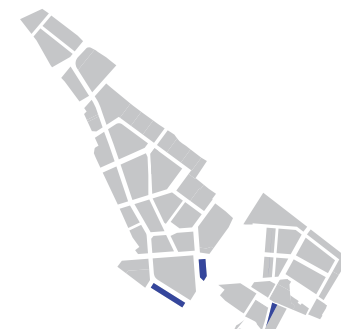


Figure 3.32 Areas Designated for Linear Block

## Block Type 10 - Special Block

The Special Block is a free-standing block where building(s) will address its edges 360 degrees around. Unlike the perimeter blocks, the Special Blocks are to be positioned to define and articulate open spaces and to create views & vistas. These blocks must:

- reinforce urban hierarchy of surrounding parkland context and serve as a landmark that is distinctive and form key points on serial vision on key routes;
- maximise active frontages (e.g. front entrances, windows, shop windows) along ground floor perimeter;
- minimise blank walls along ground floor elevations; minimise concentration of non-active frontage (e.g. fire exits) on any single elevation.
- In the context of North West Corner special blocks are required to allow for flexible programme and hence the appropriate urban interpretation to come forward.



Avoid blank ground floor facade

Entrances & windows to animate ground floor facade

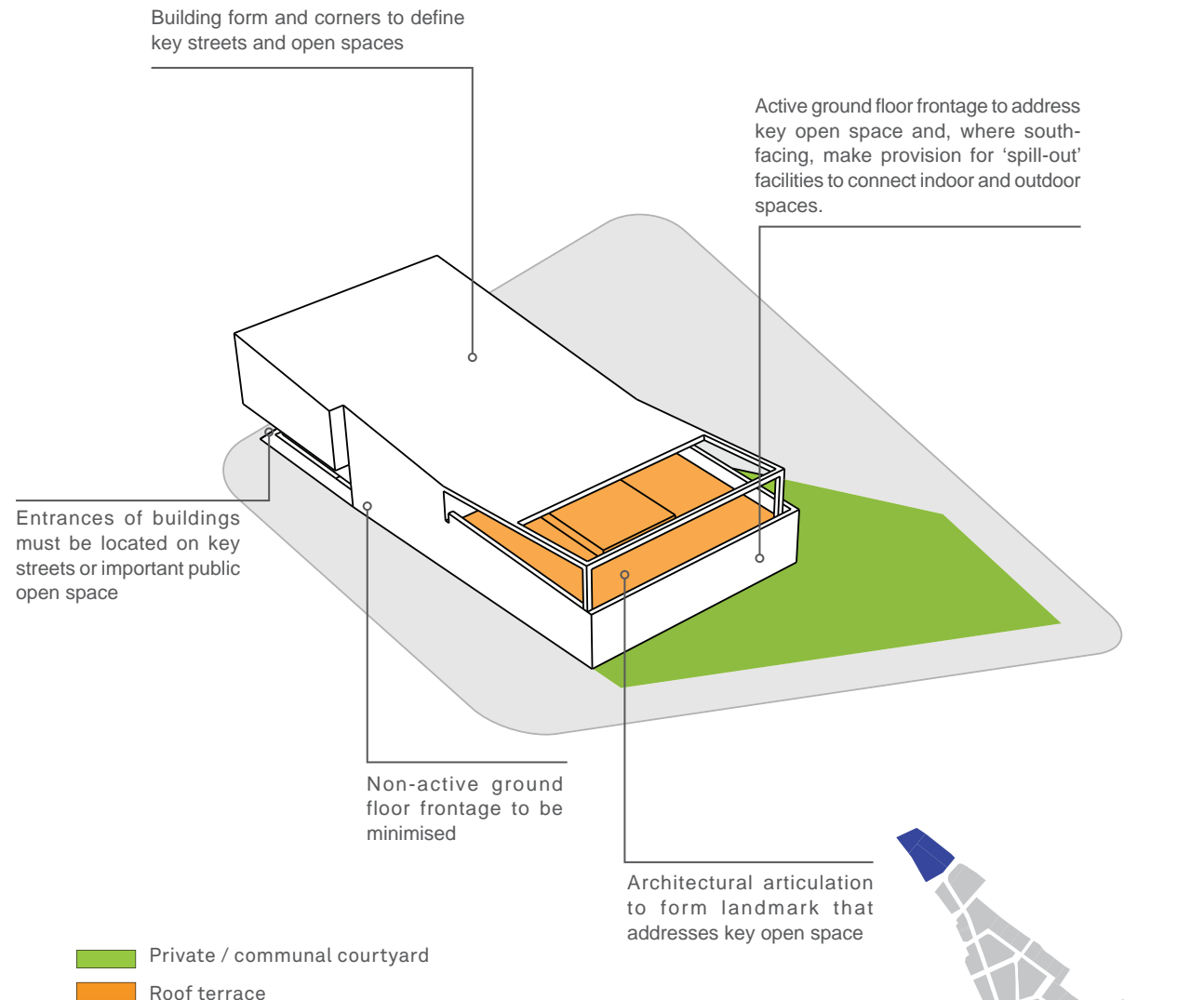


Figure 3.33 Example of a Special Block

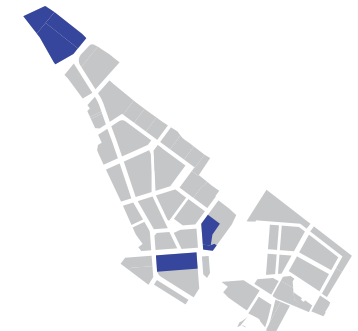


Figure 3.34 Areas Designated for Special Block

## Thresholds and Interfaces

This section provides guidance on the transition and defines the relationship between the public and private realms.

Front Boundary is where buildings front onto streets. It is an important element which helps form the streetscape. A coordinated front boundary treatment across North West Cambridge will help achieve a unified and cohesive environment. Specific threshold codes for these interfaces are laid down in this section.

4 types of interface treatments are proposed for North West Cambridge as shown on the adjacent plan. Table 3.2 Thresholds and Interfaces Design Considerations Table on the next page define the vertical aspect of the boundary treatment.

The horizontal aspect of the boundary treatment, the privacy strip will be dealt with in more details in Table 3.2 and the following pages, and in Chapter 4 Character Areas. The term 'privacy strip' refers to the set back area as defined by the plot boundary and the building line.

See Hard Material on page 106.

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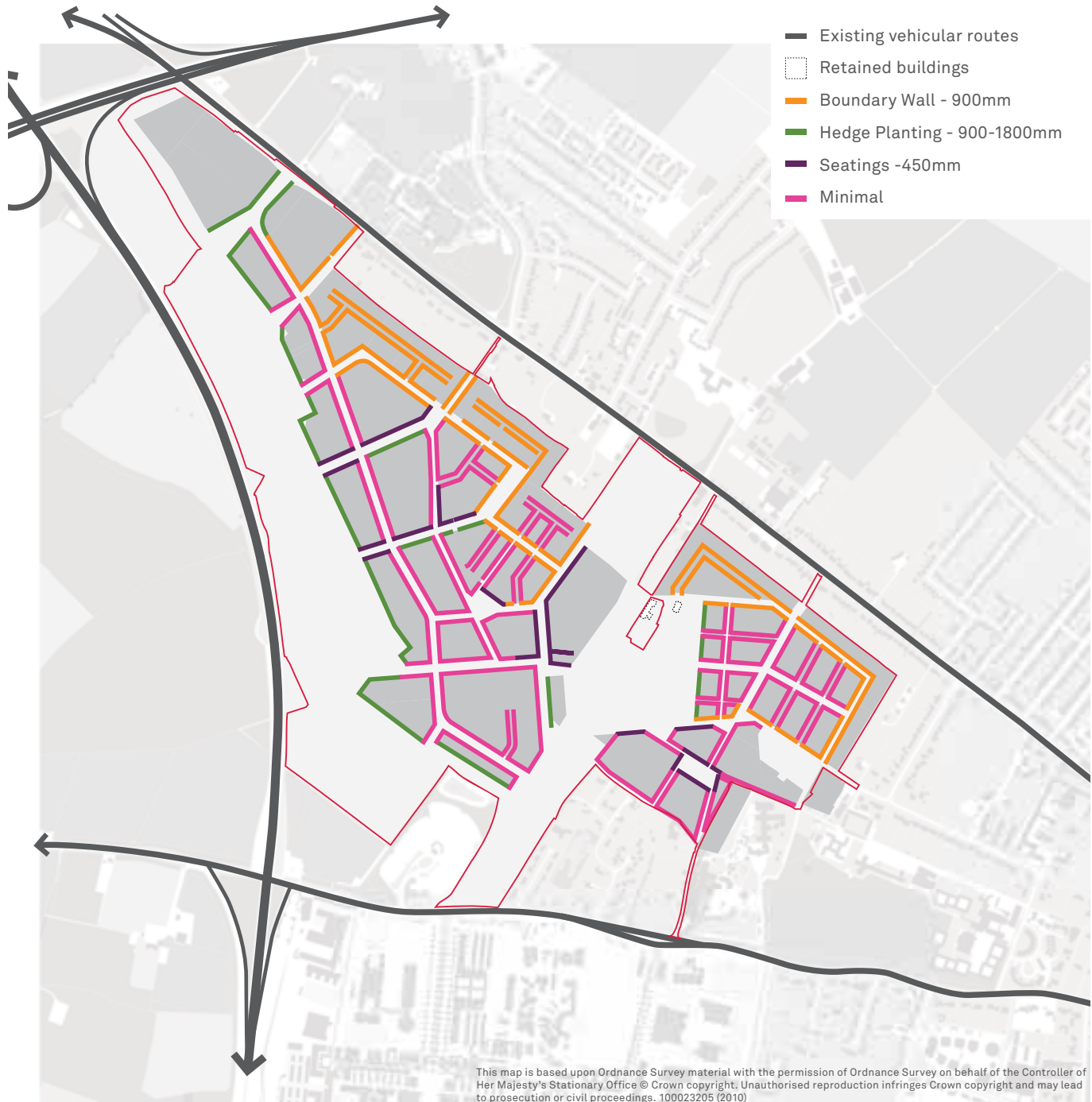


Figure 3.35 Thresholds and Interface Typology



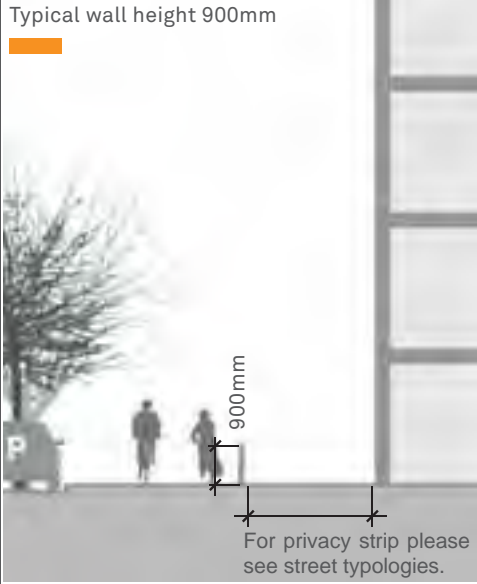
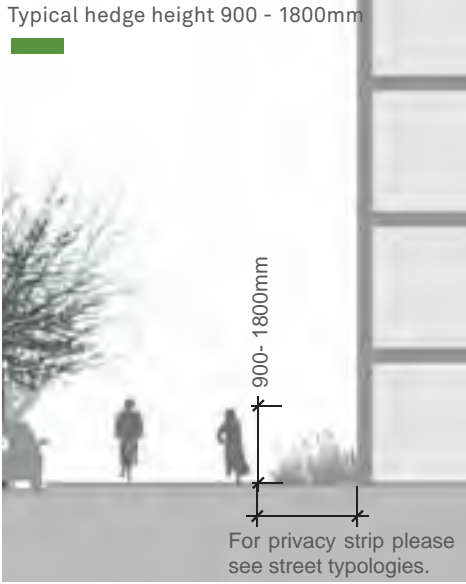
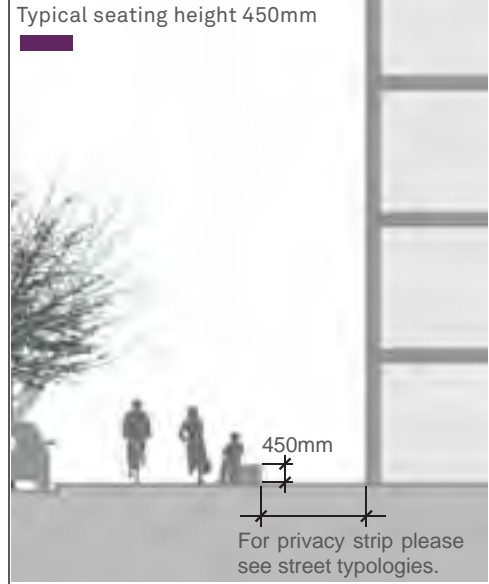
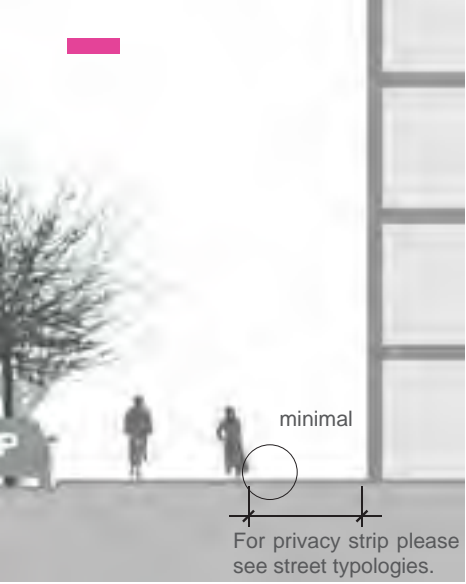
	Boundary Wall	Hedge Planting	Multi-purpose / Seating Zone	Minimal
Typical Elevation Profile	<p>Typical wall height 900mm</p>  <p>For privacy strip please see street typologies.</p>	<p>Typical hedge height 900 - 1800mm</p>  <p>For privacy strip please see street typologies.</p>	<p>Typical seating height 450mm</p>  <p>For privacy strip please see street typologies.</p>	 <p>For privacy strip please see street typologies.</p>
Design Considerations				
Key Principles	<ul style="list-style-type: none"> <li>Maintain defensible space and privacy for individual residential plot.</li> <li>Provide consistent domestic scale streetscape on residential streets.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain defensible space for residential and academic blocks especially those fronting key open spaces.</li> </ul>	<ul style="list-style-type: none"> <li>Provide predominantly south facing seating along green corridors / streets and key open spaces to add animation and sociability.</li> </ul>	<ul style="list-style-type: none"> <li>Create an urban hard edge character especially in residential mews conditions.</li> </ul>
Functions	<ul style="list-style-type: none"> <li>Suitable design for bike storage or private miscellaneous domestic storage.</li> <li>Front garden privately maintained.</li> </ul>	<ul style="list-style-type: none"> <li>Public Realm visual amenities.</li> <li>Visual screening for ground floor uses.</li> </ul>	<ul style="list-style-type: none"> <li>Private bike storage .</li> <li>Public art features and lighting.</li> </ul>	<ul style="list-style-type: none"> <li>Private patio planting</li> <li>Private bike storage</li> </ul>
Materials / Planting	<ul style="list-style-type: none"> <li>Wall: masonry construction. Whilst the final selection of materials remain flexible. Developers and designers should strive to achieve a consistent character.</li> <li>Privacy Strip Planting: mix of native and ornamental shrubs, perennials and groundcovers.</li> </ul>	<ul style="list-style-type: none"> <li>Privacy Strip Planting: mix of native and ornamental shrubs.</li> </ul>	<ul style="list-style-type: none"> <li>Seating: low masonry wall with masonry or timber seating.</li> <li>Privacy Strip Planting: mix of native and ornamental shrubs, perennials and groundcovers.</li> </ul>	<ul style="list-style-type: none"> <li>Paving: regular block paving with granite setts defining the plot boundary line.</li> </ul>

Table 3.2 Thresholds and Interfaces Design Considerations Table

The key principles for the landscape treatment of thresholds and interfaces are as follows:

- Privacy: the interface between the buildings and the public space needs to be well designed to maintain privacy and surveillance of the street. A balance needs to be struck - landscape, changes in heights and setbacks can all assist with this.
- Planted privacy strips: mix of native and ornamental shrubs, perennials and groundcovers which compliment the streetscape, “On Plot Landscape”, and

residential character. These will also form an aesthetic feature for ground floor residents. There will be a maximum plant height of 1000mm to maintain privacy. (1)

- Views are maintained from ground floor windows, whilst providing privacy and security via planting. (2)
- Planted window boxes incorporated where possible to add to the character and setting of the streetscape or “On Plot Landscape”, and providing an aesthetic feature for adjacent buildings. (3)

- Boundary Wall - 900mm
- Hedge Planting - 900-1800mm
- Seatings -450mm
- Minimal
- On Plot Landscape: with planted privacy strips along building frontages ( where appropriate)



Figure 3.37 On plot landscape treatment of thresholds



Figure 3.36 Illustrative Section - Landscape edge treatment

Well integrated defensible space with good size space for bike storage. Consistent hedge planting enhance public realm and provides additional screening for privacy. ✓



Inconsistent boundary treatment in terms of materials, colours, heights and form detracts from the public realm and therefore should be avoided. ✗



In mews and shared surface streets, minimal boundary treatment creates an intimate urban character. Greenery, in the form of climbers, shrubs and pot plants, along privacy strip adds visual interests and gardening activities create opportunity for interactions between neighbours. ✓



Consistent boundary treatment across dwelling and plot boundaries will unite streetscape and create a high quality public realm. ✓



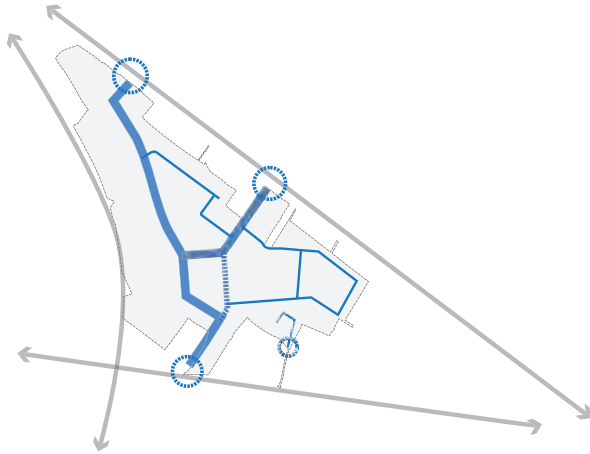
Along key open spaces and in particular those with south-facing aspects, seating on low boundary walls is to be provided to encourage an active and sociable public realm. ✓



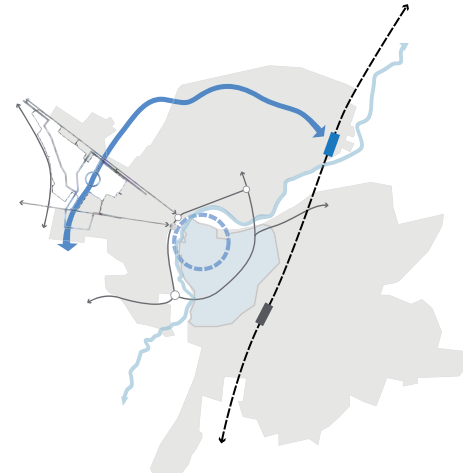


### 3.3 ACCESS AND MOVEMENT

#### Street Hierarchy and Typology



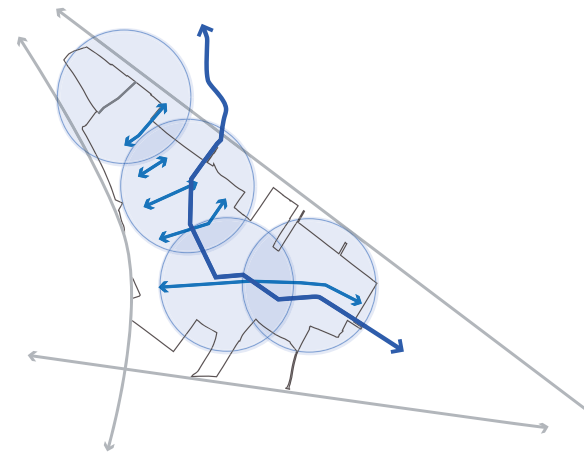
#### Public Transport



#### Cycle Network



#### Pedestrian Network



## Street Hierarchy and Typology

There are 4 street types in North West Cambridge. Details of these street types are set out in the Street Typology Table (Table 3.3) overleaf. The Primary Street is to be offered for adoption by Cambridgeshire County Council. The Primary Street enables good public transport accessibility and it is made up of three main components including:

- a connecting route running west and south from Huntingdon Road to Madingley Road, around two sides of the local centre;
- a connecting route running from Huntingdon Road around the north side of the Local Centre;
- a short section of public transport and access only around the east side of the Local Centre.

These street types will be designed in accordance with *Manual for Streets* to restrict vehicle speeds to a maximum of 20 miles per hour, and to minimise rat-running. Pedestrian/cyclist crossing facilities will be provided on key desire lines to deliver priority for non-car modes. The primary street network is supplemented with two secondary loops. Together with the primary network they create smaller parcels which consist mainly of tertiary streets. These streets have an emphasis on pedestrian movement. In parallel with vehicular and public transport networks a comprehensive cycle and pedestrian network will be created. These routes provide linkages into existing and proposed surrounding developments.

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Figure 3.38 Street Hierarchy

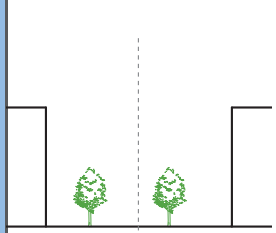
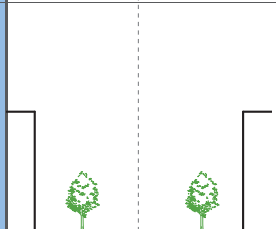
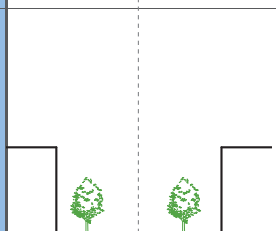
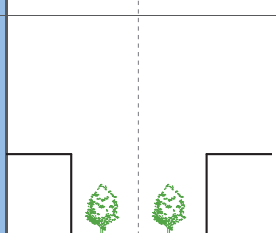
Street Typology		Street Dimensions										Access & Parking			
		Privacy Strip	Footpath / Service Corridor	Cyclelane	Parking / Layby / SuDS / Landscape / Bins	Total Carriageway Widths		Parking / Layby / SuDS / Landscape / Bins	Cyclelane	Footpath / Service Corridor	Service Corridor District Heating	Privacy Strip	Direct parcel access	Direct Vehicular Access to Properties	Vehicular Access to Parking Courts
Primary Streets		Building Line to Building Line Width 25 - 27m										Yes	Yes	Yes	Yes: 1) one side parallel or refuse vehicle layby with SuDS opposite; or 2) both side parallel parking or refuse vehicle
			Adoptable Width 23 - 25m												
		0 - 2.0	MIN 2.0	MIN 2.0	3.0-6.0	MIN 6.10m	MIN 2.9	MIN 2.0	MIN 2.0	2.0	0 - 2.0				
Bus Gate Street		Building Line to Building Line Width 28m										Yes	Yes	Yes	Yes, both sides parallel / angled parking, within line of landscape
			Adoptable Width 26m												
		0 - 0.6	MIN 2.0	-	MIN 5.1	MIN 6.10m	MIN 5.1	-	MIN 2.9	2.0	0 - 0.6				
Secondary Streets		Building Line to Building Line Width 22m										Yes	Yes	Yes	Yes, both sides parallel (min 2.9 wide) / one side perpendicular (max 5.0m wide) parking, with the rest as landscape.
			Adoptable Width 20m												
		0 - 5.0	MIN 2.0	-	MIN 2.9	MIN 5.0m	MIN 2.9	-	MIN 2.0	2.0	0 - 5.0				
Tertiary Streets		Building Line to Building Line Width 19.0m										Yes	Yes	Yes	Yes, both sides parallel parking, with the rest as landscape
			Adoptable Width 15.0m												
		0 - 5.0	MIN 2.3	-	MIN 2.4	MIN 5m for street with kerbs MIN 6m for shared space	MIN 2.4	-	MIN 2.3	-	0 - 5.0				

Table 3.3 Street Typology Table

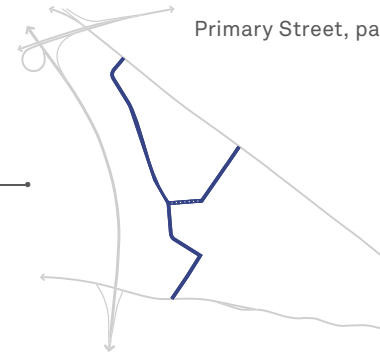
Privacy Strip and District Heating Corridor can be overlapped.



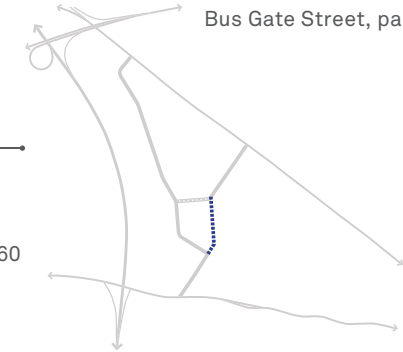
Highway Requirements					
Vehicular Swept Paths	Junction Sightlines (x/y)	Junction Spacing - Same Side / Other Side	Junction Radi	Target Speed	Horizontal Traffic Calming Measures
All Vehicles	2.4/24.5	40m	MIN 10m* between primary street and primary street 4m* between primary street and	Max 20mph	Through Alignment and Parking Bays along Carriageway
All Vehicles	2.4/24.5	60m	MIN 6m*	Max 20mph	Gate and Shared Surface
Refuse, Removals and Emergency	2.4/24.5	45m	MIN 2.5m*	Max 20mph	Through Alignment and Parking Bays along Carriageways
Refuse, Removals and Emergency	2.4/24.5	45m	MIN 2.5m*	Max 20mph	Through Alignment and Parking Bays along Carriageways

NOTE : Primary street will be offered for adoption by the County Council

Primary Street, page 56



Bus Gate Street, page 66



Secondary Street, page 60



Tertiary Street, page 64



## Achieving a Low Speed Environment

In North West Cambridge, the key to a pedestrian friendly neighbourhood is the reduction of vehicle speed, which allows for the reclamation of much more of the street for pedestrians. The use of urban design elements implemented in the street will establish lower speeds on the highways, creating a safer environment for pedestrians. The overarching reason for promoting a 'shared space' approach is to create pedestrian friendly, accessible high quality spaces. It is therefore important to establish key principles to inform and guide the design of all streets, including the ridgeway.

### Key principles include:

- Low speed design – the creation of a low speed environment is one of the most important factors in determining the relationship between people, places and traffic. Low speeds should be created through self-reading streets, rather than through enforcement and legislative speed limits.
- Placemaking at intersections/junctions – this principle seeks to create a legible sequence of spaces set within the network of streets. Creating a series of 'events' within the network can help to create visual 'breaks' in the carriageway, help to reduce the linear qualities of the streetscape which in turn help to reduce speeds.
- Clear junctions/crossings – this principle seeks to define the transition between route

hierarchies, to help emphasise the contrast between speeds contexts. Careful attention to nodes or points of entry can also help to increase drivers and cyclists awareness of the context and other activities associated with the streetscape.

- Accessibility – the streetscape should aim to provide simple and unobtrusive guidance and navigational clues to maximise accessibility, particularly for vulnerable pedestrians. The use of blister and corduroy paving in accordance with DDA standards will be sited at key crossing points to provide navigational guidance for disabled users. The colour, texture, and stone type of these units will compliment the character of the adjacent surface materials and streetscape.
- Integrated on street parking – where on street parking is appropriate, the code should seek to design such spaces as an integral component of the streetscape.

### Principle design elements:

- 1 Minimising corner radii – this is key to keeping speeds low.
- 2 Introduction of courtesy crossings – the use of informal courtesy crossing to frequent intervals, informed by natural pedestrian flows or pedestrian desire lines. They help to reduce the linear qualities of the carriageway.
- 3 Defining entry points – this carries on from the principle of clearly defining crossings. Key nodes can be reinforced through changes in dimensions, reduced visual widths of the street (kerb and edge detail), changes in colour and texture of materials, and through planting and trees.
- 4 Clearly defined on street parking - Introducing a specific material for parking bays, distinct from the carriageway, helps to further reduce apparent carriageway widths and can give clarity and legibility to the streetscape.
- 5 Removal of centre-line markings – these are not needed with narrow carriageway.

See also Raised Table on page 71.

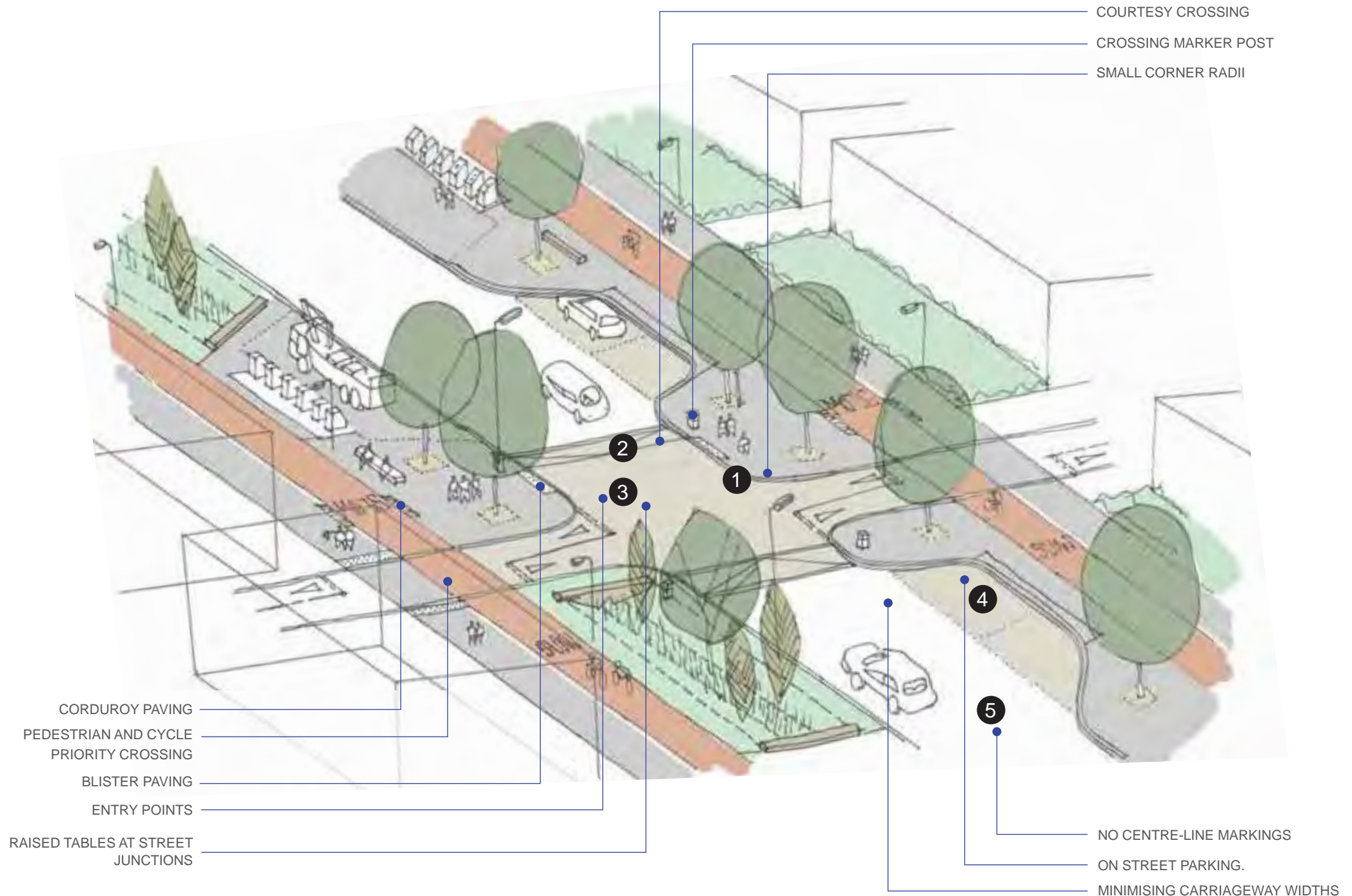


Figure 3.39 Illustrative Sketch of a low speed environment



# Primary Street Scenario 1 With Swale

Primary Street is a tree lined boulevard; Scenario 1 has SuDS on one side of the street and a landscape corridor containing the district heating corridor on the other. (See Section 3.5 Infrastructure, District Heating Scheme on page 118 and SuDS and Surface Water Drainage on page 126.)

Parallel parking and bin lay-bys will be accommodated at intervals along the street and will service the adjacent buildings and residential development (See Section 3.6 Sustainability, Operational Waste Management on page 136). The spaces between parking and bin lay-bys will form the SuDS and ecological

Street Dimensions		
1	Carriageway width	6.1m
2	Swale / raingarden width	2.2m min
3	Footpath width	2m
4	Cycle lane width	2m
5	DH Corridor / Privacy strip width	2m min
6	Bin lay-by width	3.475m
7	Bin zone width	2m
8	Tree spacing	To achieve sustainable tree planting on streets, adequate rooting and branch space must be allowed. Refer to <i>Cambridgeshire Design Guide</i> . Min. 8m from building edge. Min. 2.25m clear stem height. 1.5m min. from path/ street edges.
9	Parking lay-by width	2.9m min
10	Parking spaces arrangement	3 max in parking zone lay-by
11	Island width ( where applicable)	1.5m min
12	Raised crossing / table	Varies
13	Raised table ramp gradient	1:20 slope

Table 3.4 Primary Street Scenario 1 Design Dimensions

planting on one side of the street, whilst on the other side will be native planting.

Integrated cycle and foot paths will line both sides of the Primary Street forming a strong route through the development. See Pedestrian and Cycling on page 70.

There will also be raised tables and crossings, which will be flushed with the adjacent kerb edge, cycle and foot paths. These will occur at junctions or key connections such as the Ridgeway. See Raised Table on page 71.

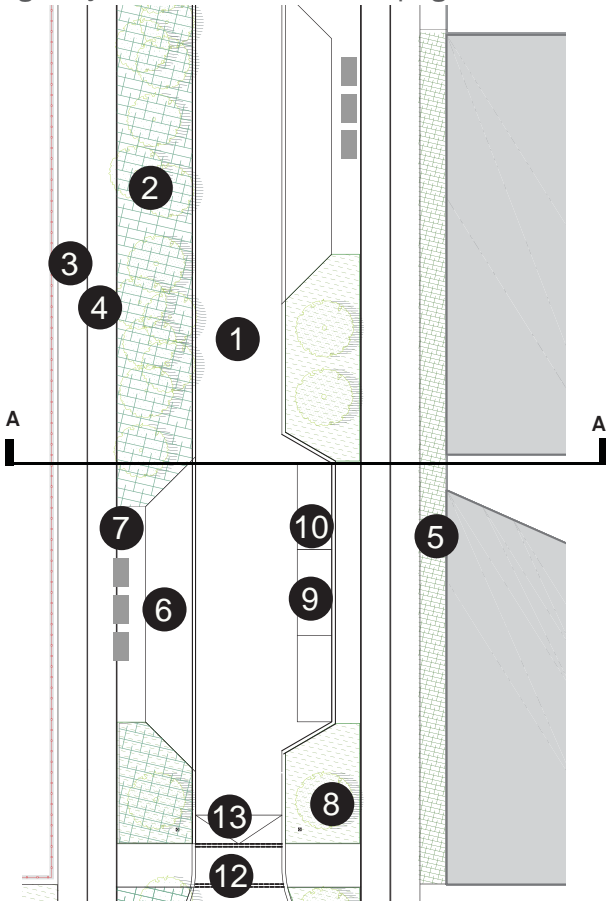


Figure 3.40 Primary Street Scenario 1 Illustrative Plan

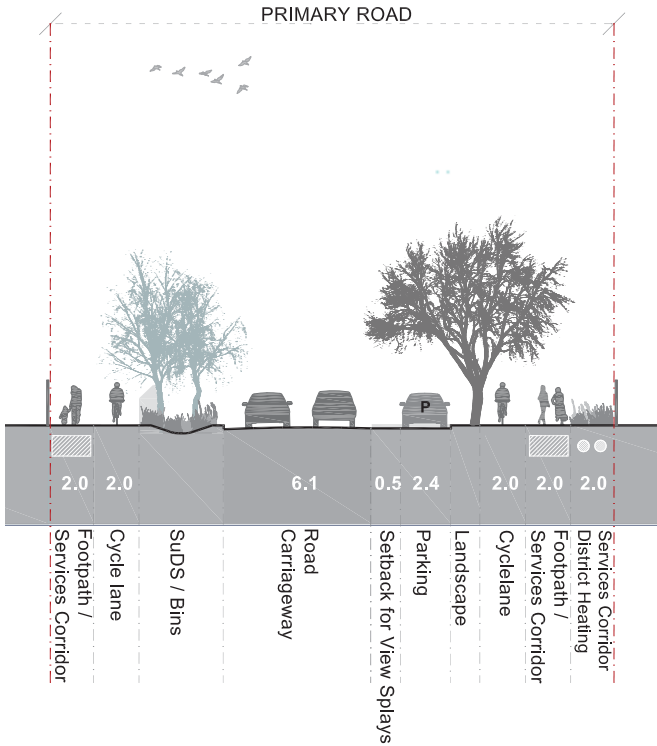


Figure 3.41 Primary Street Scenario 1 Illustrative Section A-A

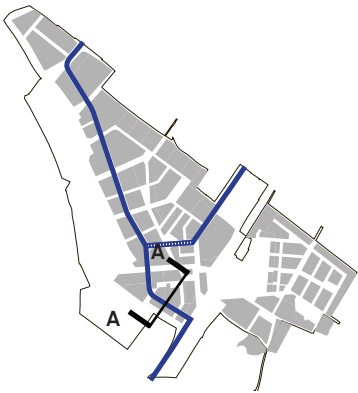


Figure 3.42 Primary Streets Key Plan

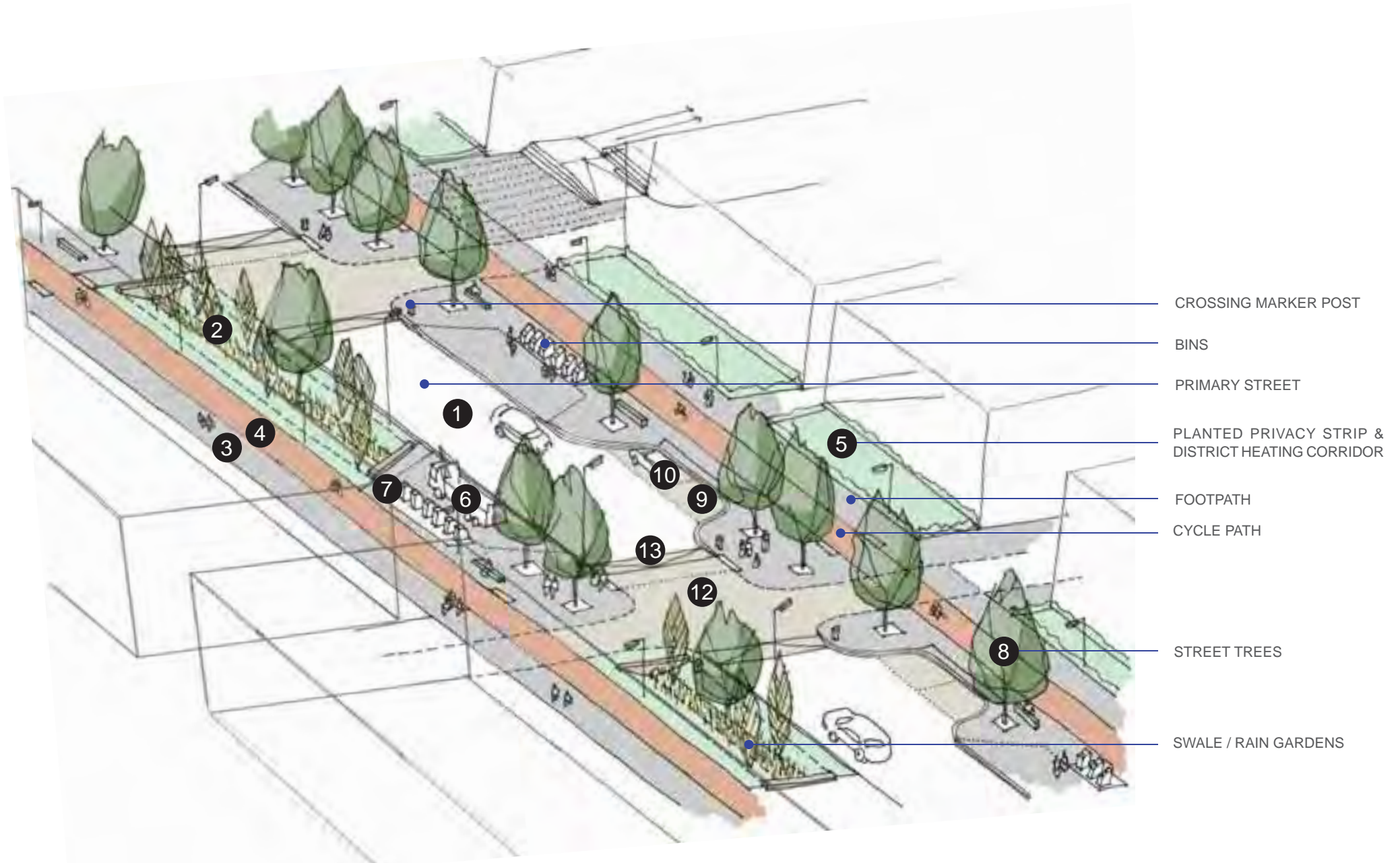


Figure 3.43 Illustrative Sketch of Primary Street Scenario 1

# Primary Street

## Scenario 2

Primary Street is a tree lined boulevard; Scenario 2 has a landscape corridor containing the district heating corridor on one side of the street. There will be no swales along this street. (See Section 3.5 Infrastructure, District Heating Scheme on page 118.)

Parallel parking and bin lay-bys will be at intervals along the street and will service the adjacent buildings and residential development (See Section 3.6 Sustainability, Operational Waste Management on page 136). The spaces between parking and bin lay-bys will be predominantly hard landscape surfacing with

Street Dimensions		
1	Carriageway width	6.1m
2	Footpath width	2m
3	Cycle lane width	2m
4	DH Corridor / Privacy strip width	2m min
5	Bin lay-by width	3.475m
6	Bin zone width	2m
7	Tree spacing	To achieve sustainable tree planting on streets, adequate rooting and branch space must be allowed. Refer to <i>Cambridgeshire Design Guide</i> . Min. 8m from building edge. Min. 2.25m clear stem height. 1.5m min. from path/ street edges.
8	Parking lay-by width	2.9m min
9	Parking spaces arrangement	3 max in parking zone lay-by
10	Island width (where applicable)	1.5m min
11	Raised crossing / table	Varies
12	Raised table ramp gradient	1:20 slope

Table 3.5 Primary Street Scenario 2 Design Dimensions

occasional hedges running parallel to the street.

Integrated cycle and foot paths will line both sides of the Primary Street forming a strong route through the development. See Pedestrian and Cycling on page 70.

There will also be raised tables and crossings, which will be flushed with the adjacent kerb edge, cycle and foot paths. These will occur at junctions or key connections such as the Ridgeway. See Raised Table on page 71.

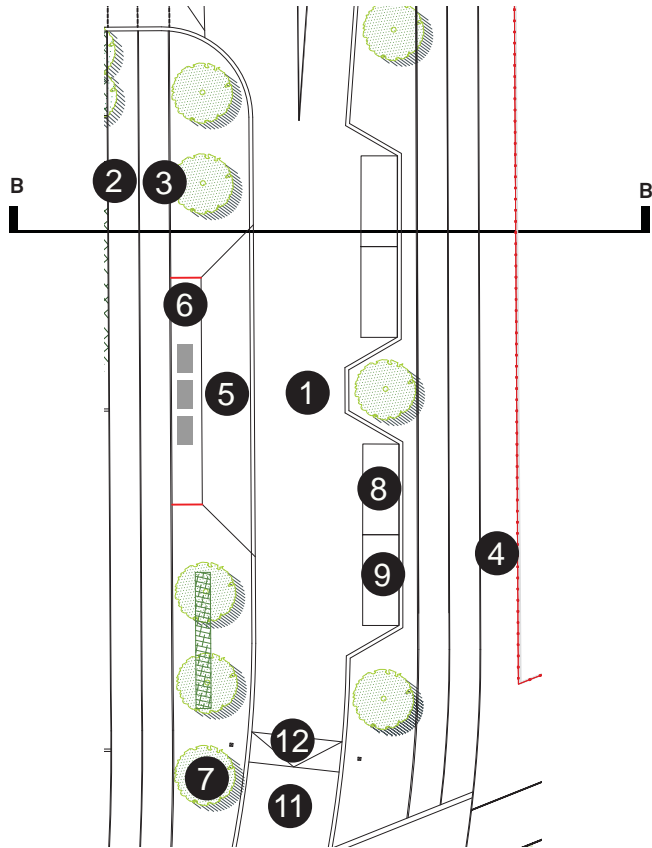


Figure 3.44 Primary Street Scenario 2 Illustrative Plan

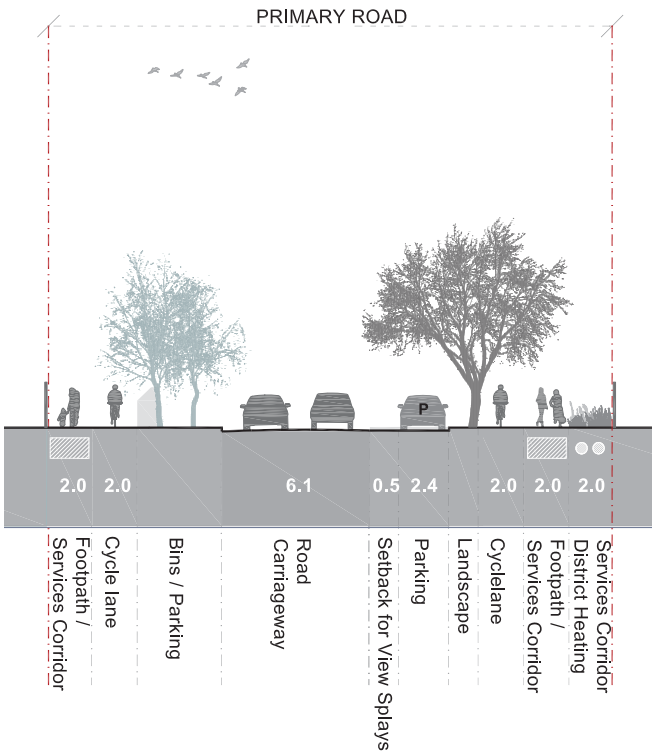


Figure 3.45 Primary Street Scenario 2 Illustrative Section B-B

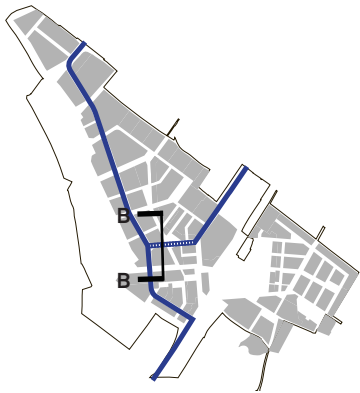


Figure 3.46 Primary Streets Key Plan



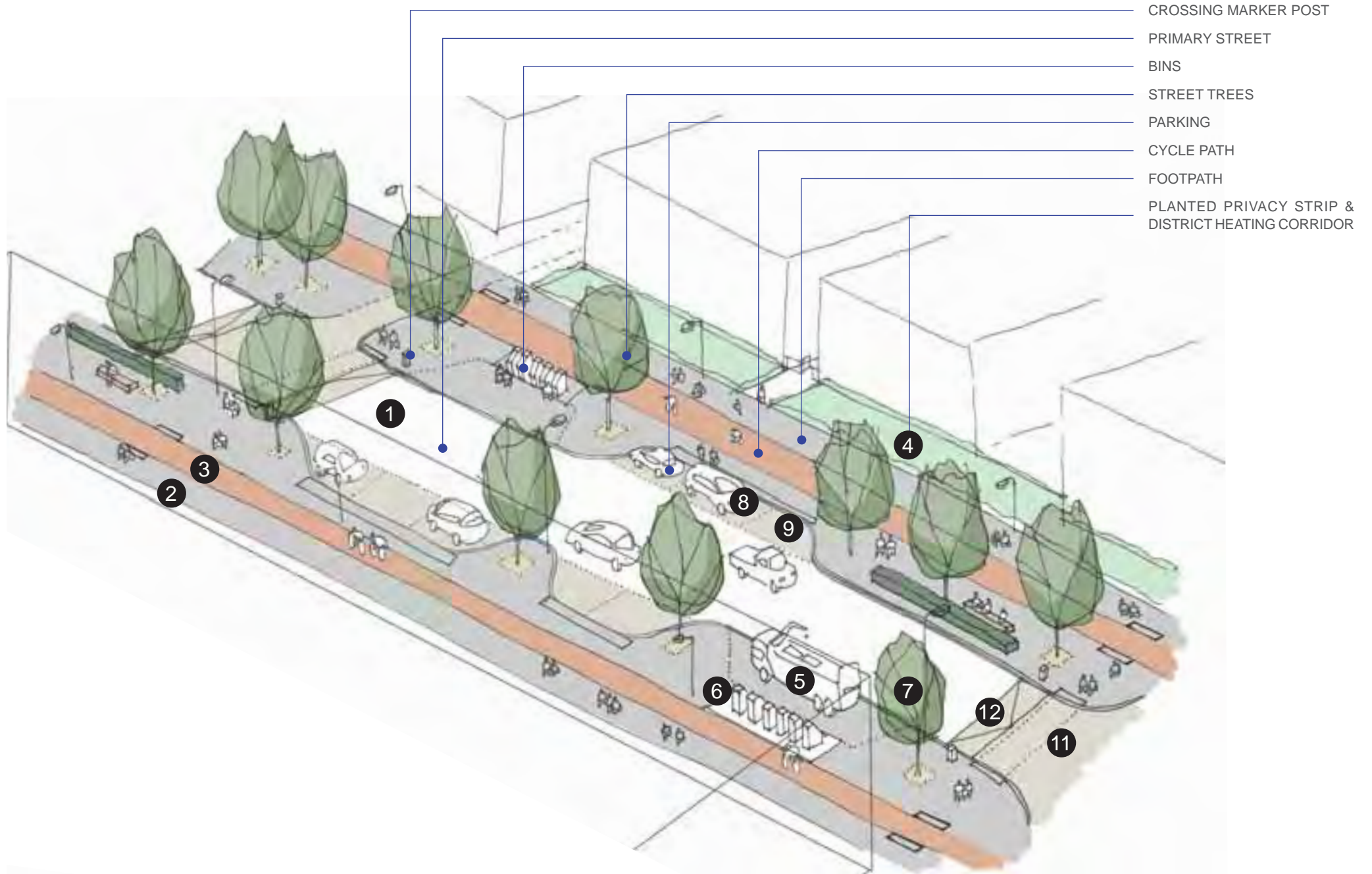


Figure 3.47 Illustrative Sketch of Primary Street Scenario 2

# Secondary Street Scenario 1 With Perpendicular Parking

Secondary Street will be a tree lined avenue with footpaths on both sides of the street and a landscape zone containing the district heating corridor to one side. (See Section 3.5 Infrastructure, District Heating Scheme on page 118.)

In Scenario 1, Parking will be provided on one side of the street separated by tree planting in self binding gravel or equivalent. Vehicles and cyclists will share the street. See Pedestrian and Cycling on page 70.

Street Dimensions		
1	Carriageway width	6.0m ( 6.95m if parking on both sides of street)
2	Footpath width	2m
3	DH Corridor width	2m
4	Service Corridor / Privacy strip width	1.8m min
5	Tree spacing	<p>To achieve sustainable tree planting on streets, adequate rooting and branch space must be allowed. Refer to <i>Cambridgeshire Design Guide</i>.</p> <p>Min. 2.25m clear stem height. 1.5m min. from path/ street edges.</p>
6	Parking lay-by width	5.0m

Table 3.6 Secondary Street Scenario 1 with Perpendicular Parking Design Dimensions

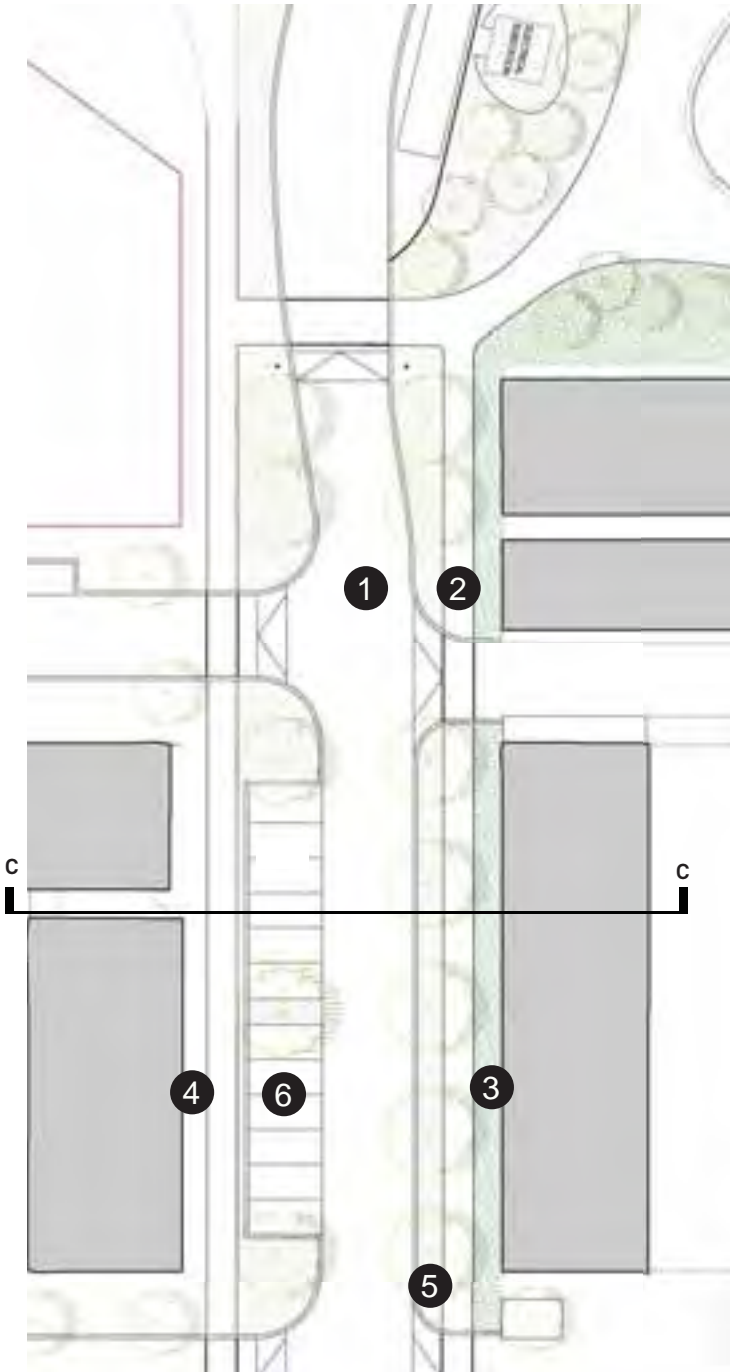


Figure 3.48 Secondary Street Scenario 1 with Perpendicular Parking Illustrative Plan

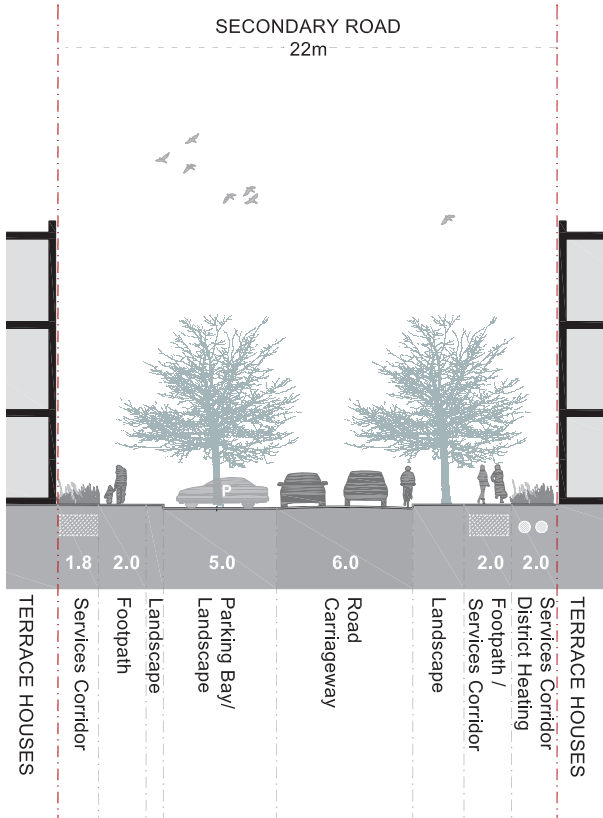


Figure 3.49 Secondary Street Scenario 1 with Perpendicular Parking Illustrative Section C-C

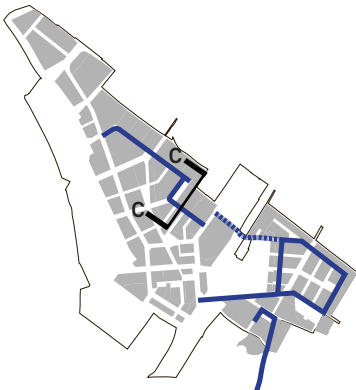


Figure 3.50 Secondary Streets Key Plan

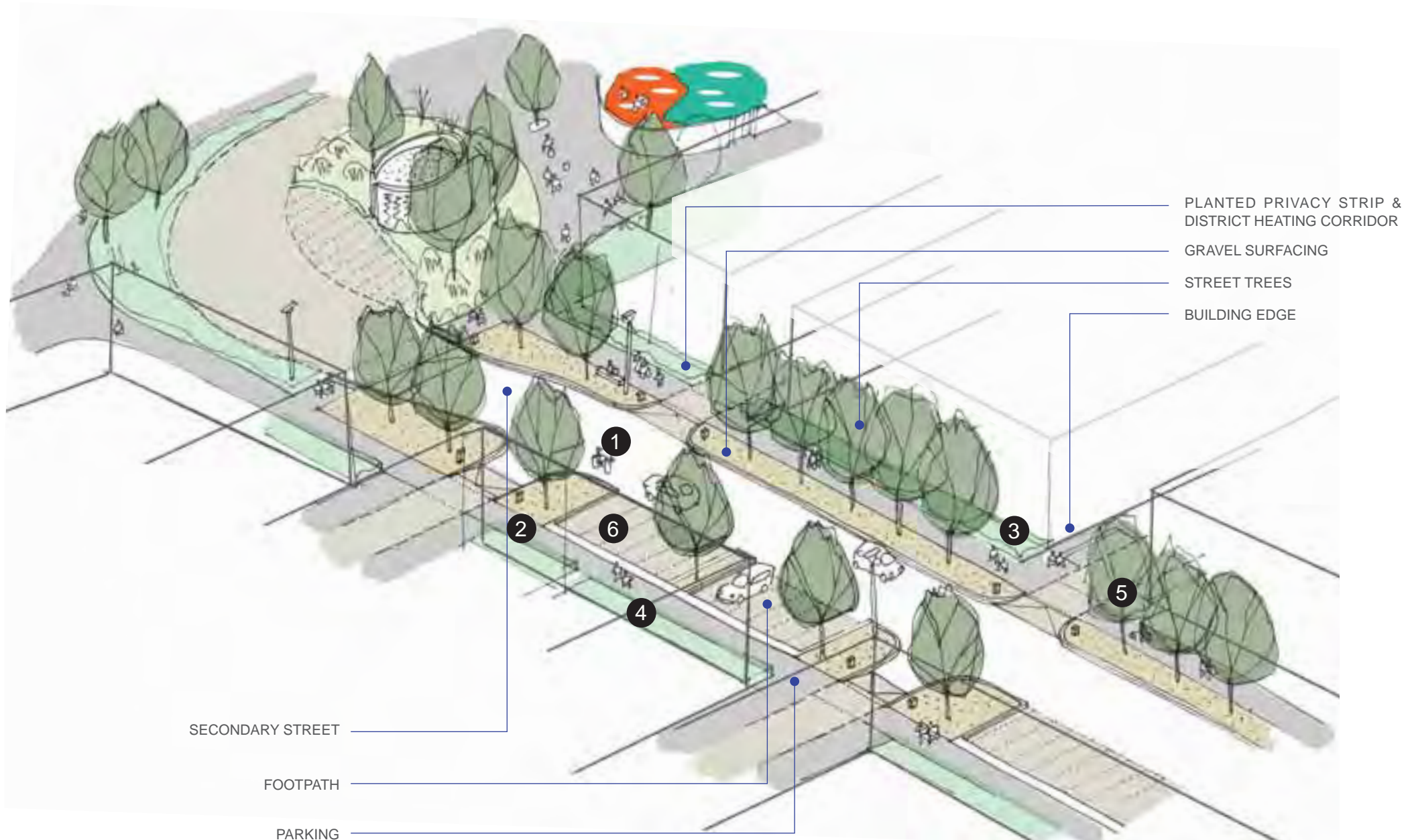


Figure 3.51 Illustrative Sketch of Secondary Street Scenario 1 with Perpendicular Parking



# Secondary Street Scenario 2 With Parallel Parking

Secondary Street will be a tree lined avenue with footpaths on both sides of the street and a landscape zone containing the district heating corridor to one side. (See Section 3.5 Infrastructure, District Heating Scheme on page 118.)

In Scenario 2, Parallel parking is achievable on either sides of the street with bins located adjacent to the street (See Section 3.6 Sustainability, Operational Waste Management on page 136). Vehicles and cyclists will share the street. See Pedestrian and Cycling on page 70.

Street Dimensions		
1	Carriageway width	6.0m
2	Footpath width	2m
3	DH Corridor width	2m
4	Service Corridor / Privacy strip width	1.8m min
5	Tree spacing	To achieve sustainable tree planting on streets, adequate rooting and branch space must be allowed. Refer to Cambridgeshire Design Guide.  Min. 2.25m clear stem height. 1.5m min. from path/ street edges.
6	Parking lay-by width	2.9m min
7	Bin zone width	2m

Table 3.7 Secondary Street Scenario 2 with Parallel Parking Design Dimensions

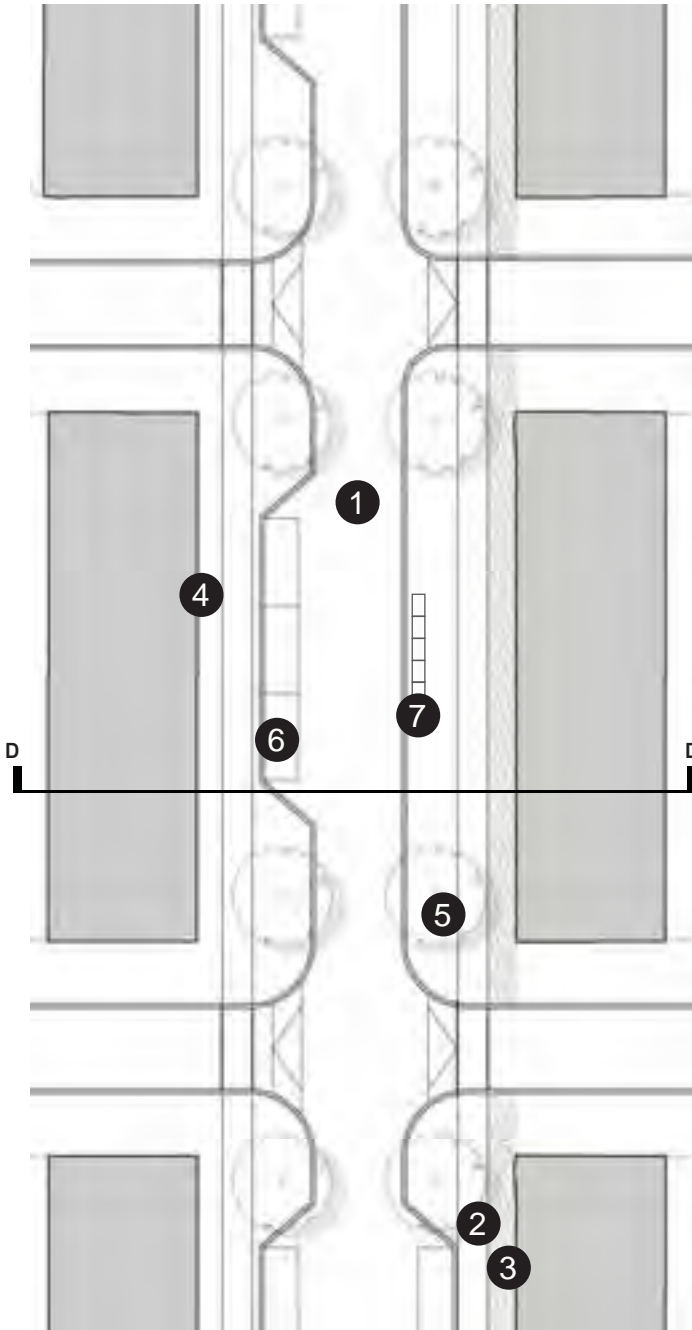


Figure 3.52 Secondary Street Scenario 2 with Parallel Parking Illustrative Plan

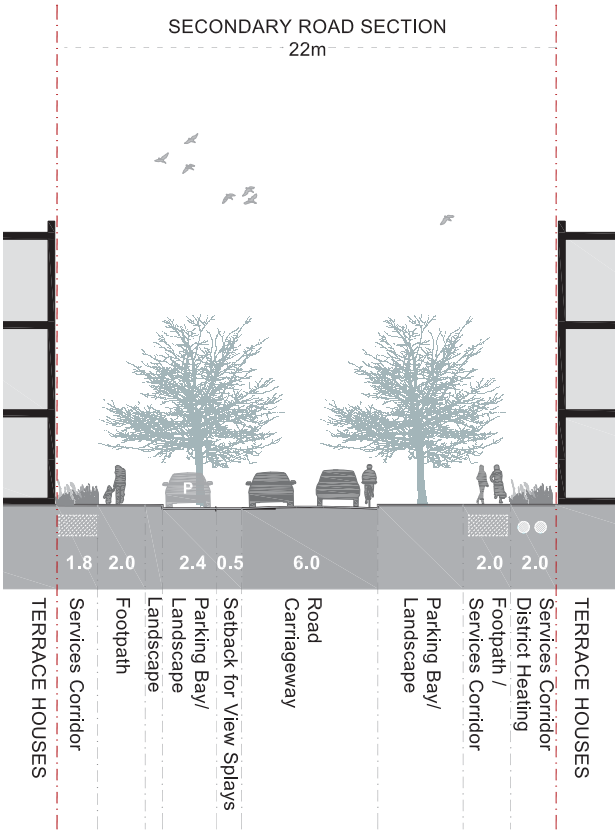


Figure 3.53 Secondary Street Scenario 2 with Parallel Parking Illustrative Section D-D

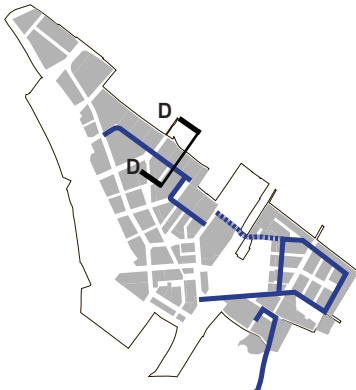


Figure 3.54 Secondary Streets Key Plan

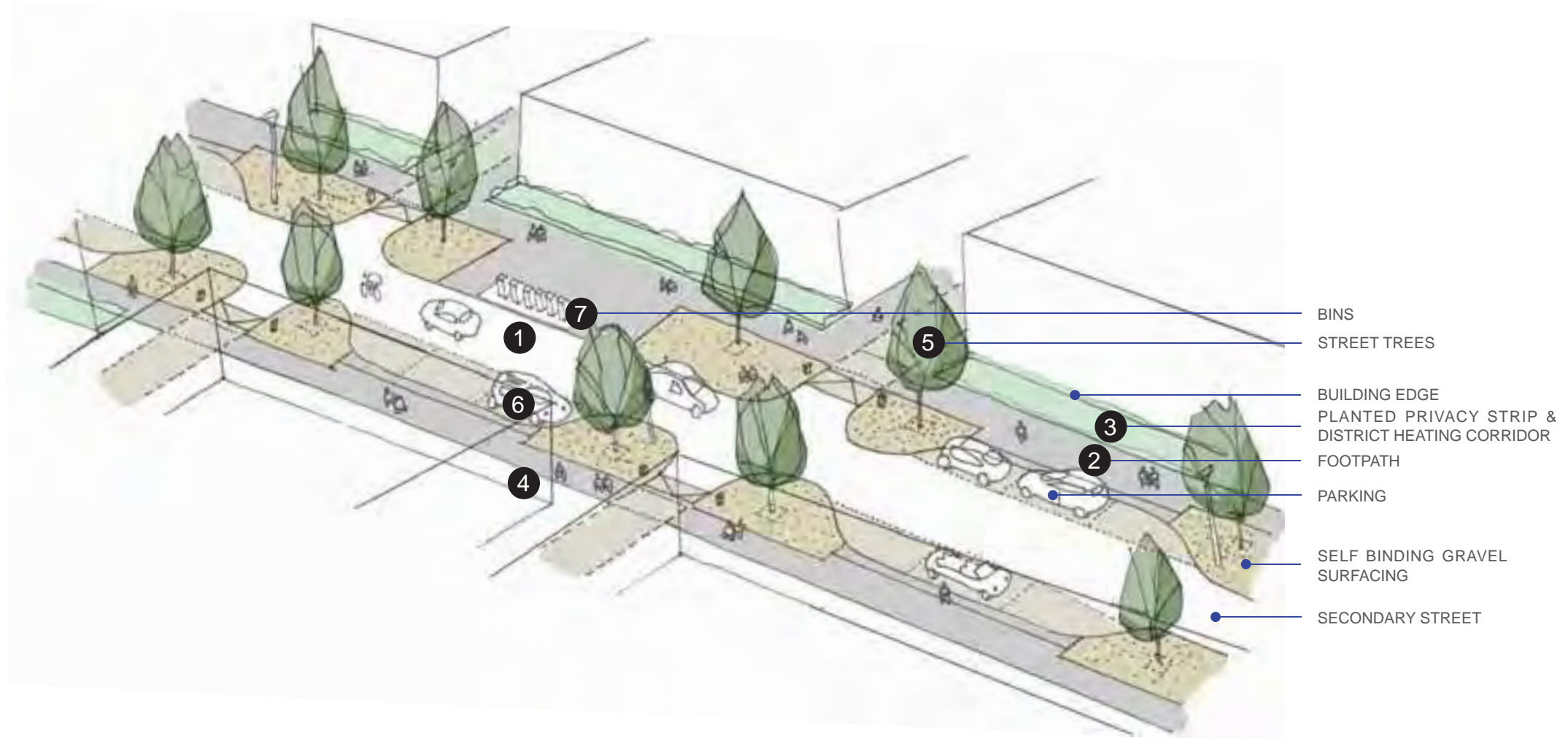


Figure 3.55 Illustrative Sketch of Secondary Street Scenario 2 with Parallel Parking

# Tertiary Street

The Tertiary Street will be a shared surface, tree lined with footpaths on both sides of the street. Parallel parking will also line both sides with bin zones located in between the parking arrangements (See Section 3.6 Sustainability, Operational Waste Management on page 136), where required cyclists will share the street with vehicles. See Pedestrian and Cycling on page 70.

The parking, streets and adjacent paths will all be flushed to create a shared residential street environment.

Street Dimensions		
1	Carriageway width	5.6m
2	Footpath / Service Corridor width	2.0m min
3	Bin zone width	2m min replacing parking in places
4	Tree spacing	To achieve sustainable tree planting on streets, adequate rooting and branch space must be allowed. Refer to Cambridgeshire Design Guide.  Min. 2.25m clear stem height. 1.5m min. from path/ street edges.
5	Parking lay-by width	2.4m min
6	Parking to tree pit edge exclusion zone	Min. 1.0m from tree pit edge

Table 3.8 Tertiary Street Design Dimensions

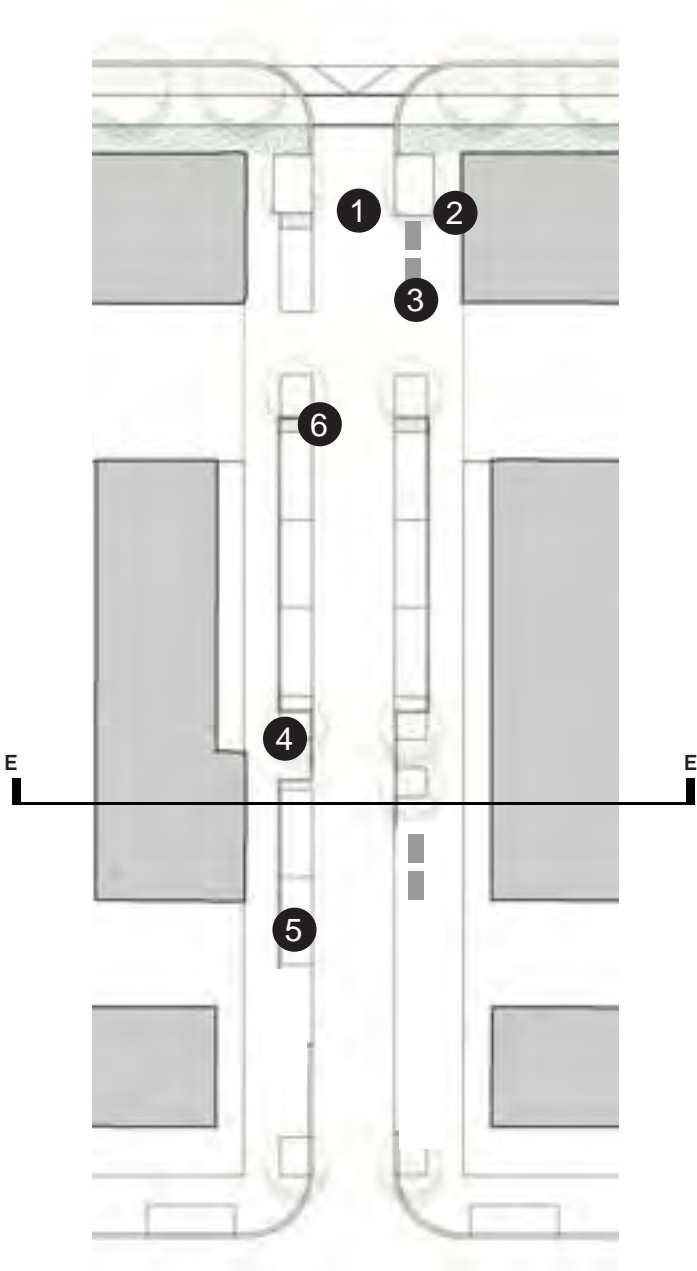


Figure 3.56 Tertiary Street Illustrative Plan

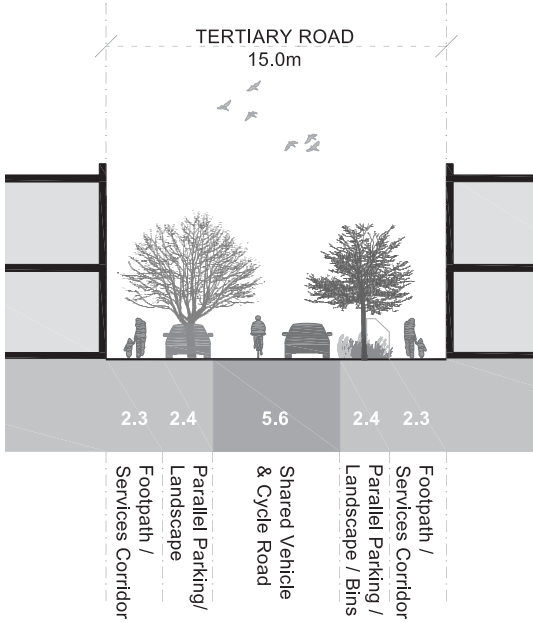


Figure 3.57 Tertiary Street Illustrative Section E-E

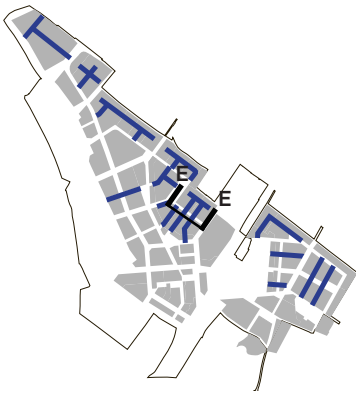


Figure 3.58 Tertiary Streets Key Plan



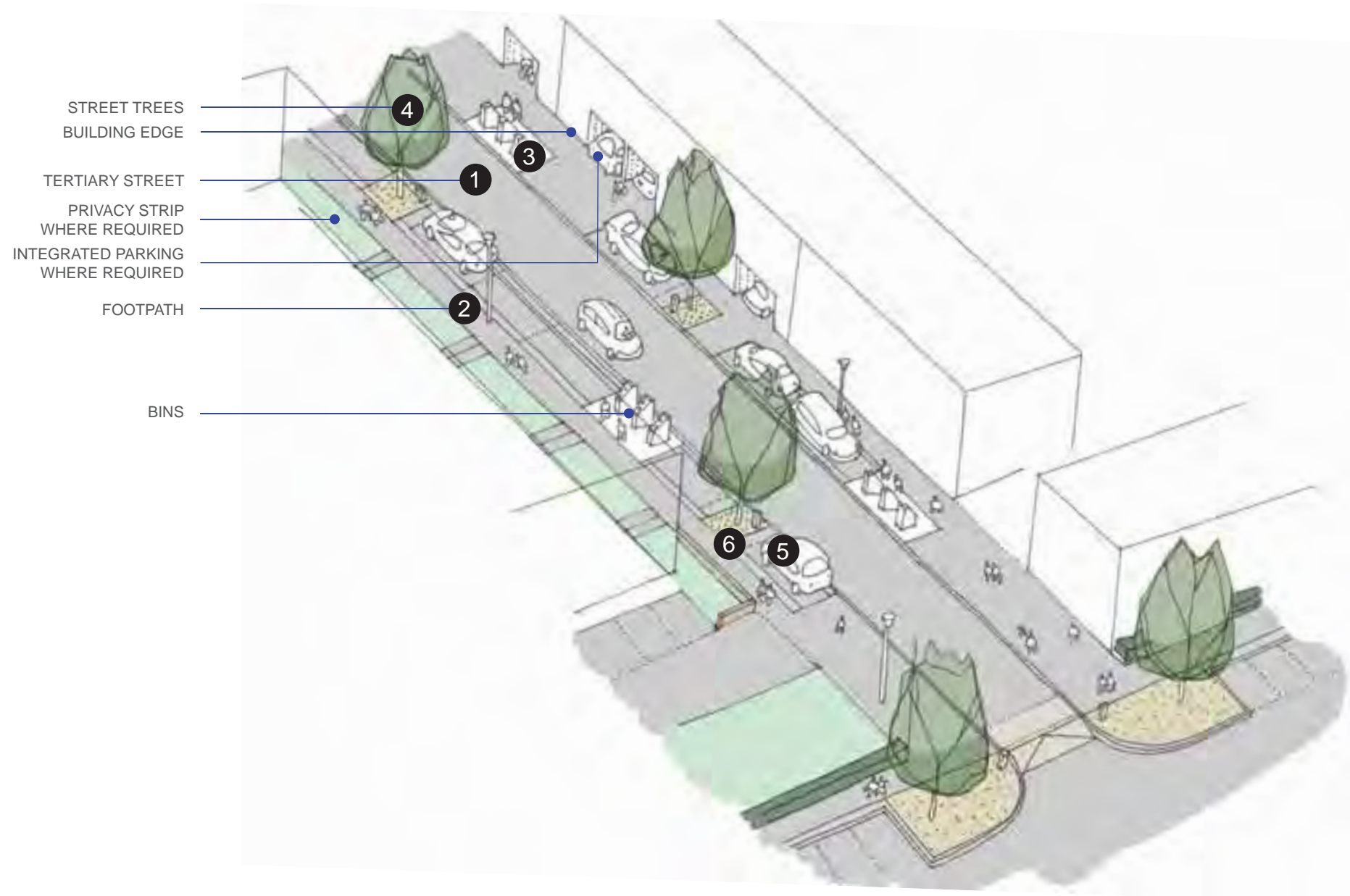


Figure 3.59 Illustrative Sketch of Tertiary Street

## Busgate Street

Bus Gate street is the primary public transport priority route linking Huntingdon Road and Madingley Road through the Local Centre. This route will be retained in the University's ownership and links between this route and the Market Square and Ridgeway should be carefully considered to establish sense of place as well as enable safe permeability for pedestrians, cyclists and buses. See Section 3.7 Accessibility, Public Transport on page 145, also see Chapter 4 Character Area 3: Local Centre, Key Spaces - Market Square on page 182.

Vehicle access will be restricted through the Local Centre during peak hours, and in those times only buses, taxis and service vehicles will be able to access through use of a vehicle transponder.

### Key Principles include:

- 1 Parallel parking or angled echelon parking to accommodate sufficient parking spaces in accordance with planning and building requirements.
- 2 Swale / rain gardens as SuDS feature on one side of the street. See Section 3.5 Infrastructure, SuDS and Surface Water Drainage on page 126.
- 3 An avenue of street trees running on both sides of the street. The positioning of these should consider building frontages, and street junctions to ensure legibility. These will be large mature trees. Minimum 8.0m

from edge of buildings. Minimum 2.25m clear stem height.

- 4 Raised tables / crossings at key junctions, and connections to give priority for pedestrians. See Pedestrian and Cycling on page 70.
- 5 Bollards to restrict access into the Market Square area. These should be sympathetic to the character of the development and the square and be minimised where possible to create a clutter free environment.
- 6 Transponder (automated bollards), to control access through the Market Square area. These should respond to the character of the development and the square, and be minimised where possible to create a clutter free environment.
- 7 Raised table at Market Square. The surfacing should relate to the character of the square, whilst being suitable for vehicles. This will also be a turnaround area for vehicles. See Section 3.4 Landscape, Hard Material on page 106 and Chapter 4 Character Area 3: Local Centre, Key Spaces - Market Square on page 182.
- 8 Provide sufficient cycle parking in accordance with planning, building requirements, and to the 'Cycle Parking Guide-For New Residential Developments' by Cambridge City Council. Paying attention to dimensions, siting and location.
- 9 Provide street furniture in the form of seating, litter bins etc. The design, siting,

and materials for the street furniture should compliment the built form and the streetscape environment. All street furniture should consist of high quality materials, and meets BREAAAM standards where possible.

Ensure high quality materials are used, which compliments the buildings and streetscape, and meets BREAAAM standards where possible. Also see Hard Material on page 106.

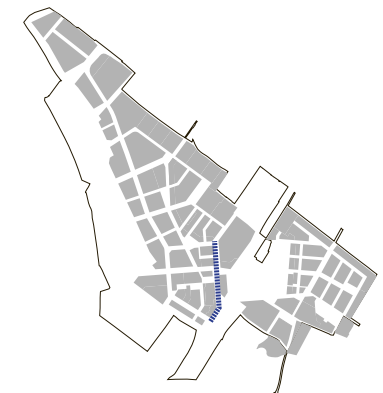
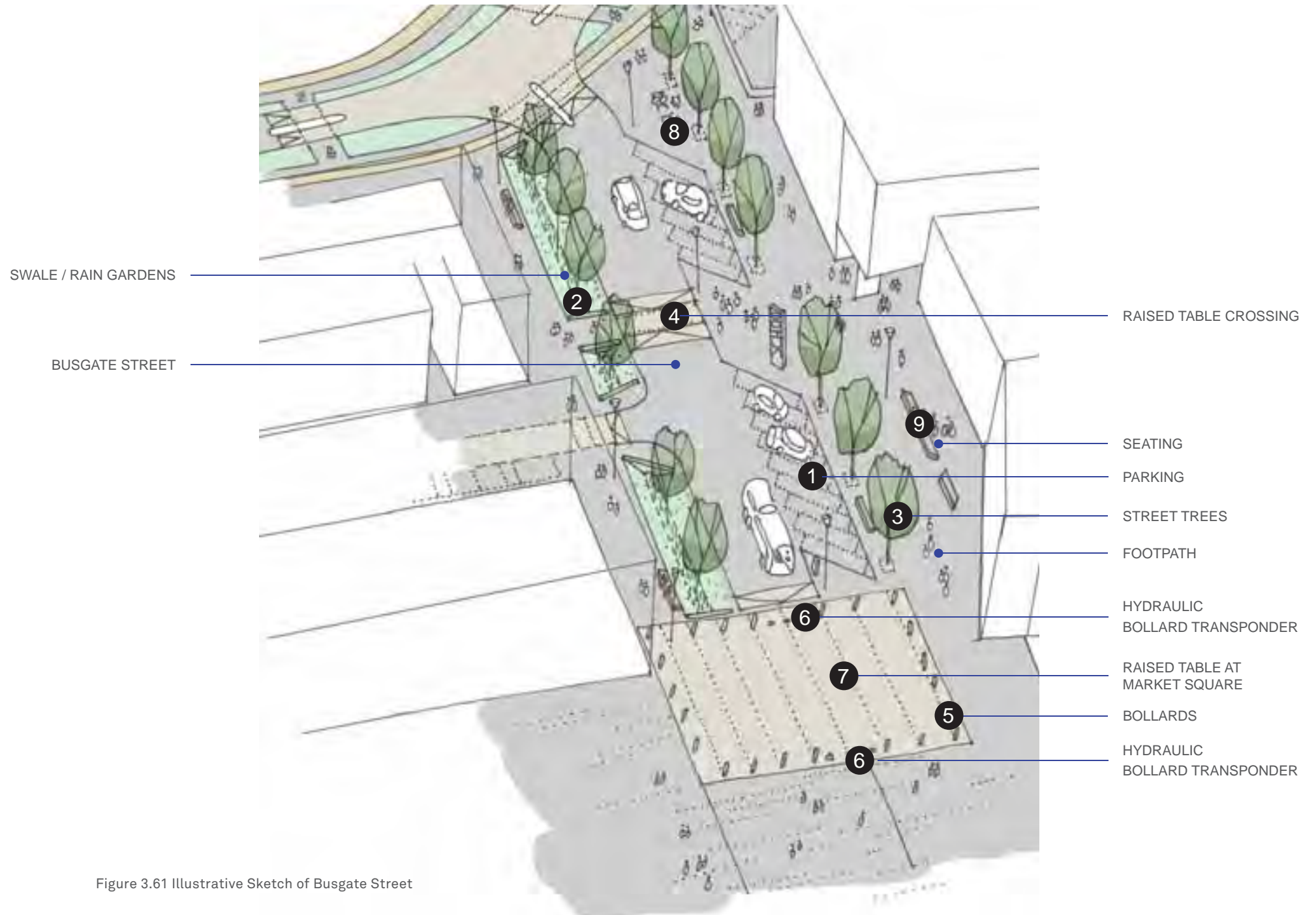


Figure 3.60 Busgate Street Key Plan





# The Ridgeway

The Ridgeway will be the principal cycle way through the development, and will be lined with trees, with a mix of ornamental and native species. There will be a raised planter / seating area running parallel to the cycle way with native planting. See Section 3.4 Landscape, The Ridgeway Landscape on page 102.

Key Principles include:

- **Shared Foot Path, Cycle Lane:** Forming the primary connection between Girton, North West Cambridge Development and beyond to Cambridge City Centre. The path will also allow for fire access and refuse vehicles. See Pedestrian and Cycling on page 70.
- **Raised Planter / Seating Areas:** parallel to the cycle lane with native planting and seat edges.
- **Existing Trees:** The Ridgeway is aligned to an existing field boundary, some existing trees that form part of that boundary will be retained in accordance with BS 5837 ‘Trees in Relation to Construction’.
- **Specimen Trees:** High quality specimen trees at key points throughout the site to link destinations and create visual interest throughout the year.
- **Raised Table / Signalised Junction:** A signalised crossing is required where the Ridgeway meets primary and secondary streets to enable safe crossing for cyclists and pedestrians. See Raised Table on page 71.
- **Footpath:** There is a 2m wide footpath on both sides, providing access to the building entrances and keeping cyclists and pedestrians separate.

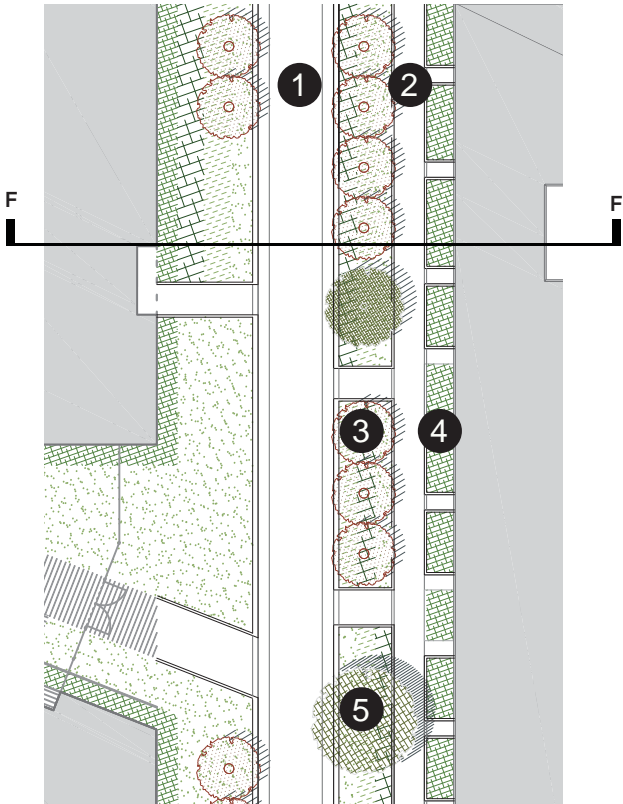


Figure 3.62 The Ridgeway Illustrative Plan

Street Dimensions		
1	Shared Footpath and Cycle Path width ( includes fire and refuse vehicle access)	5.0m
2	Footpath width	2.0m
3	Raised Planter/ Seating Areas width	4.0m
4	Privacy strip width	2.0m
5	Tree spacing	To achieve sustainable tree planting on streets, adequate rooting and branch space must be allowed. Refer to Cambridgeshire Design Guide.  Min. 2.25m clear stem height. 1.5m min. from path/ street edges.

Table 3.9 The Ridgeway Design Dimensions

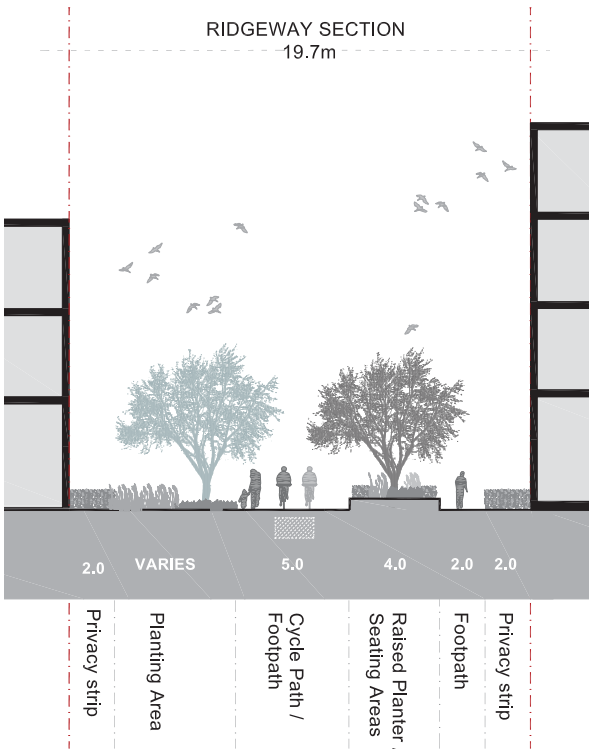


Figure 3.63 The Ridgeway Illustrative Section F-F

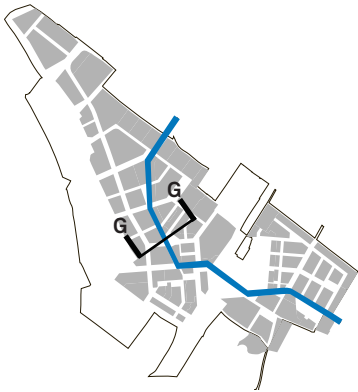


Figure 3.64 The Ridgeway Key Plan

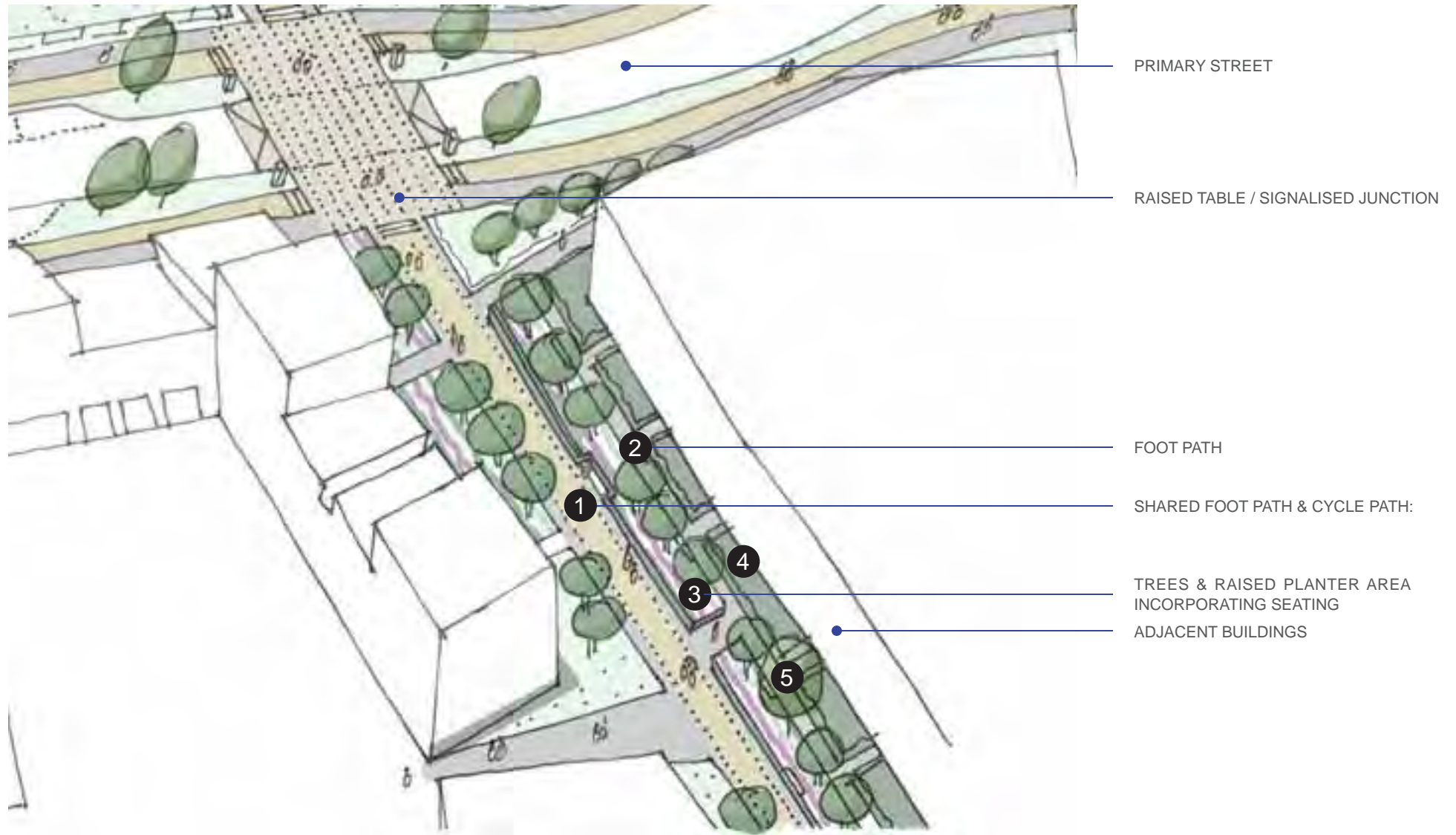


Figure 3.65 Illustrative Sketch of The Ridgeway

## Pedestrian and Cycling

A comprehensive cycle and pedestrian network is created to maximise the permeability of North West Cambridge, establish legible environment and improve connectivity between the site and surrounding areas / city centre. A core concept within North West Cambridge is the Ridgeway - a high quality pedestrian and cycle link that will connect Storey's Way directly through the Application Site to Girton, along the ridgeline. The Ridgeway will also facilitate access to the other main cycle access points to the south and east: at the Madingley Road West Junction (which will facilitate footpath access from the site to the adjacent Park & Ride), and to Madingley Rise. See The Ridgeway on page 68 and also Section 3.4 Landscape, The Ridgeway Landscape on page 102.

To ensure safer routes for pedestrians and cyclists through the site, all streets will have a maximum speed of 20 miles per hour. Pedestrian/cycle crossings will be integrated into the raised tables at key intersections and clearly defined with markers. The raised tables will also act as a traffic calming measure to reduce the road traffic speed. See Achieving a Low Speed Environment on page 54. Secure, well-located cycle parking will be conveniently located with a provision in line with the cycle parking standards outlined in the Area Action Plan.



Figure 3.66 Pedestrian and Cycle Routes



## Raised Table

The raised tables at the Primary or Secondary Street interface with the Green Corridor will be flushed with the adjacent kerb, pedestrian and cycle paths. The purpose of the table is to slow vehicles, whilst providing an uninterrupted pedestrian / cycle connection within the specific Green Corridor, which will take precedence over vehicles. See Figure 3.67. The raised tables at the Primary or Secondary Street junctions will be flushed with the adjacent kerb, pedestrian and cycle paths. The purpose of the table is to slow vehicles, whilst giving priority to pedestrians / cyclists to cross the street which will take precedence over vehicles. See Figure 3.68.

On the Primary Streets there will be additional crossings / raised tables / events for cyclists. These will be at a maximum of 40m intervals taking into account of raised tables at Green Corridors and junctions. See Figure 3.69.

See 3.4 Landscape on page 78, Green Corridor Junctions and Interfaces on page 100 and Hard Material on page 106.

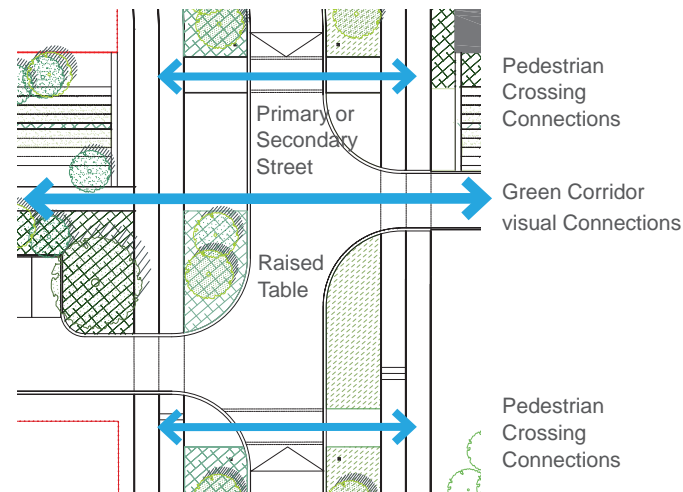


Figure 3.67 Raised Tables at Primary & Secondary Streets interfaces with Green Corridors

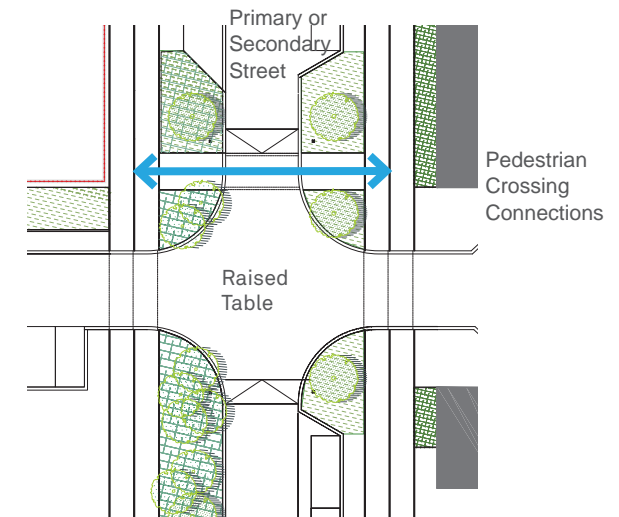


Figure 3.68 Raised Tables at Primary & Secondary Streets Junctions / Crossings

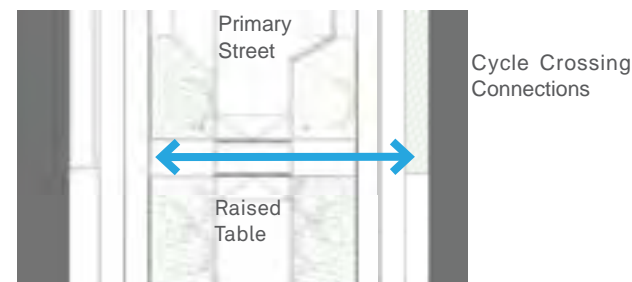


Figure 3.69 Additional crossings / raised tables / events for cyclists at Primary Street

## Cycle Parking

Cambridge is often recognised as a 'cycling city' and with the city's vision to become 'a world-class cycling city' focus will be given to incorporate measures to encourage cycling at the North West Cambridge site. Of central importance is the design of suitable cycle parking infrastructure to allow users of the site to own and flexibly use cycles for everyday transportation. To achieve this we must provide convenient and secure cycle parking. Cycle storage must be designed as an essential component of the development and located in both key public spaces and within private residences with separate spaces for residents and visitors..

Cycle parking in all areas will consider the character and setting in relation to buildings, open space, and courtyards. They should be located so that they compliment these spaces, and not obstruct key views or aesthetic features such as landscape. The use of planting and trees alongside cycle parking can be used to mitigate any impact on adjacent spaces or significant features.

## Cycle Parking for Residential Buildings

Cycle parking for all homes and student accommodation will be to *Code for Sustainable Homes* and *AAP* standards. All residents cycle parking will be protected from the weather, be suitably lit, and secure with access for residents only. The design will also consider the need for 'alternative' cycles including trailers and tricycles. All cycle storage will be designed to be easily accessible and convenient. It will not require cycles to enter dwellings.

### Houses with garages

Where possible cycle parking should be accessed from the front of the building either in a specially constructed enclosure or easily accessible garage. The design of any enclosure should integrate well with the surroundings. The cycle must be removed easily without having to move the vehicle. (See Figure 3.70 for recommended cycle storage in a garage). Visitor parking should be as close as possible to the dwellings.

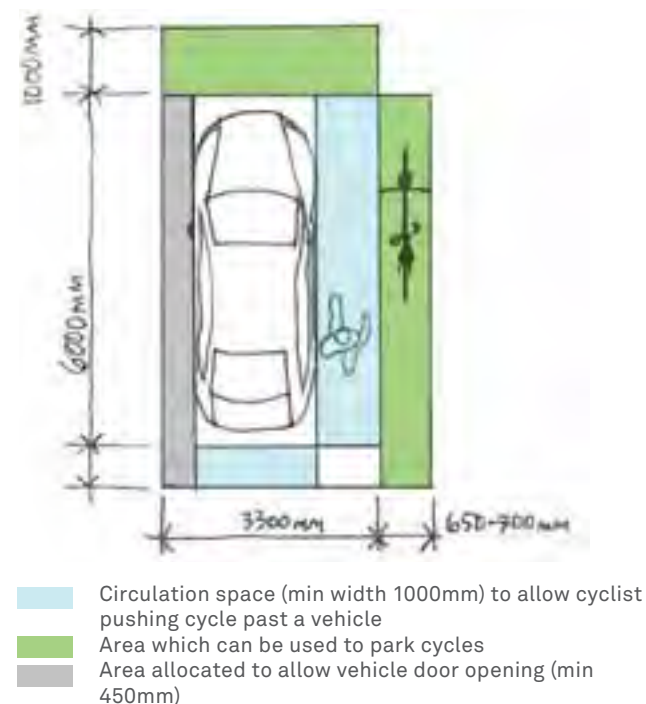


Figure 3.70 Cycle storage layout within a garage

## Houses without garages

When provided within the footprint of the dwelling or as free standing shed, cycle parking should be accessed by means of a door at least 900mm and the structure should be at least 2m deep. Parking should be secure, covered and made of the same materials as the main structure. See Figure 3.71.

## Apartments

Cycle parking should preferably be located on the ground floor level inside the building. The space should be well maintained and lit clearly to provide a safe environment. Visitor parking should be covered and located near the main entrance.

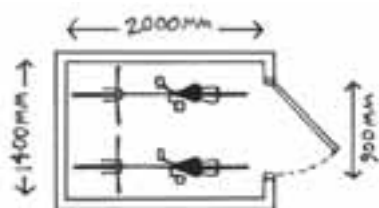


Figure 3.71 Enclosed Storage for 2 cycles

## Cycle Parking for Non-Residential Buildings

Cycle parking for non-domestic buildings will meet *BREEAM* and *AAP* requirements in terms of number of spaces, see Table 3.10. All of the spaces required to *BREEAM Tra 3 (Cyclist facilities)* will be designed in accordance with *BREEAM* standards including lighting, coverage, and security. Additional spaces required to meet *AAP* standards which may not be related to a particular building used will be located in both open and covered areas around Phase 1. All cycle spaces for non domestic buildings will be located in visible areas with natural or CCTV surveillance.

## Public realm

Located in key public areas, cycle parking should be conveniently located at points of entry, be secure and easily accessible without blocking circulation routes. The chosen materials must be appropriate to its surroundings and follow the following setting out dimensions shown in Figure 3.72.

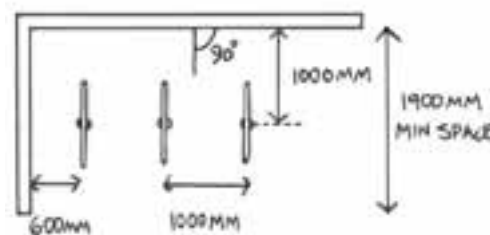


Figure 3.72 Public realm cycle parking arrangement

Mixed Use Brief	Use Class	Description	Cycle Parking Minimum
<b>Commercial Uses</b>			
Foodstore	A1		1 space/25 sqm up to 1,500 sqm, then 1 space per 75 sqm
Other retail (Local Centre)	A1-A5	Up to 8 units	1 space/25 sqm up to 1,500 sqm, then 1 space per 75 sqm
Hotel	C1	130 - 150 bed hotel	2 spaces per 10 rooms, 1 space every 2 members of staff (assumed 43 spaces)
Senior Living	C2	75 units	1 space per 6 residents, 1 space per 2 members of staff (assumed 17 spaces)
<b>University Associated Uses</b>			
University-run Cafe	A3	Public cafe/ eatery	1 space/10 sqm
University Accommodation Office	D1		15 spaces
Project Office/ exhibition/ Sustainability Education Centre	D1	To include education centre/ exhibition area for development and construction office	16 spaces
University Nursery	D1	For 100 children from 0 - 4 years old. Assuming 30 staff.	1 space per 2 members of staff, 1 visitor place per 5 children (assumed 35 spaces)
<b>Community Uses</b>			
Community Centre	D1/D2	Multi-purpose Hall	1 space/15 sqm of public space
Primary Health Care Centre	D1		2 spaces per consulting room, 1 space for every 3 professional staff (assumed 19 spaces)
Police Office	B1	Local police office	7 spaces
School	D1	2.5 form entry primary school (with early years provision)	250 spaces
<b>Sustainability Uses</b>			
Energy Centre and Bring site	Sui generis		

Table 3.10 Parking Requirement Table



## Cycle Parking Racks

All cycle parking racks will be designed to meet *BREEAM* or *Code* (where applicable) and *AAP* standards:

- Racks to be of Sheffield, or preferably A-frame design. The selection of racks will consider smaller as well as unusual cycle forms including tricycles and trailers.
- A minimum spacing of 2m between rows of stands, and 3m between double rows of stands to allow access.
- A minimum space of 0.9m between adjacent racks. Increased distances for racks which are not perpendicular to rows will be provided in line with *AAP* standards.
- Cycle parking locations will consider the wider transport networks on the site, and consideration will be given to co-location with other specific uses, such as at the major public transport stops within the development to assist in the adoption of a combination of non-car modes to deliver movement. See 3.7 Accessibility on page 144, Public Transport on page 145.

### Bad practice:



Lack of bike stability



Simple Cycle Parking



Incorrectly installed cycle rack



Incorrect spacing

### Good practice:



Clearly defined parking area



Recommended 'Sheffield' Cycle stand



Cycle parking with cycle route map



Covered cycle parking



Cycle locker

Figure 3.73 Good and Bad Practice for Cycle Storage

## Parking

Parking within North West Cambridge comprises private dedicated parking and public parking. There are no dedicated parking on the adoptable Primary Streets. For secondary and tertiary streets, only public and visitor non-dedicated parking are permitted.

The diagram on this page is for illustrative purpose only. It indicates the broad approach for on-plot parking based on the *OPA illustrative scheme*.

For dedicated on-plot parking, the following codes are to be followed:

- entrance to semi-basement parking must be concealed to minimise impact on public realm;
- where possible, these entrances should be located away from key pedestrian/cycle routes;
- a maximum of 20 cars can be accommodated in each surface car park on plot (if applicable) to provide a good-scale pedestrian environment and avoid 'sea of cars' effect.

Detailed coding for on-plot parking typologies are summarised in Table 3.11 overleaf.

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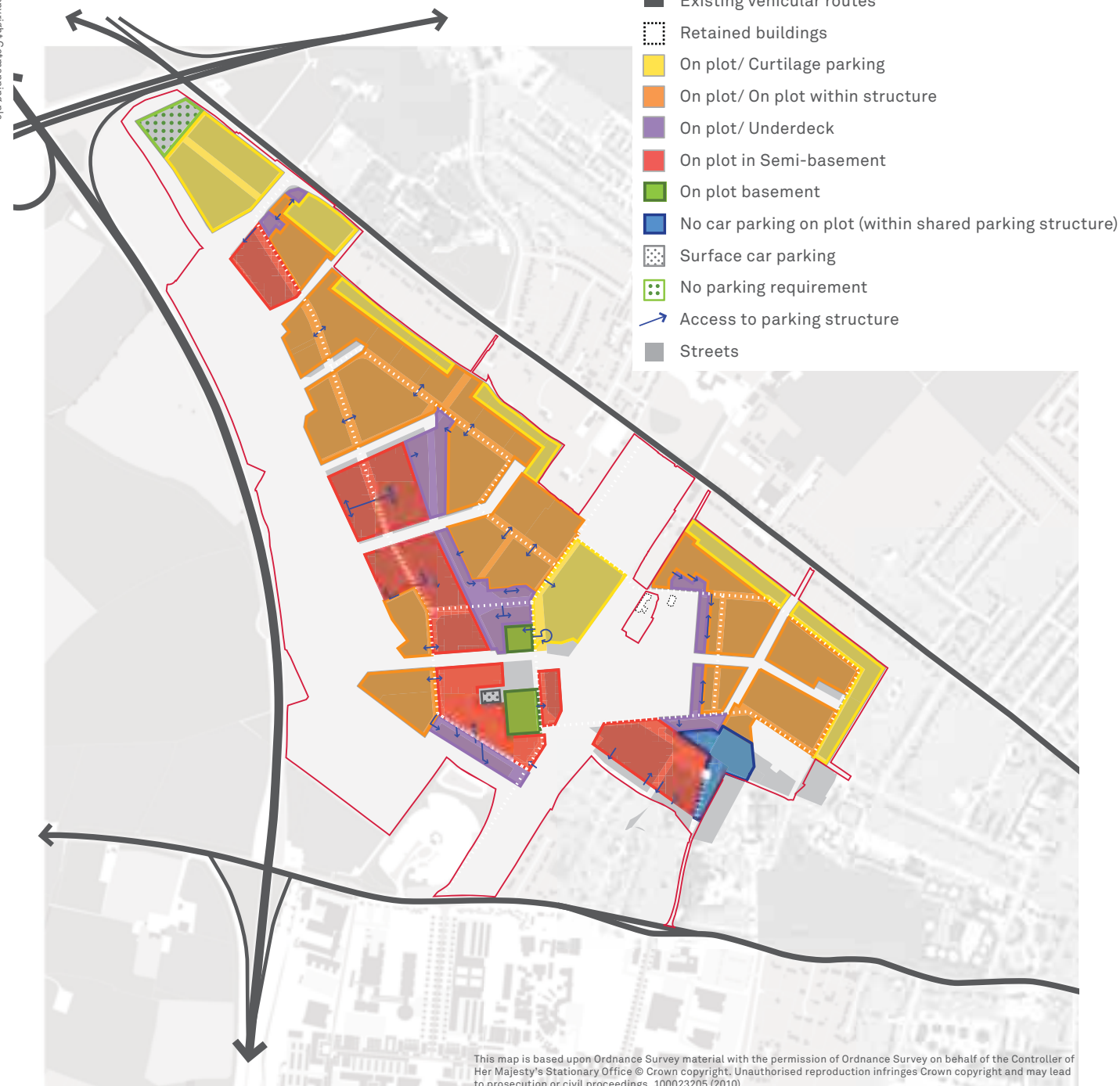


Figure 3.74 Indicative Parking Strategy (Illustrative only)

## On-Street Parking Design Principles

### Primary and Secondary Streets Parallel Parking

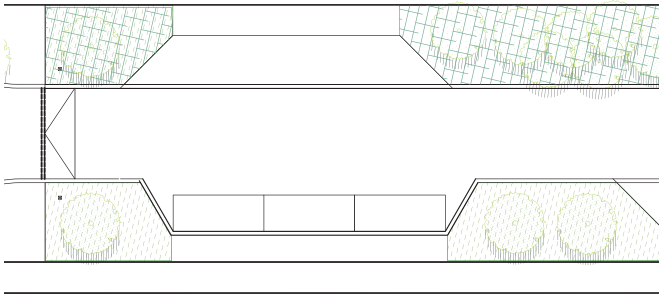


Figure 3.75 Typical Plan of Parallel Parking on Primary and Secondary Streets

- Maximum 3 parking spaces per parking bay
- Chamfer required for parking bay;
- Parking spaces recess from carriageway for visibility splay set-back

### Secondary Street Perpendicular Parking



Figure 3.76 Typical Plan of Perpendicular Parking on Secondary Street

- Maximum 6 parking spaces per parking bay;
- No chamfers for parking bay;

### Tertiary Street Parallel Parking

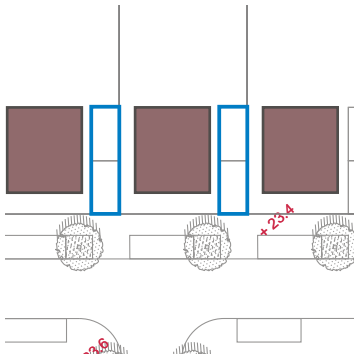
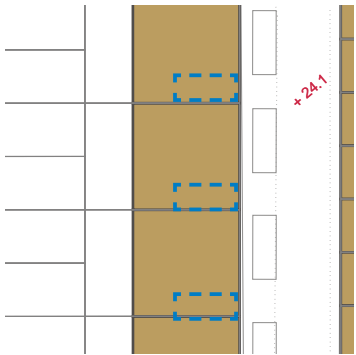

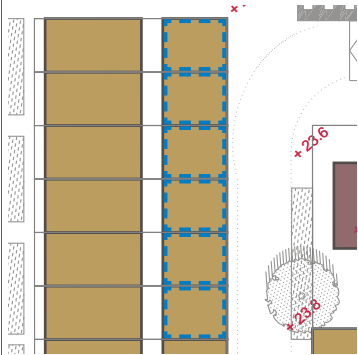
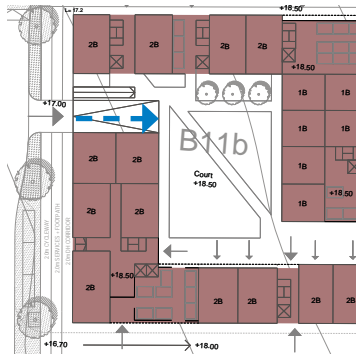


Figure 3.77 Typical Plan of Parallel Parking on Tertiary Street

- Maximum 3 parking spaces per parking bay;
- No chamfers for parking bay;
- No set-back for visibility splay





Parking Typology	Driveway	In Structure			
		Integral	Undercroft	Garage	Basement / Semi-Basement
Plan					
Design Details					
Type	At grade	At grade	At grade	At grade	Basement
Parking Access	Dedicated driveway for each house	Individual integral garage access for each house	Common access to undercroft parking area	Individual rear accessed garage for each house	Common access to basement / semi-basement parking area
Allowed access from street	From Secondary Streets, Tertiary Streets, Mews	From Secondary Streets, Tertiary Streets, Mews	From all street types (apart from Mews)	From Mews only	From Primary Streets, Secondary Streets, Tertiary Streets
Applicable Street Type	Secondary Streets, Tertiary Streets	Secondary Streets, Tertiary Streets, Mews	n/a	n/a	n/a
Parking Dimensions	MIN 3.5 x 10.5	MIN 3.3 X 6.0	MIN 2.4 x 4.8	MIN 3.3 X 6.0	MIN 2.4 x 4.8
Design intent			Aisle width - 6.0m one way, 6.95m two way	Aisle width - 6.0m one way, 6.95m two way	Aisle width - 6.0m one way, 6.95m two way
Applicable Land Use	Residential - Detached houses	Residential - Semi-detached Houses	Residential - Terrace houses, flats	Residential - Terrace houses	Local Centre, Flats
Dedicated Parking	Private	Private	Private, Visitor	Private	Private, Visitor
Access Point Screening Treatment	External driveway		Access point to be screened		
Integrated Uses above Parking	n/a	residential and/or terrace	Raised Courtyards and Gardens		Raised Courtyards

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## 3.4 LANDSCAPE

### Landscape Structure

The landscape structure of North West Cambridge is a multi-layered and multi-functional open space network comprised of formal and informal public green spaces, ecological environments, recreational and play spaces, connectivity links, sports pitches, allotments and water corridors.

At the Macro-level the network contains two main categories of landscape, which are further defined by four distinct landscape components (the Mid-level).

#### Site Wide Landscape Categories (Macro-level):

- Primary Open Land
- Secondary Open Land

(Refer to 'Description of Development' / Chapter 7 Appendices, Appendix B, Figure 7.31 Open Land and Landscape Areas, Parameter Plan: Zone B on page 281.)

#### Site Wide Landscape Components (Mid-level):

- The Western Edge (Primary Open Land)
- Girton Gap, Storey's Field & Ridge & Furrow (Primary Open Land)
- The Green Corridors (Secondary Open Land)
- Key Spaces (Including The Ridgeway)
- micro level On Plot Landscape- Private, semi private and communal courtyards.

Each of these components is discussed further in this section.

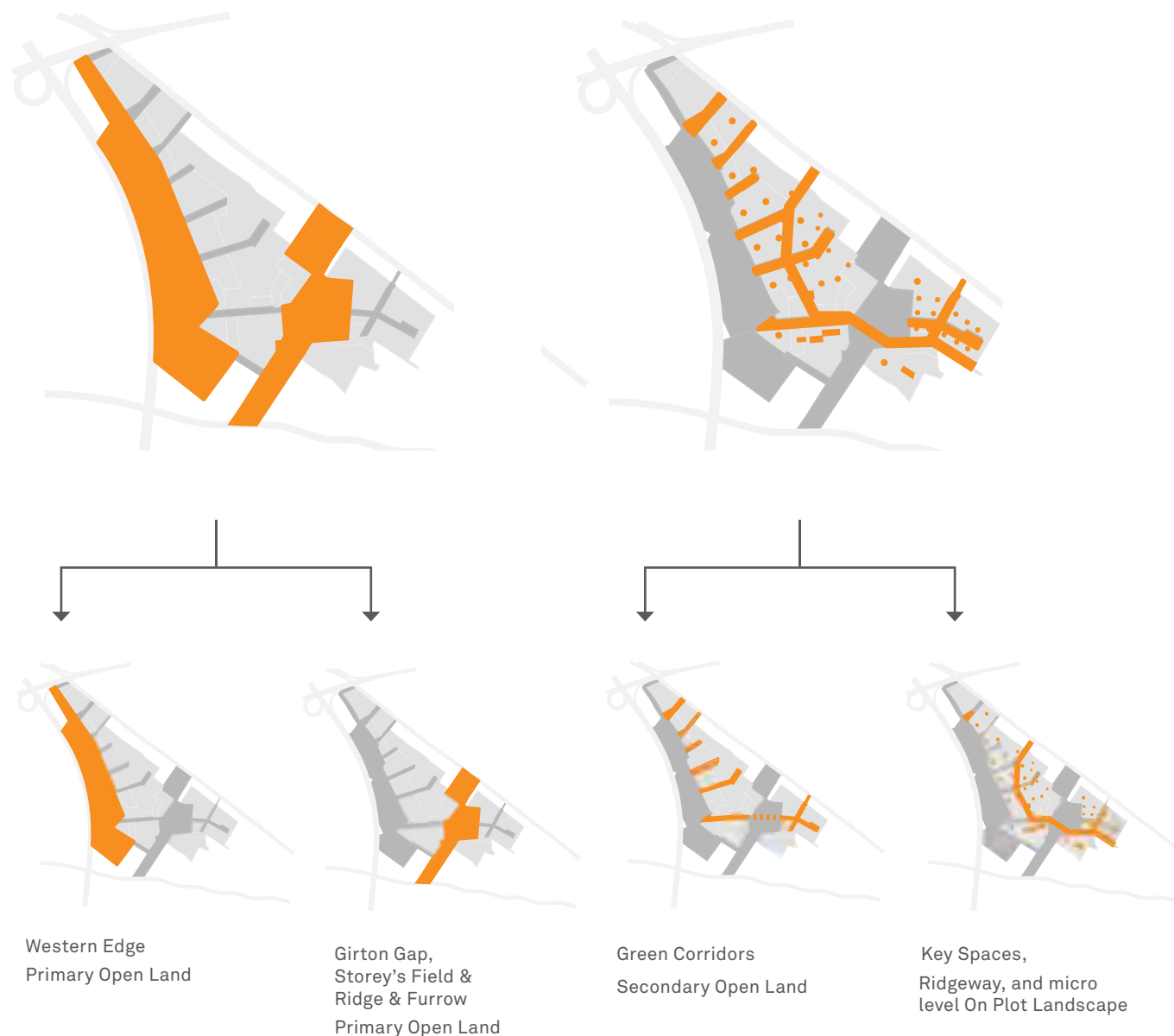


Figure 3.78 Landscape Structure Key Plan

## Landscape Principles

The landscape structure will establish and achieve the following key principles throughout its establishment and periodic development:

- A multi-functional, layered landscape that is fully and seamlessly integrated with the infrastructural requirements of the development.
- A landscape framework which reflects the local landscape of Cambridge.
- An environment which enhances existing, and creates new, ecological habitats, whilst improving local biodiversity. Incorporation of the requirements of the biodiversity strategy.
- An open spaces network that is legible and accessible for all users, with clearly defined hierarchies of open space and use.
- The provision of play spaces within the layered landscape, incorporating the youth and play strategy.
- A landscape which prioritizes new cycle and pedestrian links, whilst promoting connectivity to existing networks across wider Cambridge and Girton. See 3.3 Access and Movement on page 50, Pedestrian and Cycling on page 70.
- Retention and protection of existing trees, hedgerows and watercourses wherever possible, and ecological improvements to existing hedgerows of poor quality.
- Incorporation of the requirements of the sustainable urban drainage system (SuDS) in line with the *Surface Water Strategy: Condition 26*. See Section 3.5 Infrastructure, SuDS and Surface Water Drainage on page 126.
- Integration of the public art strategy within the design of the landscape.
- A fully accessible public realm.
- An enduring, easily-maintained, and high quality public realm.

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Figure 3.79 Landscape Typology

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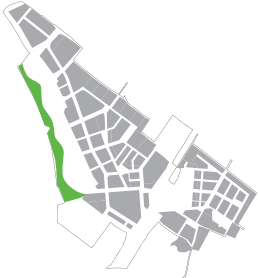


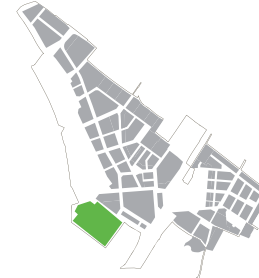
Landscape Typology	PRIMARY OPEN LAND			
	The Western Edge			
	Western Edge: West	Western Edge: Berm	Western Edge: East	Western Edge: Pheasant Field
Key Plan				
Design considerations				
Function	Multi-functional landscape: Supporting <i>Surface Water Strategy (Condition 26)</i> and <i>Flood Reduction Scheme (Condition 28)</i> need. Protecting the Washpit Brook.  - Creating ecological enhancements with new wetland habitats and corridors. - Maintaining existing rural character.	Acoustic buffer providing enhancement to the landscape structure of the Western Edge.  Noise and visual mitigation from M11.  See 3.5 Infrastructure on page 118, Noise on page 133.	Parkland and community allotments  A promenade route along the eastern edge provides a major N-S link and views out over the Western Edge.	A recreational and amenity hub for the local community with sports pitches and community allotments.
Character (Refer to Chapter 4 Character Areas)	A naturalistic rural environment along the M11 corridor relating to the wider context of the surrounding low plateau, pastoral fields, waterbodies and woodland blocks.  Refer to Chapter 4 Character Area 4: Western Edge	A two-sided 6.5m (max) high landform with a gentle slope facing the M11, and a steeper slope facing the built edge.  An attractive semi-rural landscape setting for the edge of Cambridge merging the characters of Western Edge East and West.  Refer to Chapter 4 Character Area 4: Western Edge	Parkland structure containing blocks of trees, formal lawns and informal meadows. Some ornamental aspects to create visual interest. A layered landscape, with defined spaces and uses. Formalised toward built form : More organic/less formal to the west.  Refer to Chapter 4 Character Area 4: Western Edge	Formalised facilities within a rural environment that draw principles from Western Edge West. Flood lit sports pitches for numerous sporting activities.  Formal allotments surrounded by wooded areas and tree cover.  Refer to Chapter 4 Character Area 4: Western Edge
Ecological Value (Refer to Biodiversity Strategy)	Protect and enhance Washpit Brook and its existing environment.  Wetlands, meadows and habitat creation to encourage native wildlife species: <i>BAP Targets</i> .	Enhanced ecological value through the introduction of new habitats and native planting species.	Parkland character.  Native trees species with mixes that support <i>BAP targets</i> . Wetland habitats and meadows within water attenuation areas.	Existing hedgerows to be enhanced.  Improved ecological corridors and new habitats that support target species found within the locality.
Streets (Refer to Access & Movement)	Service route for general utilities and landscape maintenance including the second stage drainage channels for the Washpit Brook.	N/A	Service route for general landscape maintenance and utilities.	N/A
SuDS (Refer to Suds and Surface Water Drainage)	Green Corridor swales within the urban area will carry captured water into the Western Edge where it is transferred into the second stage drainage channel. This channel - running parallel to the Washpit Brook - will provide flood water attenuation, prior to transferring water into the Brook at the north of the Western Edge.	New attenuation ponds and wetland swales located at the base of the berm will capture surface water runoff prior to flowing to the Western Edge West second stage drainage channel.	Green Corridor swales within the urban area will carry captured water into the Western Edge. Swales at the foot of the landform berm will store some runoff. The remainder will be transferred into the second stage drainage channel via culverts.	Swales around perimeter.
Play Facilities (Refer to Youth Facilities and Children's Play)	N/A	Artist installations / sculptural elements which encourage interaction.  See Youth Facilities and Children's Play on page 116.	Informal open spaces. 2no. x Youth Space Trim trails route and equipment  See Youth Facilities and Children's Play on page 116.	Neighbourhood Play Space  See Youth Facilities and Children's Play on page 116.
Tree Planting (Refer to Softscape Species and Planting Structure)	Native species. Structural planting that is complimentary to the existing landscape character and supports the wider aspiration for the Western Edge.	Native species. Woodland blocks in organic arrangements to compliment the landform. Structural planting that supports the wider aspiration for the Western Edge.	Native species. Structure of formalised organic blocks, groups and rows, following footpath alignments/ framing landscape spaces/relating to landform. Supports aspiration for Western Edge.	Native species. Structural planting that is complimentary to the existing landscape character and supports the wider aspiration for the Western Edge. Reinforce existing hedgerows.

Table 3.12 Landscape Design Consideration Table - The Western Edge



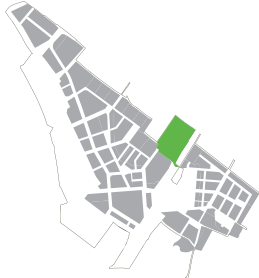
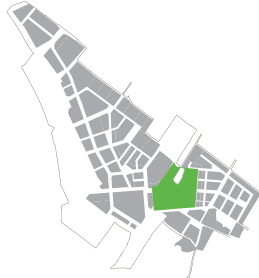
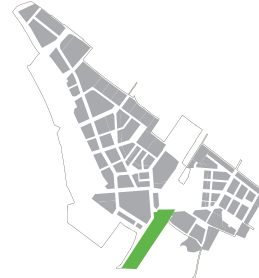
Landscape Typology	PRIMARY OPEN LAND		
	Huntingdon Field	Girton Gap Storeys Field	Ridge and Furrow
Key Plan			
Design considerations			
Function	Formal landscape setting 'of the Cambridge vernacular' at the northern entrance to North West Cambridge. Sports and recreation playing fields. Maintaining the spatial separation between the urban areas of Girton and Cambridge.	Central open amenity space for community recreation. Preservation of Travellers Rest SSSI site. Maintaining the spatial separation between the urban areas of Girton and Cambridge.	Rural landscape setting at the southern entrance to the to North West Cambridge. Grazing of animals. Maintaining the spatial separation between the urban areas of Girton and Cambridge.
Character (Refer to Chapter 4 Character Areas)	Entrance street through playing field parklands surrounded by belts of tree cover and hedgerows. Refer to Chapter 4 Character Area 1: Storey's Field	Open parkland focused upon the cricket pitch with surrounding recreational parkland and play spaces. Feature landscape space of geological importance. Refer to Chapter 4 Character Area 1: Storey's Field	Retained and enhanced landscape character. Pastoral landscape surrounded by hedgerows and trees. Refer to Chapter 4 Character Area 1: Storey's Field
Ecological Value (Refer to Biodiversity Strategy)	New native tree planting including a mix of woodland species and understorey planting or species rich grasses to support biodiversity. SuDS swales with new native wetland habitats. Enhanced orchards.	Retention of badger setts. New native tree planting including a mix of woodland species and understorey planting. Enhancements to include species rich grasslands in areas outside of the cricket pitch.	Mitigate against losses to amphibian foraging habitat surrounding the P&R pond. Protect and enhance existing ecological links (P&R Pond - Bird Sanctuary Pond). Enhance existing hedgerows. Improve grassland habitats.
Streets (Refer to Access & Movement)	Primary Street to the west connects Huntingdon Road to the Local Centre. Bus route and cycling infrastructure.	Secondary streets on the edge of the green space form east-west connection.	Primary Street to the west connects Madingley Road to the Local Centre. Bus route and cycling infrastructure.
SuDS (Refer to Suds and Surface Water Drainage)	Swales alongside the Primary Street.	N/A	Swales alongside the Primary Street. New attenuation pools and wetlands within newt mitigation area.
Play Facilities (Refer to Youth Facilities and Children's Play)	Sports pitches and trim trails See Youth Facilities and Children's Play on page 116.	2no. x Local Play 1no. x Neighbourhood Play 1no. x Youth Space See Youth Facilities and Children's Play on page 116.	N/A
Tree Planting (Refer to Softscape Species and Planting Structure)	Native species. Linear belts to frame the open space.	Native species. Parkland clusters to the north. Woodland blocks to south of cricket pitch relating to existing woodland. General principle to frame the open space.	Hedgerow improvements with native tree species. Wet woodland and coppice associated with wetland areas.

Table 3.13 Landscape Design Consideration Table - The Girton Gap


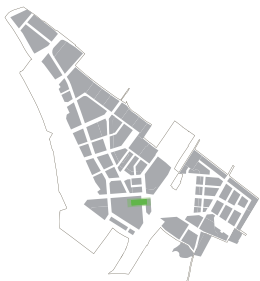


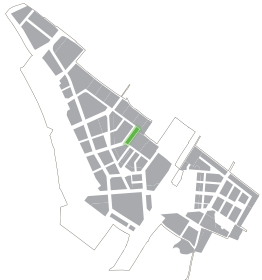
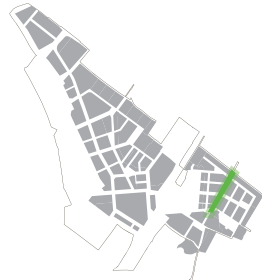

Landscape Typology	SECONDARY OPEN LAND			
	Key Spaces			
	Veteran Oak Garden	Market Square	University Court	Residential Court
Key Plan				
Design considerations				
Function	Focal space within development that respects and retains a veteran pedunculate oak tree (English Oak), which has significant historical and landscape value of local and national significance.	A flexible public open space for a variety of uses located at the heart of the development. Market space. Events space.	An internal shared space courtyard providing car parking facilities for adjacent residential uses.  A connecting space between the Market Square and the Residential Courts to the west.	A series of pedestrian courtyards providing amenity value for the surrounding residential uses.  Connecting spaces between the Market Square, University Court and the Western Edge.
Character (Refer to Chapter 4 Character Areas)	A local green space that is to be respected as a historic feature.  A protected area to be left undeveloped, retaining only the feature oak tree and existing grassland.  Refer to Chapter 4 Character Area 3: Local Centre	Local plaza surrounded by retail and town centre building uses.  Refer to Chapter 4 Character Area 3: Local Centre	Hard landscape, shared space for parking and pedestrians.  Courtyard space with formal planting and trees.  Framed by the adjacent residential development.  Refer to Chapter 4 Character Area 3: Local Centre	Contemporary courtyard spaces with formal planting, trees and areas for sitting and relaxation.  Framed by the adjacent residential development.  Refer to Chapter 4 Character Area 3: Local Centre
Ecological Value (Refer to Biodiversity)	No improvements or enhancements.  The veteran oak has significant conservation value for both nature and as an aesthetic feature.	Enhancement should be made where possible, such as green walls to facades.	Enhancement should be made where possible, such as green walls to facades.	Enhancement should be made where possible, such as green walls to facades and formal habitat creation.
Streets (Refer to Access & Movement Strategy)	Primary Street runs along the south side of the space.  To be located outside the root protection area of the tree to ensure that it is not affected by development.	Bus Gate Street runs through the eastern portion of the square.	Access Street provides vehicular access.	One way Service Access only for emergency and refuse vehicles.
SuDS (Refer to Drainage and SuDS Strategy)	N/A	Rain gardens within public realm.	Rain gardens within public realm.	Rain gardens within public realm.
Play Facilities (Refer to Youth Facilities and Children's Play Strategy)	N/A	N/A	N/A	Doorstep Play to be included in some capacity. See Youth Facilities and Children's Play on page 116.
Tree Planting (Refer to Planting Structure)	No trees will be planted to avoid disturbance to the existing tree.	Formal tree planting arranged to maximise active retail frontages.	Formal tree planting to minimise the impact of vehicle parking, and movement and to improve the aesthetic of the space for pedestrians and amenity value for residents.	Formal tree planting, to compliment the layout of the spaces, reinforce connections and provide amenity value for residents.

Table 3.14 Landscape Design Consideration Table - Key Spaces

## SECONDARY OPEN LAND

### Key Spaces

Neighbourhood Park	Chestnut Avenue	Academic Square
		
<p>A large park space for all ages of children, providing amenity facilities for the adjacent residential community.</p> <p>The starting point of Green Corridor 3, within the Neighbourhood Village.</p>	<p>Pedestrian and cycle link from Huntingdon Road into Storey's Field Character Area welcoming visitors and residents to North West Cambridge through an existing mature attractive landscape feature.</p> <p>An intrinsic part of the overall pedestrian and cycle network, reinforced by the presence of the horse chestnut trees.</p>	<p>A park space to serve the amenity needs of the Science and Academic student community and nearby residents.</p> <p>A focal point for the local community.</p>
<p>An inclusive, safe, linear park space that provides play equipment, informal sports facilities, structured and informal play for a range of age groups, whilst offering an amenity green space resource for adults. A legible and clearly visible park space.</p> <p>Hard and soft landscaping with seasonal, colourful planting species to provide year round interest for users.</p> <p>Refer to Chapter 4 Character Area 2: Neighbourhood Village</p>	<p>An existing avenue of mature trees predominantly horse chestnut species with a 'lane-like' character.</p> <p>A strong landscape feature and key route into the development.</p> <p>Refer to Chapter 4 Character Area 2: Neighbourhood Village</p>	<p>Multi-functional space for informal gatherings such as picnics and small sport events, with the capacity to host more formal organised events.</p> <p>An open space with a relaxed character; that of a traditional village green.</p> <p>Refer to Chapter 4 Character Area 6: Madingley Rise</p>
<p>Enhancement should be made where possible, including small scale habitat creation such as rain gardens within public realm and bat boxes within trees.</p>	<p>To be retained and improved where possible.</p> <p>Complement character with new species rich hedgerows.</p>	<p>Enhancement should be made where possible, such as green walls to facades, rain gardens within public realm and bat boxes within trees.</p>
<p>Secondary Street runs along the western edge.</p>	<p>Intersected by Tertiary Streets at two points with Tertiary Street running parallel.</p>	<p>Secondary Street forms the perimeter to this square.</p>
<p>Rain gardens within public realm to feed into the SuDS framework within the Green Corridor.</p>	<p>N/A</p>	<p>Rain gardens within public realm.</p>
<p>Neighborhood Playable Space</p> <p>See Youth Facilities and Children's Play on page 116.</p>	<p>N/A</p>	<p>N/A</p>
<p>Tree planting to be structured in accordance with the aesthetic of the character area and design of the park space, reinforcing connections and providing amenity value for residents.</p>	<p>Horse chestnut trees will be carefully managed. Measures to manage diseased and decaying horse chestnut trees will be discussed at detailed design stage. Buildings should be setback from the Horse chestnut trees by 20m to respect the Root Protection Areas of the existing trees and allow enough space to plant between them and slightly further back from the cycle route.</p>	<p>Formal parkland type tree planting to compliment the character of the space.</p>

# Landscape Typology - Primary Open Land

## The Western Edge

Primary Open Land is made up of two main components, the Western Edge and the Girton Gap.

The Western Edge is an attractive semi-rural landscape corridor that forms a picturesque contemporary green space between the urban edge of the development and the M11 Motorway. It will provide a great resource for residents and visitors alike through a range of landscape typologies, characters and uses, whilst providing valuable habitats and ecological features.

At the southern end of the Western Edge is Pheasant Field which provides traditional allotment gardens and formal sports facilities, including one area of flood lit all weather pitches.

To the east, landforms embrace a series of interconnected parkland pockets with gently south facing species rich grassland and areas for informal recreation. An elevated promenade - located against the built development edge - runs the length of the parklands offering views over the landscape and access into the various courtyards and buildings along its edge. In the north the shallow valley surrounding the existing Washpit Brook embraces a second area of new allotments in an organic layout of gardens bounded by low hedgerows. A weir on the brook creates a crossing point between

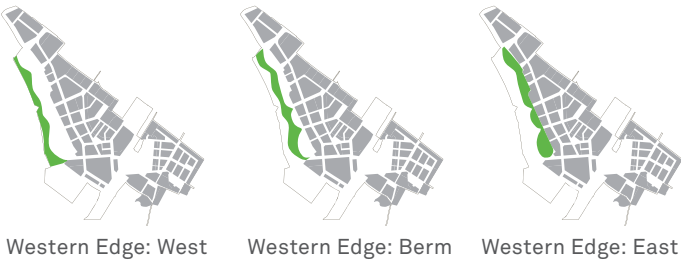


Figure 3.80 Western Edge Key Areas

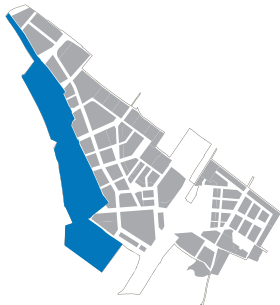


Figure 3.81 Western Edge Key Plan



Figure 3.82 The Western Edge Illustrative Plan



the allotment gardens, offering views along the water course.

To the west the landscape is heavily influenced by the Washpit Brook and new water channels and wetland areas that provide an important function in the SuDS framework by managing surface water runoff from the development. See 3.5 Infrastructure on page 118, SuDS and Surface Water Drainage on page 126.

To motorists travelling along the M11, the Western Edge will offer an eye catching foreground to this transformed peripheral edge of Cambridge. From further afield the Western Edge helps to minimise the impact of the development on long distance views.

Internally the Western Edge may be explored via a network of sinuous paths that integrate with the varied topography and planting, offering visitors a constantly changing experience of views and unfolding landscape characters. Embedded within the network will be seating areas at key locations and informal bike routes, art pieces, jogging paths and nature trails.

See Chapter 4 Character Area 4: Western Edge on page 189



Figure 3.83 Accessible parkland in the Western Edge.



SuDS swales, wetland habitats and wild flower meadows make up the semi-rural parkland of the Western Edge: West.

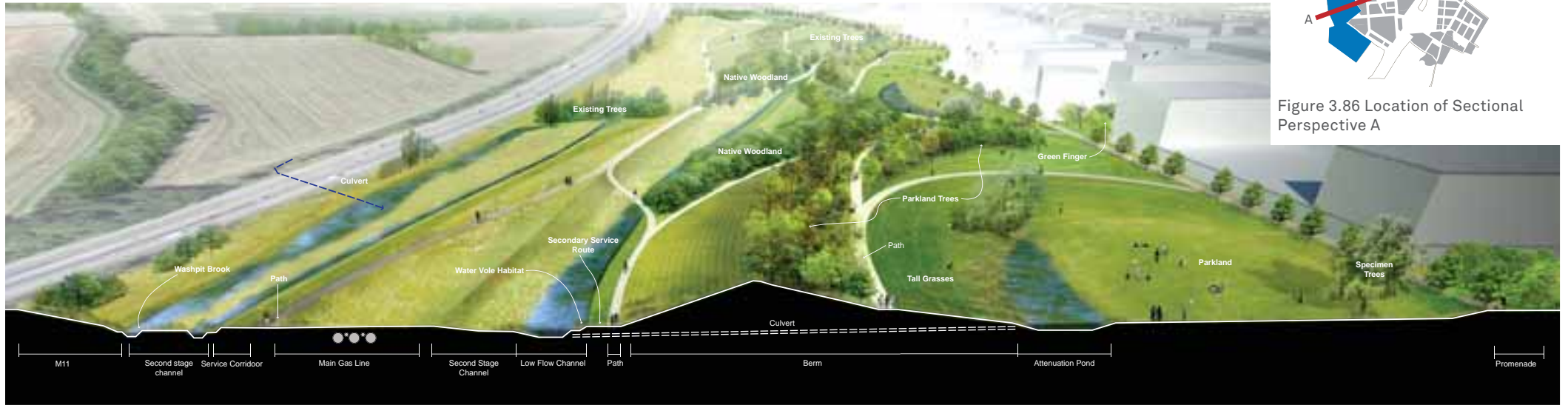


Figure 3.84 The Western Edge - Sectional Perspective A

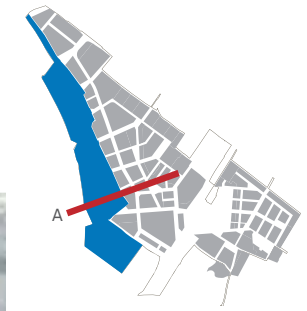


Figure 3.86 Location of Sectional Perspective A

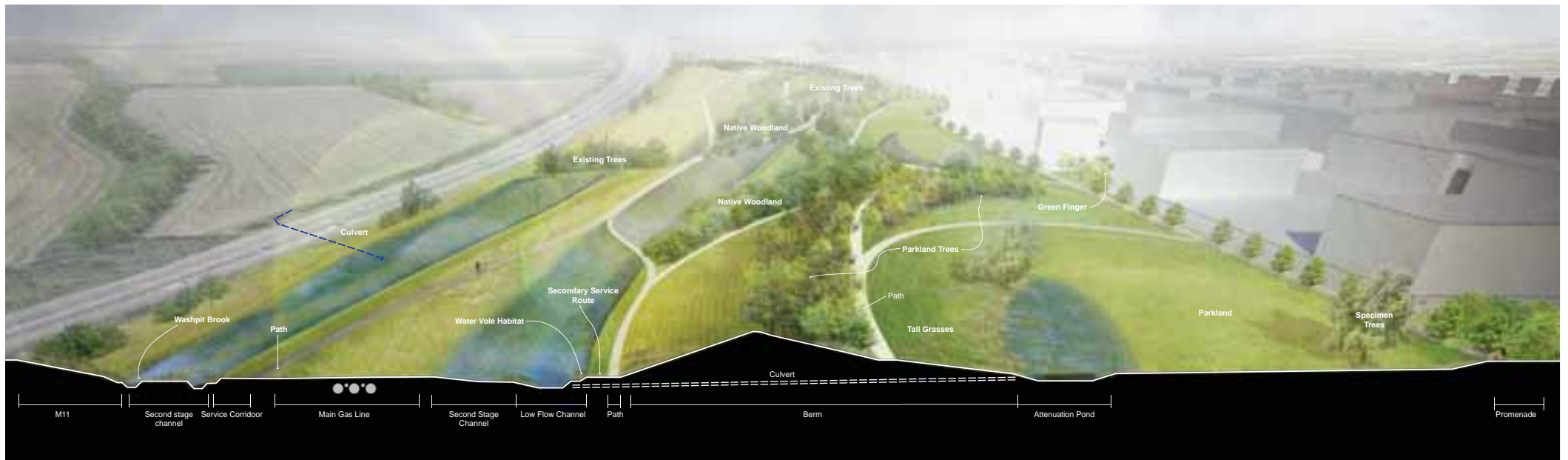


Figure 3.85 The Western Edge - Sectional Perspective A - Flooded



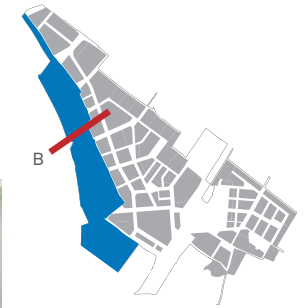


Figure 3.89 Location of Sectional Perspective B



Figure 3.87 The Western Edge - Sectional Perspective B

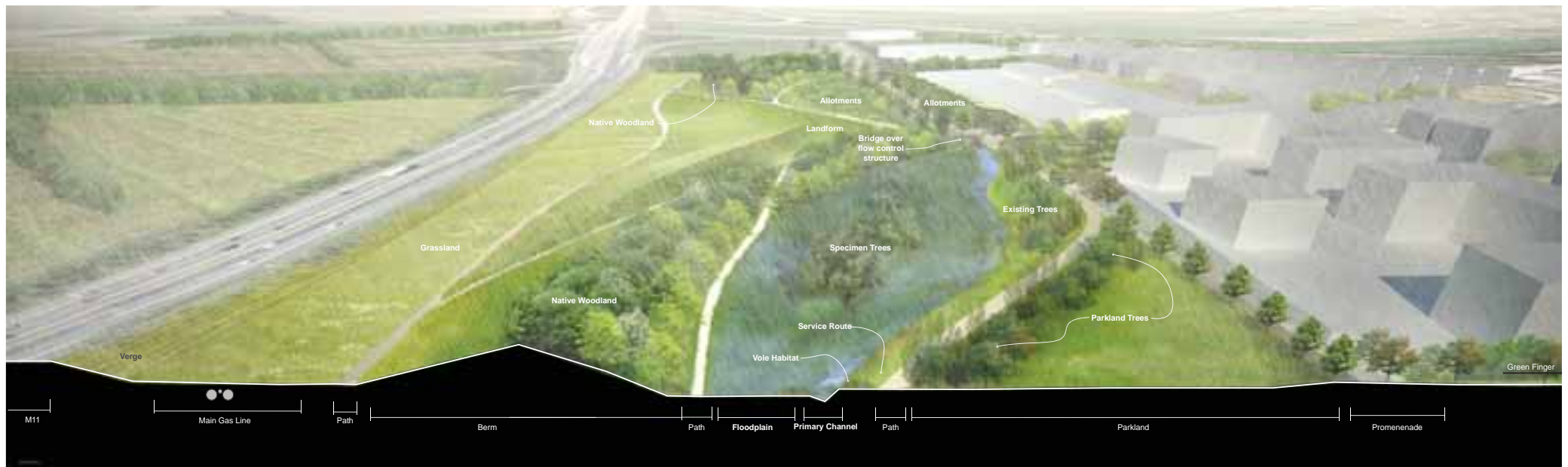


Figure 3.88 The Western Edge - Sectional Perspective B - Flooded

## The Western Edge Landform

Central to the Western Edge is a new berm landform (varying in height from 5 to 10 m) which has been created to fulfil a range of landscape and environmental functions:

- Address the balancing of cut and fill across the site from building plots within the urban area.
- Uses surplus spoil from SuDS and drainage excavations to create an exciting and experiential landscape feature, crafted out, above the existing topography.
- Provide an amenity benefit for the new residents to North West Cambridge by forming an acoustic barrier that will reduce noise from the M11, across the Western Edge East, and to the ground floor occupiers along the development edge. See 3.5 Infrastructure, Noise on page 133.
- Reduces the visibility of the M11 from within the site.

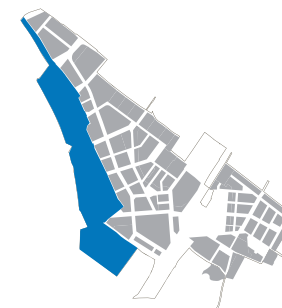


Figure 3.91 Western Edge Key Plan

The landform is two-sided, with a gentle slope facing the M11, and a steeper slope facing the built edge of the development. This double-sided land form will establish an attractive semi-rural landscape setting to Cambridge itself, making the setting more sympathetic to the local landscape.

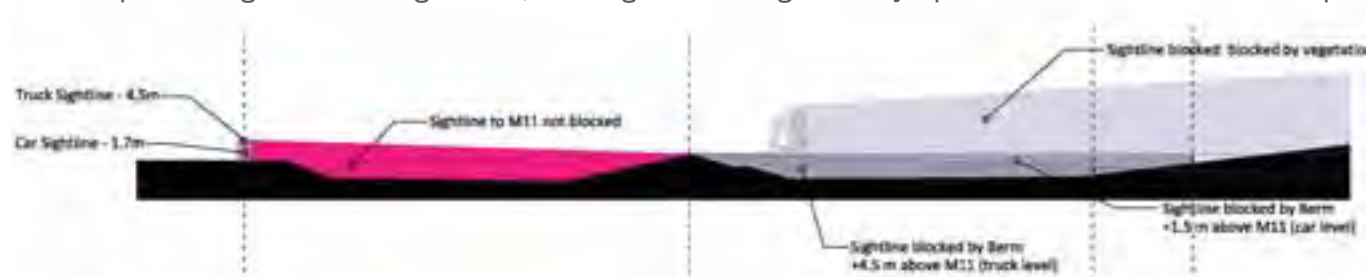
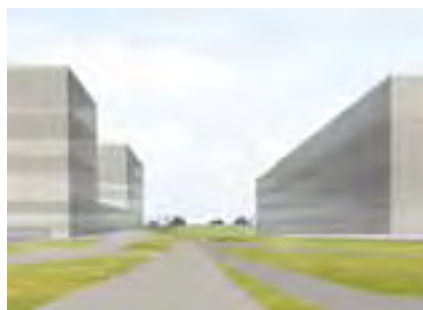
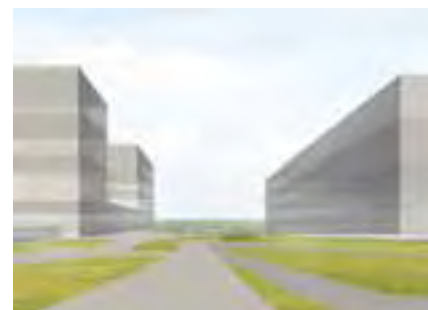


Figure 3.90 Landform and Sightline



View from within the development:  
Without landform



View from within the development:  
With landform



View from within the development:  
With landform and vegetation screening



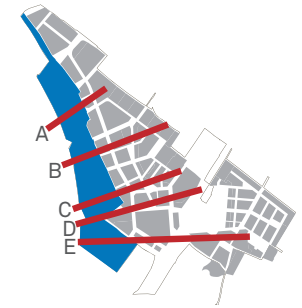


Figure 3.93 Sections A to E Key

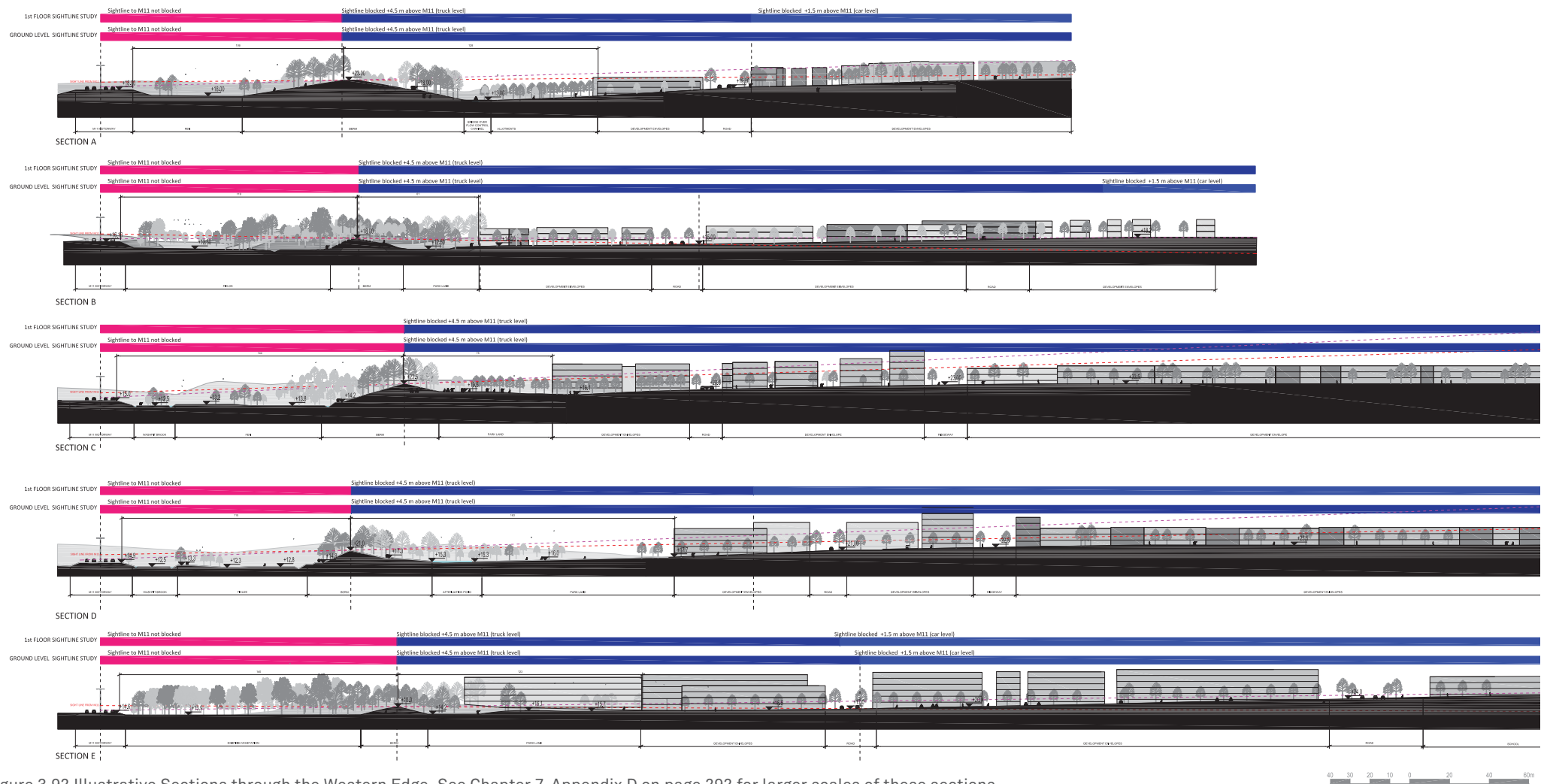


Figure 3.92 Illustrative Sections through the Western Edge. See Chapter 7, Appendix D on page 292 for larger scales of these sections.

## Landscape Typology - Primary Open Land

### The Girton Gap

The Girton Gap comprises a series of three landscape typologies that are distinguished by their form, use and landscape character: Huntingdon Field, Storey's Field and Ridge & Furrow Field.

Collectively the spaces provide spatial separation between the urban areas of Girton and Cambridge, as determined by planning policy through the *North West Cambridge Area Action Plan*, and provide a variety of open space resources for the local community.

Huntingdon Field is a large flat open space at the northern most point in the Girton Gap, facing onto Huntingdon Road providing playing fields, sport pitches and a pavilion within a parkland setting. The primary route into North West Cambridge is located on the western edge of the space framed by lines of trees.

Storey's Field is central to the Girton Gap and will be a new park for the city of Cambridge, similar in scale to Parker's Piece. It is the focal green space at the heart of the development .

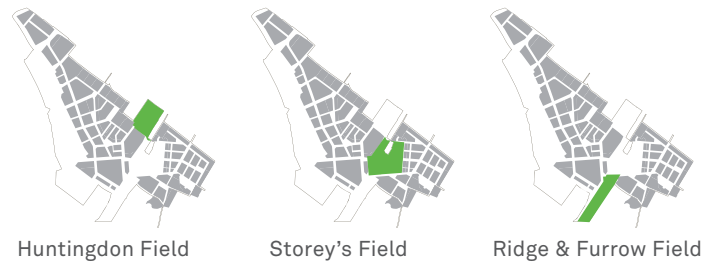


Figure 3.94 Girton Gap Key Areas

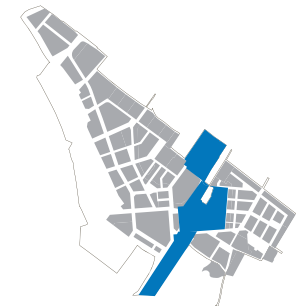


Figure 3.95 Girton Gap Key Plan



Figure 3.96 The Girton Gap Illustrative Plan

The vision for this park includes formal recreational provision combined with informal open space for picnics and family gatherings. It also incorporate the Traveller's Rest Pit geological SSSI. Storey's Field will become one of the parks that are characteristic of Cambridge, providing space for local events, relaxation and an area for wildlife to flourish.

The Ridge and Furrow Field is an existing area of grazing pasture which was previously used for agriculture using medieval techniques. The historic features of the field remain intact and are to be preserved through the landscape strategy as a remnant to the local areas' historic past. Located at the south of the Gap the future use of the area is yet to be determined and may involve the process of agistment where grazing of cows, sheep, goats & small livestock may be consider adding another layer of interest to the landscape structure.

See Chapter 4 Character Area 1: Storey's Field on page 153.



Figure 3.97 Spatial framework of open spaces providing sports and recreational resources centred around the Cricket Green.



The series of amenity spaces are interconnected throughout the Girton Gap providing links to the wider area.



## Landscape Typology - Secondary Open Land

### The Green Corridors

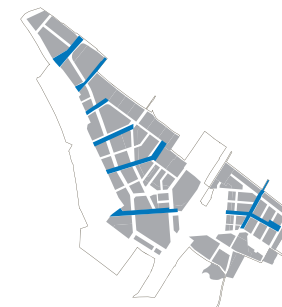


Figure 3.98 Green Corridors Key Plan

The Green Corridors force regular breaks in the built form of the urban area and provide direct multi-functional open space connections to the Western Edge. They offer well designed, attractive, overlooked and legible routes for pedestrians and cyclists, supporting the amenity requirements of the local community, by placing green spaces at close proximity to every address. The Green Corridors run perpendicular to the gradual slope of the topography of the site, to aid SuDS drainage. Eastward the Green Corridors tap into the heart of the urban form; westward they are the link to the wider countryside. See Section 3.3 Access and Movement, Pedestrian and Cycling on page 70.

The design of the Green Corridors ensures connections of neighbourhood boundaries with all major open land in the Proposed Development. In addition the Green Corridors will provide large unobstructed spaces for informal recreation and play, as well as areas for more informal recreation. See Youth Facilities and Children's Play on page 116.

These predominantly green spaces will be shaped in such a way that they interact with the urban fringe of houses and streets on



Figure 3.99 An illustrative Green Corridor cutting through the built form of Collegiate and Academic before spilling out into the Western Edge.



either side in a dynamic and active fashion. The establishment of an integrated landscape infrastructure will involve integrating habitats, amenity and water management corridors together in one symbiotic relationship.

The relationship with the Western Edge is an important element in the ‘place making’ of North West Cambridge, particularly in relation to the landscape structure and the visual amenity that the Western Edge has to offer. The orientation of vegetation and other features must aim to maintain a view corridor along the Green Corridor toward the Western Edge (or other concluding spaces) to maintain this visual connection.

The orientation of the SuDS infrastructure and associated planting should be used to reinforce this approach, by positioning trees and planting to maintain distant views beyond, such as the use of feature trees as markers, or trees grouped together to frame views beyond. See Section 3.5 Infrastructure, SuDS and Surface Water Drainage on page 126.

Table 3.16 and Table 3.17 on the following pages illustrates the design principles for the Green Corridors in more detail.

No.	Green Corridor Character
1	This will be a balance between the contemporary design of the Local Centre, and the ecological nature of the Western Edge. The character will be more public realm, complimenting the architecture whilst encompassing features such as SuDS and ecological planting. Pedestrian and cycle usage will be at its highest due to its central location.
2	This will be a contemporary gardenesque landscape which compliments the character of the Neighbourhood Village, whilst providing a residential feel along the corridor with a series of play spaces. It will include Green Corridor features such as SuDS.
3	This will be the main cycle connection to Girton Village and The Ridgeway. A series of interconnected community pocket parks will provide opportunities for open space use. It will include Green Corridor features such as SuDS.
4	This corridor will incorporate outdoor activities in the form of outdoor gyms and water gardens, whilst encompassing the Green Corridor features such as SuDS
5	An ecological park corridor with SuDS, with a predominance of informal native tree and shrub planting, with wildlife habitats throughout the corridor.
6	A formal landscape environment linking with the Primary Street Avenue Character. The links and view to the Western Edge will be retained. It will include Green Corridor features such as SuDS.
7	This will be orientated towards the local community and families, with doorstep play spaces and a car free environment. Greater cycle facilities.
8	Chestnut Avenue Lane. A tree lined thoroughfare with a rural feel to the route.

Table 3.15 Character of different Green Corridors



Figure 3.101 Green Corridor 1 approaching the Local Centre.

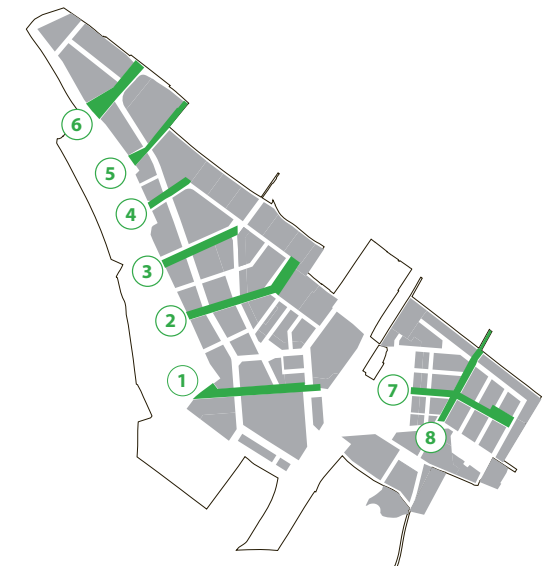


Figure 3.100 The Green Corridors with numbers in the context of the masterplan.

	Design Principles	SECONDARY OPEN LAND							
		Green Corridor 1	Green Corridor 2	Green Corridor 3	Green Corridor 4	Green Corridor 5	Green Corridor 6	Green Corridor 7 Neighbourhood Village East	Green Corridor 8 Horsechestnut Avenue
Function	Linear open green spaces for amenity use with multiple landscape, access and ecological functions.  Provides breathing spaces between development blocks and access to green space at close proximity to residential properties.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	None
Character (Refer to Chapter 4 Character Areas)	Linear landscape feature and green connection between the Western Edge and the heart of the development.								
Ecological Value (Refer to Biodiversity)	Solutions to enhance the SuDS network from a biodiversity and wildlife perspective.  A mix of native trees in varying groups and forms will be used to enhance the ecological value of the Green Corridors.  Native wetland planting mixes to be used.  A variety of meadow grass species mixes to be used.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	To be retained as an avenue of Horse Chestnut trees and existing hedgerows (enhanced).
Streets (Refer to Access & Movement)	Tertiary Streets: Min 4.5m width (2 lanes), Max 6m width (2 lanes)	Yes	Yes	Yes	Yes	No	No	No	Yes
	Primary Streets: Min 6.0m width (2 lanes)	No	No	No	No	No	Yes	No	No
SuDS (Refer to SuDS & Surface Water Drainage)	All swales will have a clearly defined main channel for common flows which will occupy a relatively small width of 1-2m depending on flow specifications.  The main channel will be vegetated with species that can tolerate wet or dry conditions and have a maximum freeboard depth of 30cm. Planting should be used to discourage entry to the main channel.	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Table 3.16 Green Corridors Design Principles

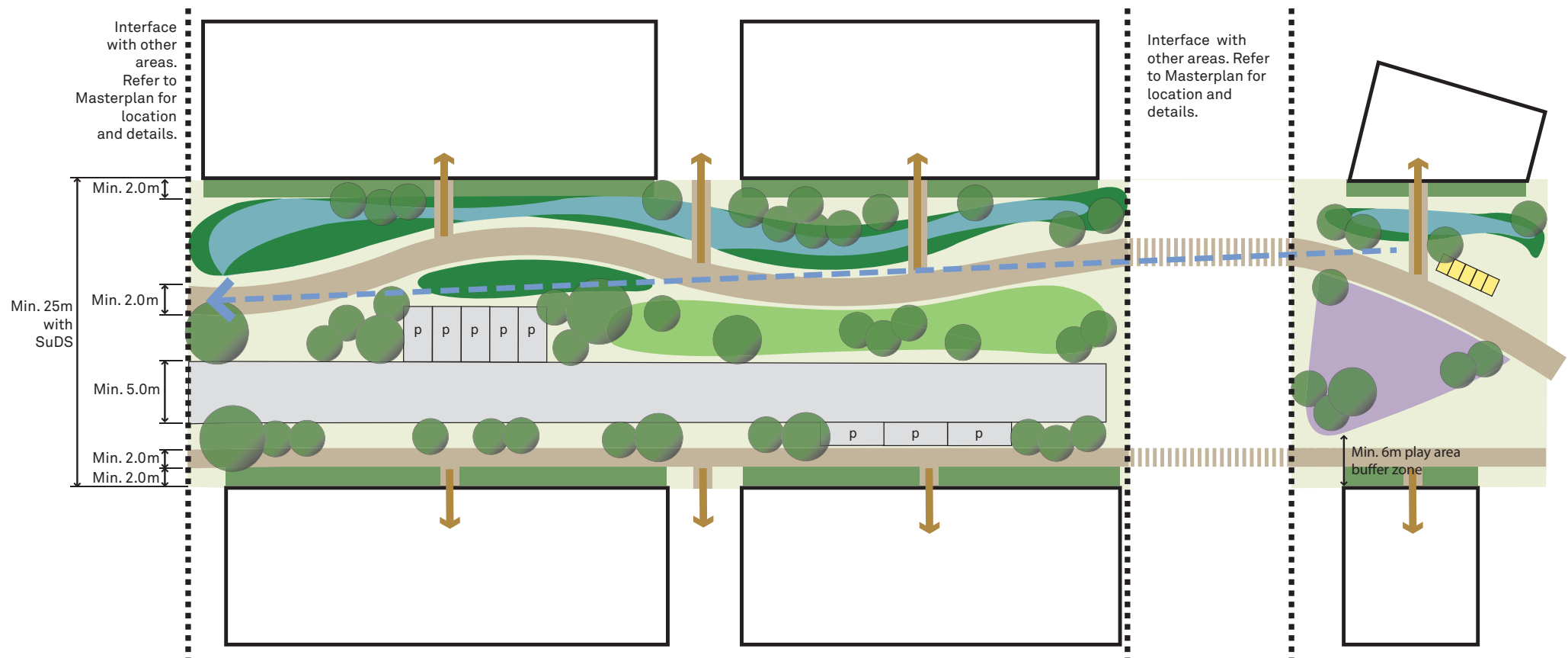
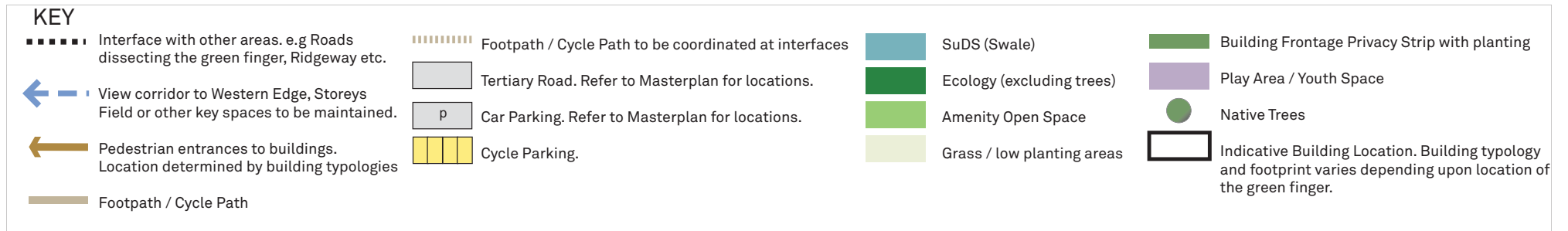
	Design Principles	SECONDARY OPEN LAND							
		Green Corridor 1	Green Corridor 2	Green Corridor 3	Green Corridor 4	Green Corridor 5	Green Corridor 6	Green Corridor 7	Green Corridor 8
								Neighbourhood Village East	Horsechestnut Avenue
SuDS cont.. (Refer to SuDS & Surface Water Drainage)	<p>Porous soil layers in swales will also allow sub-surface flow.</p> <p>The main channel can be allowed to meander within the Green Corridor, but it should be sized and shaped to consistently provide for predicted common flows.</p> <p>Adjacent to the main channel, edges should be sloped to accommodate larger storm flows and direct a clear flow path through to the western edge. The storm channel slopes should be designed to be used for other purposes outside of storm events. Accordingly, design should enable easy access and maintenance. Grassed edges should include a shallow slope (minimum 1:5) to be used for play and recreation, while hard edges can be used on one side to provide the necessary depth to accommodate storm flows.</p>								
Play Facilities (Refer to Youth Facilities and Children's Play)	The function of the individual play area will cater for age groups as indicated in the Play Strategy section. The design should consider the overall aesthetic and character of the Green Corridor.	1no. x Local Playable Area	2no. x Doorstep Playable Space  1no. x Neighbourhood Playable Space	1no. x Youth Space	1no. x Doorstep Playable Space	1no. x Doorstep Playable Space  1no. x Local Playable Area	1no. x Neighbourhood Playable Space	4no. x Doorstep Playable Space	None
Tree Planting (Refer to Softscape Species and Planting Structure)	<p>Trees will be located away from buildings in accordance to species and reference to BS 5837:2012. Consideration must be taken for the trees rootzone to avoid any encroachment onto adjacent buildings.</p> <p>Street / Path setback, Min. 1.0m from trunk to street edge</p> <p>Trees should be planted to create an aesthetic in keeping with the character of the Green Corridor.</p> <p>At key building entrances, trees should be located so that the entrances are framed to maintain legible access routes.</p> <p>Predominantly native species to be used. Species to be agreed with the Project Ecologist.</p>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	This will be maintained as an avenue of Horse Chestnut trees.



Design Principles			SECONDARY OPEN LAND							
			Green Corridor 1	Green Corridor 2	Green Corridor 3	Green Corridor 4	Green Corridor 5	Green Corridor 6	Green Corridor 7 Neighbourhood Village East	Green Corridor 8 Horsechestnut Avenue
Design Parameters	Car Parking	Parallel Parking Bays: 1.8m width x 6.1m length Head On Parking (90o) Bays: 2.4 width x 4.8m length	Yes	Yes	Yes	Yes	No	Yes	No	Yes
	Pedestrian & cycle paths	Min 2.0m width, Max 4.0m width. Pedestrian Paths =Min. 2.0m Pedestrian/Cycle Path =Min. 3.0m width Cycle only =Min. 3.0m width	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Pedestrian/ Cycle path setbacks:	Setback from Buildings Min. 2.0m Setback from SuDS Min. 1.0m	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Cycle Parking:	To be located in proximity of key amenity facilities along the Green Corridors, such as play areas.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Width (Building Frontage to Building Frontage):	Width ( Building Frontage to Building Frontage): Min 20.0m width with no SuDS Min 25.0m width with SuDS. Max 30.0m width	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Pedestrian entrances to buildings:	All pedestrian entrances to buildings will include direct path access from the Green Corridors. Min 2.0m width.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Building Frontages Privacy Strip with planting:	Planting adjacent to buildings should be 0.9m to 1.8m height to maintain views from windows. Min 2.0m width to provide appropriate privacy from interior uses.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 3.17 Green Corridors Design Parameters

# Green Corridor Key Features



This typical Green Finger plan should be read in conjunction with the green finger principles table and the character areas of the Design Codes. The principles illustrated are specific to green fingers 1 to 7 only but are not exhaustive or all-encompassing.

Figure 3.102 Typical Green Corridor Illustrative Plan

### 30m SuDS Corridor - Option 1

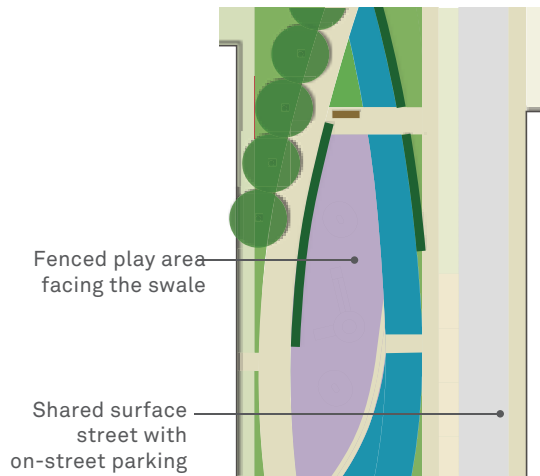


Figure 3.103 30m Green Corridor - Option 1 Illustrative Plan

- 1 Stage 1: Rain garden with permeable base to attenuate building runoff
- 2 Stage 2: Covered shallow urban canal/rill to convey runoff beneath the footpath
- 2a Stage 2a: Covered shallow urban canal/rill to convey water beneath the street
- 3 Stage 3: A slight depression urban canal/rill outflows into Green Corridor directs runoff across the greenspace and into swale
- 3a Stage 3a: Street runoff into streetside planting beds
- 4 Stage 4: Urban canal/rill either connects to underground perforated pipe or flows into streetside planting beds
- 5 Stage 5: Perforated pipe beneath streetside planting connected to a standard pipe beneath footpath that connects to top of the swale (1 in 100yr level)

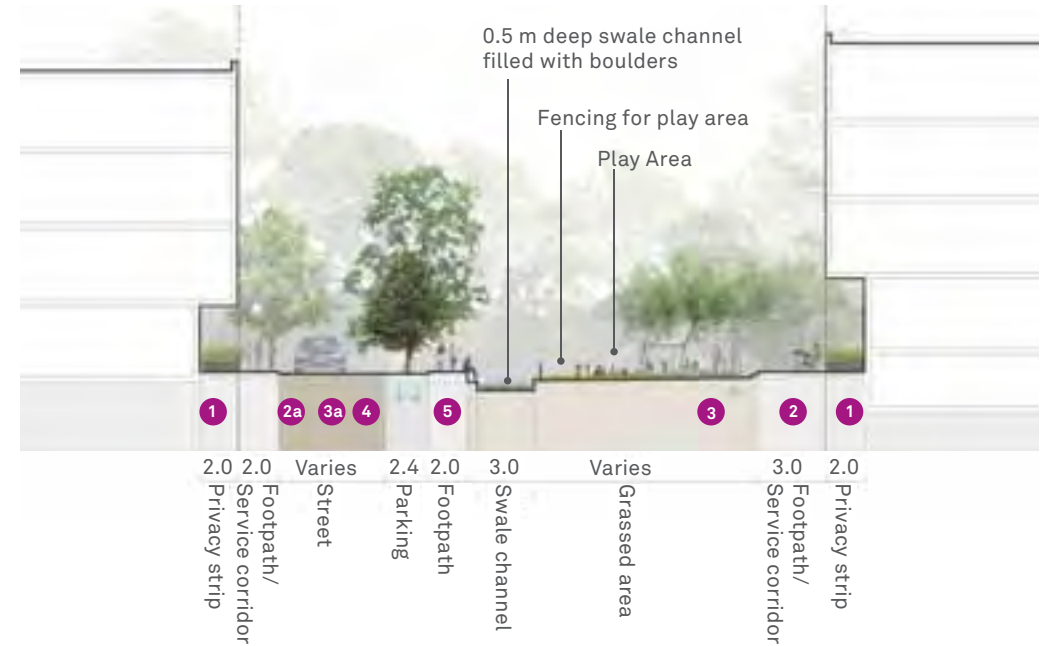


Figure 3.104 Typical section of 30m SuDS Corridor - Option 1

### 30m SuDS Corridor - Option 2

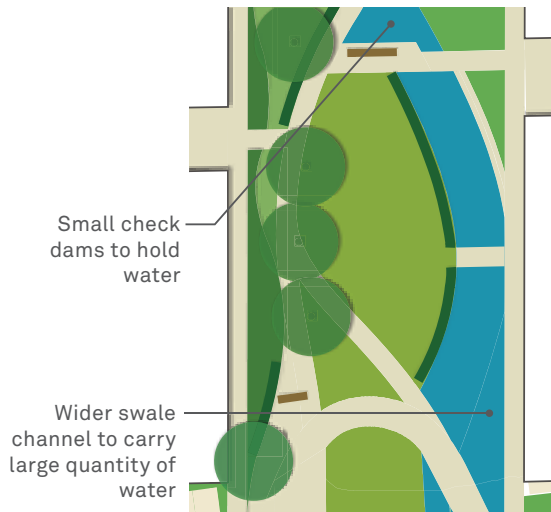


Figure 3.105 30m SuDS Corridor - Option 2 Illustrative Plan

- 1 Stage 1: Rain garden with permeable base to attenuate building runoff
- 2 Stage 2: Covered urban canal/rill transfers runoff into sunken planting beds for further runoff storage. Rill outfall towards to the top of the planting bed
- 2a Stage 2a: Overflow from raingarden is piped beneath the footpath and planting areas to an outfall at the top of the swale bank
- 3 Stage 3: A slight depression urban canal/rill outflows into Green Corridor directs runoff across the greenspace and into the swale

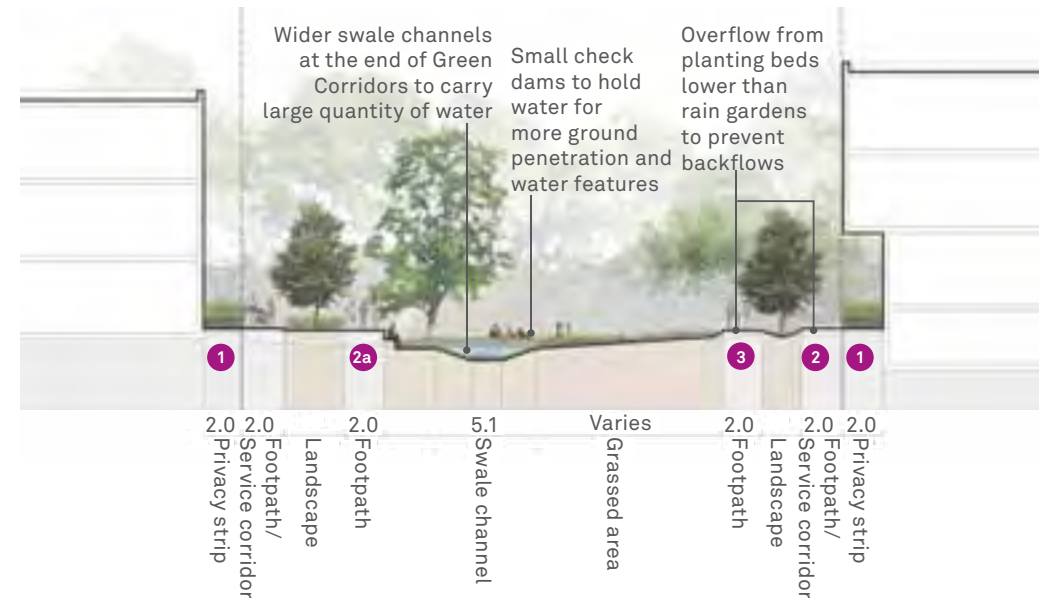


Figure 3.106 Typical section of 30m SuDS Corridor - Option 2

## 25m SuDS Corridor

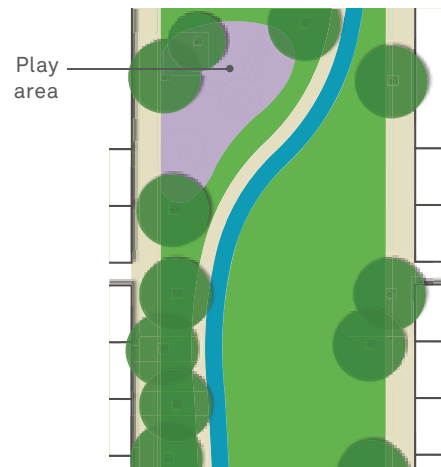


Figure 3.107 25m SuDS Corridor Illustrative Plan

- 1 Stage 1: Rain garden with permeable base to attenuate building runoff
- 1a Stage 1a: Building runoff collected at the base of the building and piped directly into the swale. Outfall to swale at the 1 in 30yr flow level
- 2 Stage 2: Covered shallow urban canal/rill to convey runoff beneath the footpath
- 3 Stage 3: A slight depression urban canal/rill outflows into Green Corridor directs runoff across the greenspace and into the swale

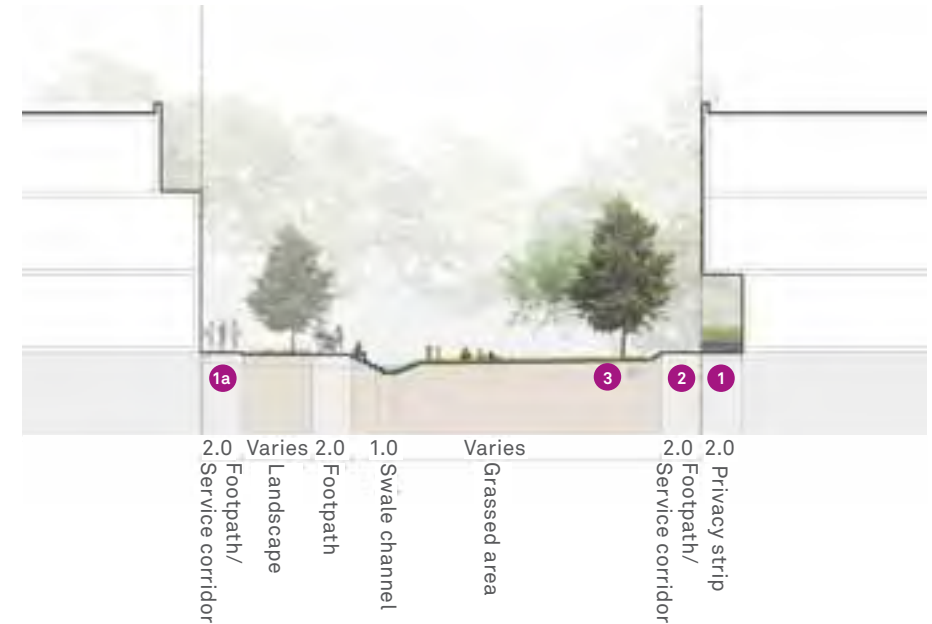


Figure 3.108 Typical section of 25m SuDS Corridor

## 20m Green Corridor

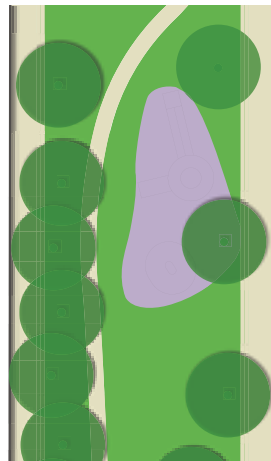


Figure 3.109 20m Green Corridor Illustrative Plan

In some areas, Green Corridors may not have a SuDS function (possibly due to ground conditions or topography). In these areas, Green Corridors will provide amenity space, possibly play areas, seating and footways or cycleways.

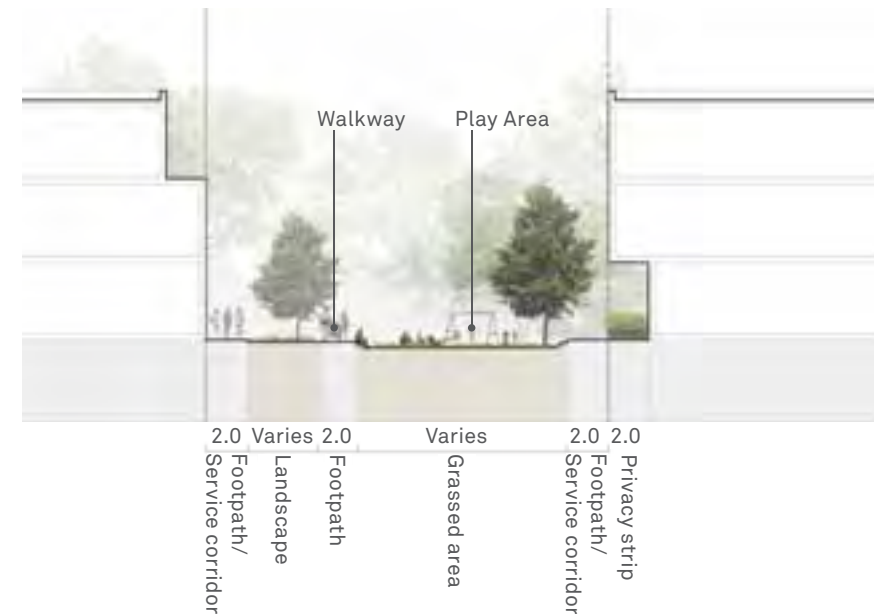


Figure 3.110 Typical section of 20m Green Corridor

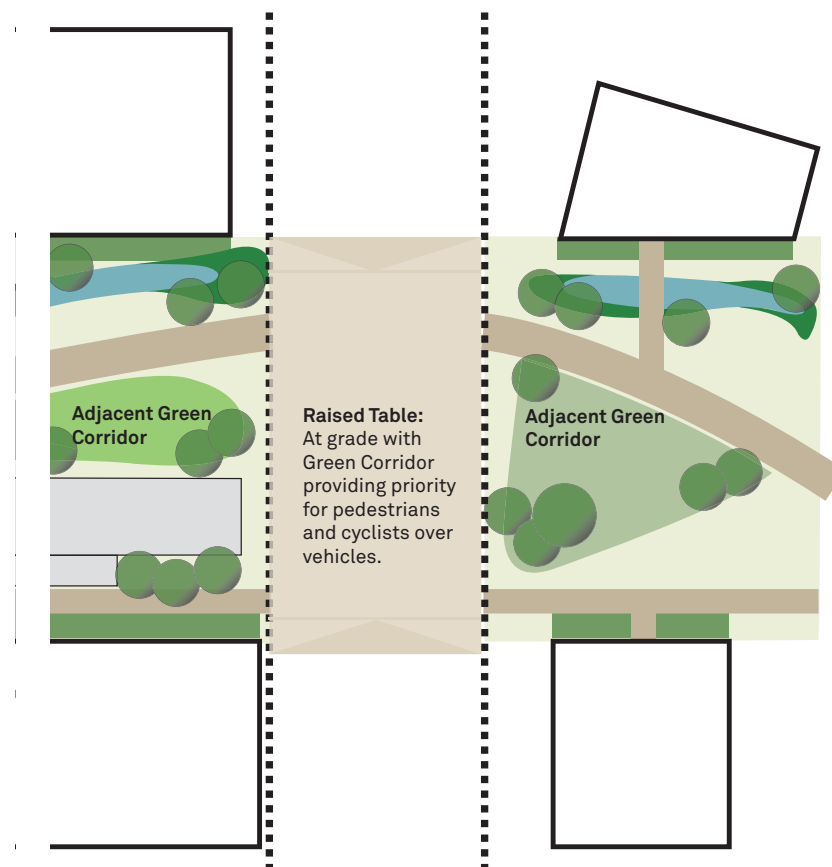


## Green Corridor Junctions and Interfaces

The principles for the junctions and interfaces are summarised by 3 key principles as follows:

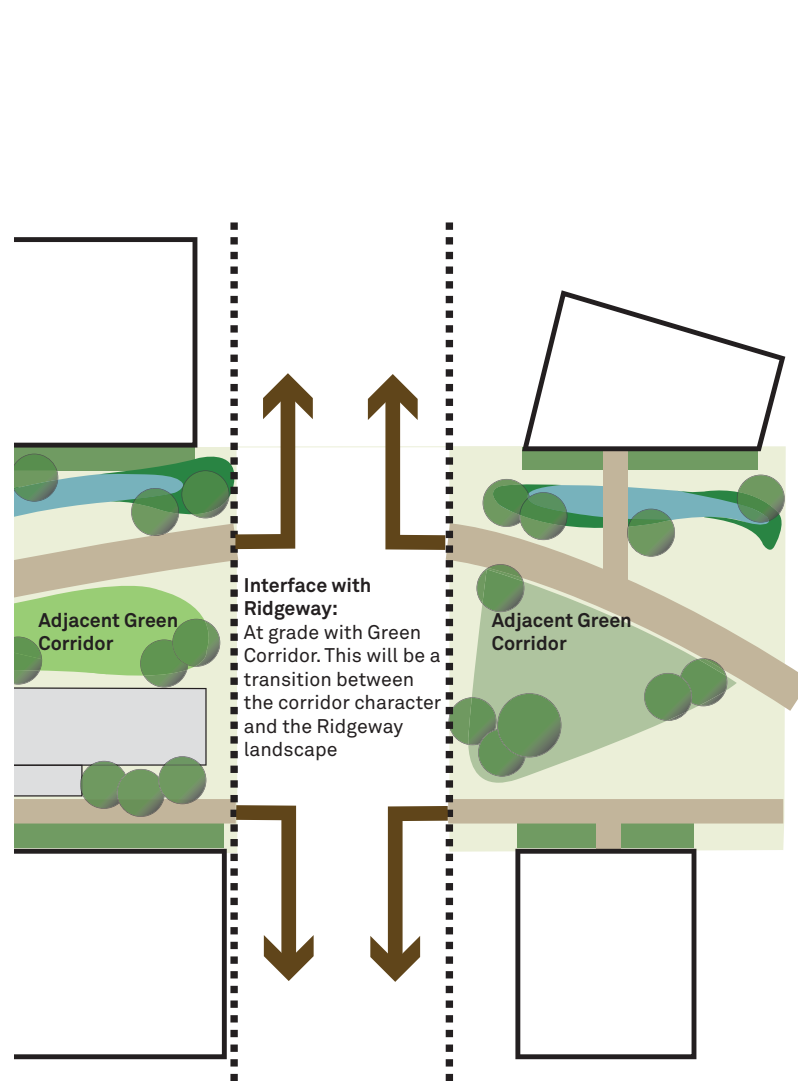
- Green Corridors that are dissected by a street, will incorporate a raised table which is at grade to the corridor. These will give priority to pedestrians and cyclists over vehicles providing a direct connection. Vehicle speeds will be limited to 20mph. See Section 3.3 Access and Movement, Pedestrian and Cycling, Raised Table on page 71.
- Green Corridors that are dissected by the Ridgeway will be designed so that there is a gradual transition between the Green Corridor landscape and the Ridgeway character. See The Ridgeway Landscape on page 102.
- The interface with the Western Edge will be applicable to all Green Corridors. This will be a subtle transition between the parkland character of the Western Edge and the meandering linear nature of the corridors. See The Western Edge on page 84.

Also see Hard Material on page 106.



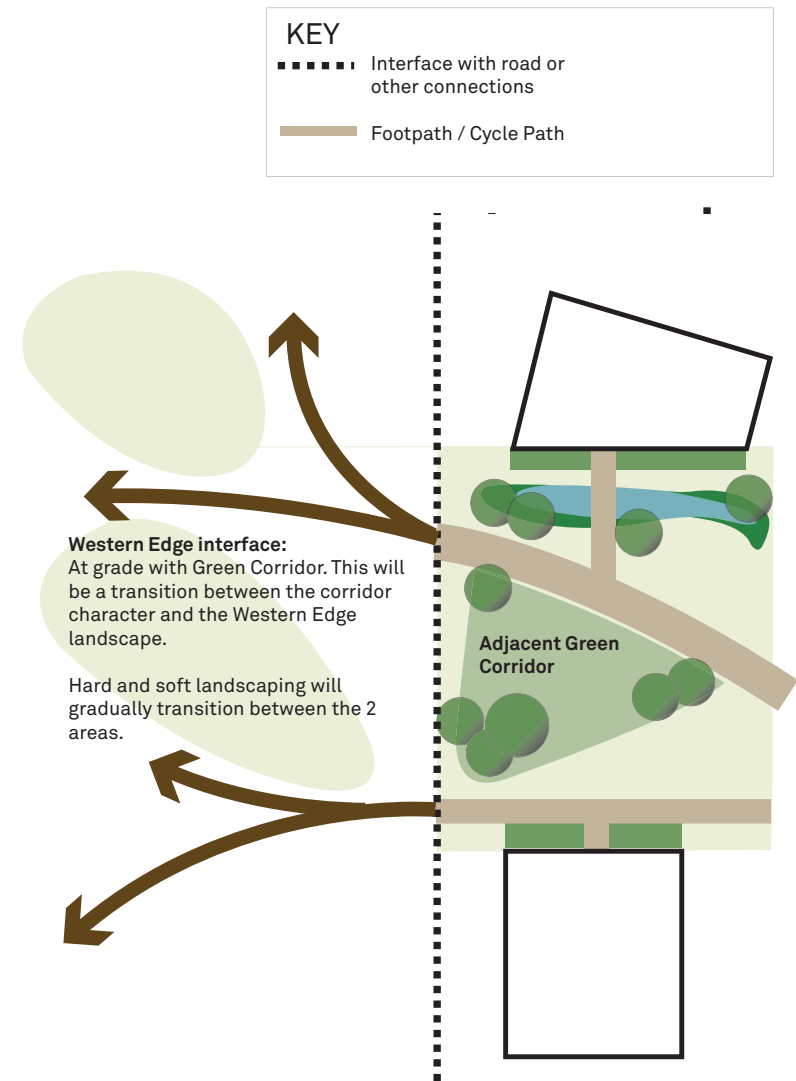
This typical Green Corridor plan should be read in conjunction with the green corridor principles table and the character areas of the Design Codes. The principles illustrated are specific to green corridors 1 to 7 only but are not exhaustive or all-encompassing.

Figure 3.111 Typical Green Corridor Junction with Streets



This typical Green Corridor plan should be read in conjunction with the green corridor principles table and the character areas of the Design Codes. The principles illustrated are specific to green corridors 1 to 7 only but are not exhaustive or all-encompassing.

Figure 3.112 Typical Green Corridor Junction with Ridgeway



This typical Green Corridor plan should be read in conjunction with the green corridor principles table and the character areas of the Design Codes. The principles illustrated are specific to green corridors 1 to 7 only but are not exhaustive or all-encompassing.

Figure 3.113 Typical Green Corridor interface with Western Edge

## The Ridgeway Landscape

North West Cambridge prioritises walking and cycling as a sustainable mode of transport and has therefore developed around a network of clear and legible access routes and corridors.

The Ridgeway is the backbone and defining feature in the establishment of these principles. It forms the primary route pedestrian and cycle through the proposed urban area and a new continuous link between the edge of Cambridge in the east and Girton to the north of Huntingdon Road. It is a shared surface corridor linking neighbourhoods and open spaces with the local centre will reinforce Cambridge's unique pedestrian and cycle network. The corridor is typically a 15m wide route, traversing the 22.5m contour level of the existing hillside and is designed to accommodate a footpath, soft landscape zone and a two-lane cyclepath along its entirety. See Section 3.3 Access and Movement, Pedestrian and Cycling on page 70.

The Ridgeway connects with the Green Corridors (page 92) to provide a continuous network for cycling and recreational pursuits to the Western Edge (page 84) and beyond, making access to open space as easy as possible for all people.

Please also refer to Chapter 4 for the different character areas along the Ridgeway: Storey's Field on page 153, Neighbourhood Village on page 161, Local Centre on page 173, Madingley Rise on page 205 and The Ridgeway on page 215.

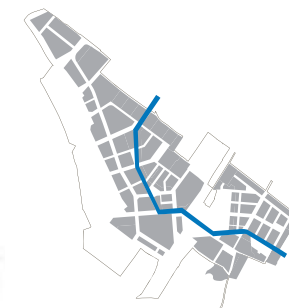


Figure 3.114 The Ridgeway Key Plan



Figure 3.115 Typical Ridgeway section within the urban area.



The Highline NYC



Cycling in Jesus Green, Cambridge



Cycling on the Ridgeway, North West Cambridge

Where the Ridgeway interfaces with the Green Corridors at key junctions. There will be priority given to all users of the relevant Green Corridor. All paths and cycleways will be flushed in all cases, providing a subtle transition between the two landscape typologies. See also Green Corridor Junctions and Interfaces on page 100.

Where the Ridgeway interfaces with a street at key junctions, priority will be given to the Ridgeway users over vehicular traffic, see Raised Table on page 71 in Section 3.3 Access and Movement.

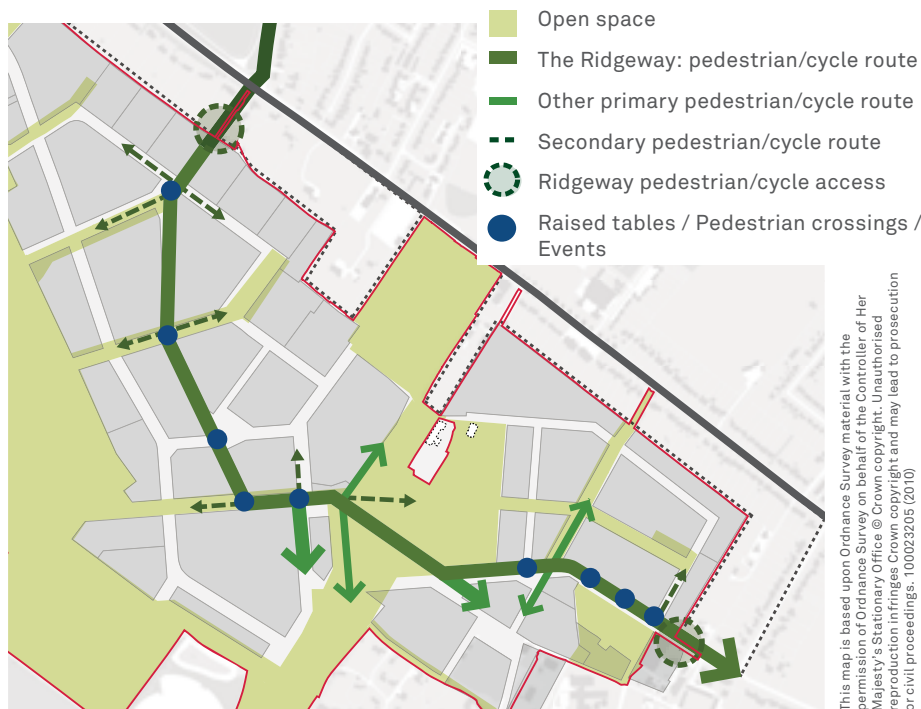


Figure 3.116 Typical Pedestrian and Cycle Connections along Ridgeway

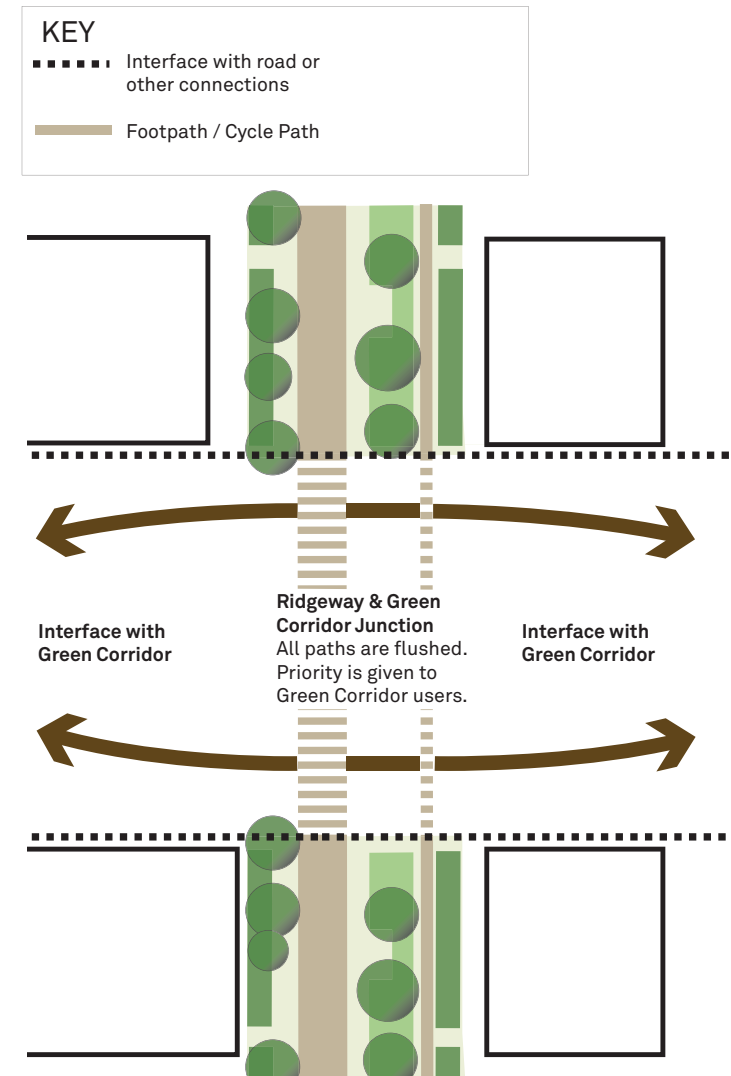


Figure 3.117 Typical Ridgeway & Green Corridor Junction interface



## On Plot Landscape

### Private, Semi Private and Communal Courtyards

The On Plot Landscapes which comprise of private, semi private and communal courtyards serve as a communal or private space for residents or users associated with the relevant residential or non residential buildings as described in Section 3.2 Urban Structure and Block Principles, Block Typology on page 32.

The design of these courtyards will compliment the surrounding built form, and provide communal use for adjacent residential or non residential buildings.

The key principles are as follows:

- 1 The courtyard space will be a social space for residents and users.
  - All courtyard spaces will feature high quality landscape design which works with the character and setting of the surrounding buildings.
- 2 Trees will be orientated so that they provide framed views from adjacent building windows to create a focal or aesthetic feature.

- 3 There will be planted privacy strips along building frontages to maintain security and privacy for the adjacent buildings. These will feature native and ornamental plants which contribute to the character and setting within this space. See Section 3.3 Access and Movement, Thresholds and Interfaces on page 46.
- 4 Cycle parking can be incorporated within the space provided it does not impact on the overall aesthetic quality of the space. They should be located at the perimeter of the space, surrounded by planting to mitigate their visual impact. See Cycle Parking on page 72.

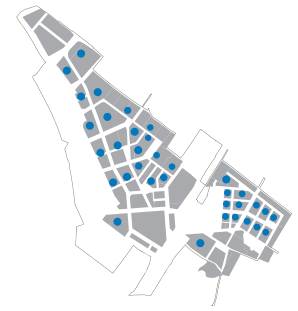
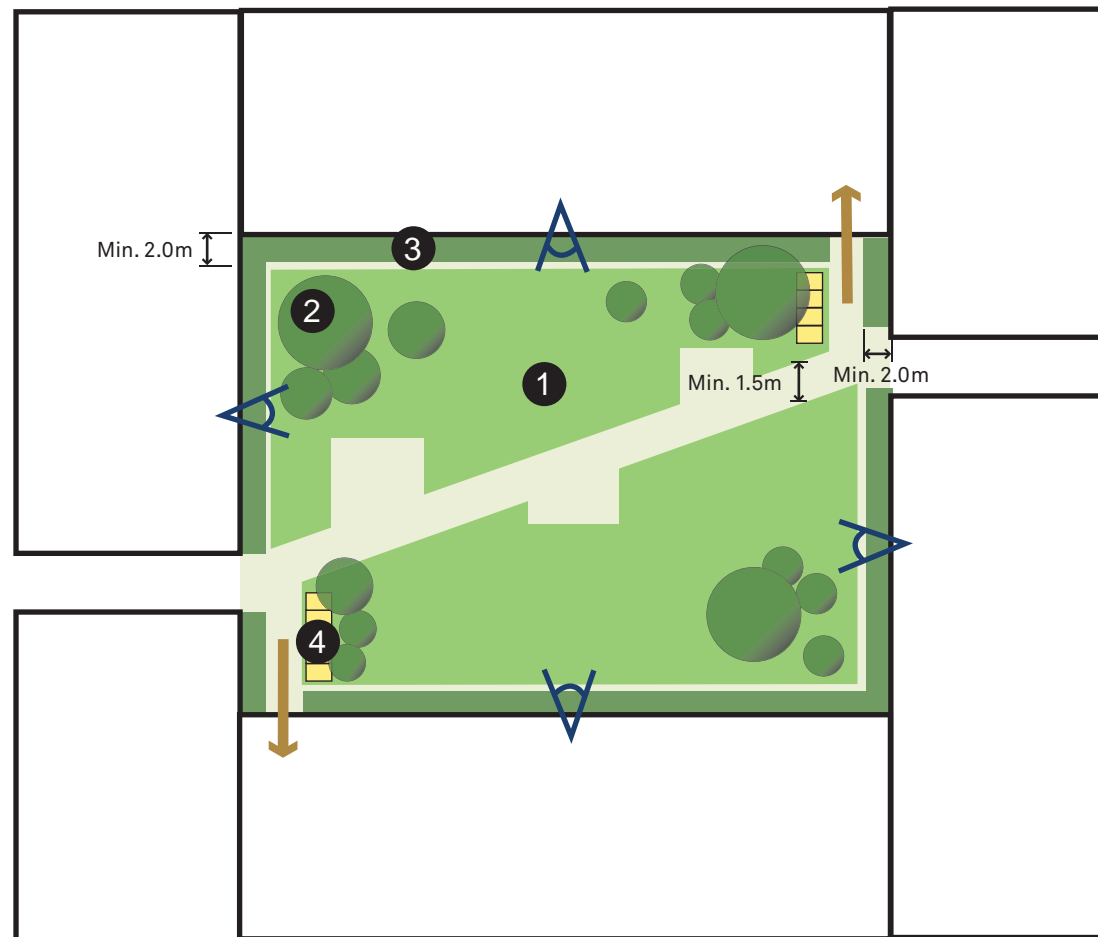
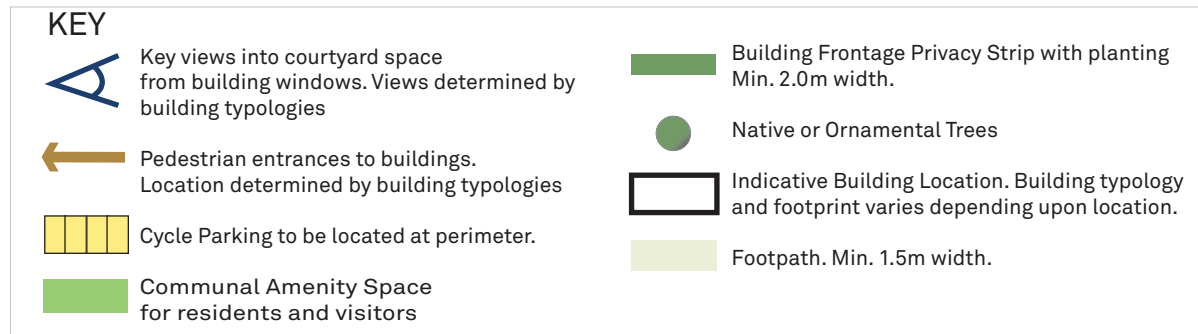


Figure 3.118 On Plot Landscape Key Plan





This “On Plot Landscape” plan should be read in conjunction with the Building Typology principles table and the character areas of the Design Codes. The principles illustrated are specific to the private, semi private and communal courtyards highlighted in the Building Typology section but are not exhaustive or all-encompassing.

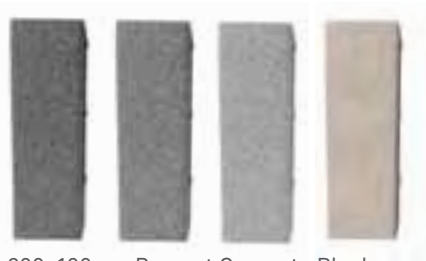
Figure 3.119 Typical On Plot Landscape Illustrative Plan

# Hard Material

The palette of materials used within the public realm and landscape should be responsive to the local vernacular of Cambridge whilst supporting the aesthetic of the Character Areas (Chapter 4, page 147). Materials are to be high quality, robust and sustainably sourced and manufactured to support *BREEAM* targets and requirements with high percentages of recycled content (50-80%). Material colours should be muted and natural tones that complement - rather than detract from - the urban or landscape setting.

## Streetscape Paving Materials

Paving to pedestrian areas and streets will be a mixed palette of precast concrete setts, laid in a random pattern. High recycled content (50-80%)  
Four subtle blends of grey and buff will be used: Charcoal Grey, Silver Grey, Light Grey and light buff. Areas of setts to be edged with Silver Grey Conservation Kerb and Edgings.



300x100mm Precast Concrete Blocks



300x100mm Precast Concrete Blocks

## Parking

Parking bays will be laid with Graphite coloured setts to distinguish these from the carriageway and pedestrian areas.



Parking bays – Graphite Grey re-constituted stone setts



Conservation kerb and edging - Silver Grey

## Primary Pedestrian and Cycle Paths

Within the core of North West Cambridge, the primary pedestrian paths will be laid with a mixed palette of concrete setts (above), and outside of the core resin bound gravel will be used as the surface finish on all primary parkland paths, cycle paths, and shared cycle / pedestrian routes. Colour to be light buff and retained with precast concrete edging.



Resin bound gravel



Resin bound gravel along pedestrian paths

## Secondary Cycle and Pedestrian Paths (Parklands)

Self binding gravel in a warm buff for secondary paths in park land spaces of the Western Edge. Retained with timber or precast concrete edging.



Self Binding gravel



Self Binding gravel along parkland footpath



## Parkland Parking Areas

A hexpot grass protection grid to reinforce grassed access routes, car-parking areas, overflow parking areas etc. The grid prevents soil compaction under the weight of vehicles, creates a water permeable surface and provides 94% surface for grass growth.



Hexpot grass protection grid



Hexpot gridded parking area.

## Raised table crossings

Rolled aggregate within asphalt material. Buff colour. Located at main street intersections and key residential street junctions. 1:20 slope to table. Timber markers to denote crossing point. (Second image for illustrative purposes only to show principles of raised table.)



Rolled aggregate into asphalt.



Raised table crossing.



Timber markers.

## Fencing

Timber posts and powder coated steel railings will be used where appropriate to line boundaries of different land uses.



Post and wire fence.



Powder coated railings

## Street and Parkland Furniture

Furniture should be well designed, robust, provide character and be appropriate to the aesthetic of the individual character area. Where possible furniture that include materials that are recycled or are sustainably sourced are desirable. Furniture should meet *DDA* requirements.



Rectilinear benches creating form



Bespoke benches create identity.



Log seating in parklands.



## Softscape Species and Planting Structure

The framework and character of tree planting within North West Cambridge is largely dependant on the particular Character Area or landscape typology. Variety is encouraged across the development in accordance with the different character areas to establish a sense of place and identity. Existing mature trees and woodland cover within the site are to be maintained as a priority. Native tree and planting species are preferred across the development as a whole, with particular emphasis on natives within the areas of Primary & Secondary Open Land.

Non-natives are acceptable within the central areas of the built development such as the courtyards, streets and squares and where an alternative native specie is not suitable, however species will need to be agreed with the Project Ecologist. The structure of tree planting should provide interest throughout the seasons, especially during the winter months, while also maximising the opportunity to meet biodiversity targets (*Biodiversity: Condition 34*).

### Planting Structure Principles:

Within the Western Edge, tree planting is positioned to reinforce or screen views in a naturalistic manner. To assist this, new tree planting will be located in wooded stands or linear blocks respecting the local character of the *Bedfordshire & Cambridgeshire Claylands Landscape Character Area*, the existing and



Existing landscape character - mature feature trees, hedgerows with hedgerow trees and groups, lines or blocks of woodland.



Parkland planting character

historic field patterns associated with the Washpit Brook valley and to improve the network of existing ecological corridors. These will be mixes of native tree species. The Girton Gap supports a more formalised



Existing hedgerow following recent management regime.

parkland structure of amenity land uses and therefore tree planting is to be positioned to reinforce this typology with lines of trees along peripheral edges and streets, tree clusters and stand alone specimens to add visual interest to



Parkland character in autumn



English Oak *Quercus robur (pedunculata)*



Tree-lined avenue



Streetscape tree planting character



Western Edge planting character



Parkland SuDS character

the parkland vernacular. Shrub and groundcover planting should follow the same general native species principle, tailored to suit the aesthetic of the individual character area.

SuDS swales should be planted with vegetation that provides water treatment and can withstand both wet and dry conditions. Wetland species should be selected and located in the wetland areas in the western

edge following constructed wetland guidelines provided in the *Cambridge SuDS Design Guide*. Trees can be combined with raingarden and bioretention features, but should be selected to thrive in either wet or dry conditions and be able to have limited root spread.



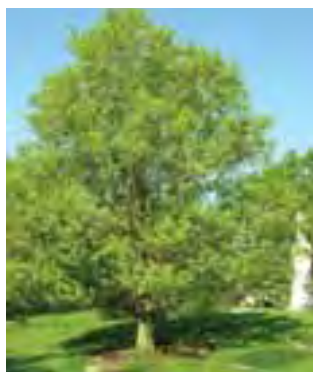
## Indicative Tree Species

Listed in Table 3.18 and Table 3.19 is a palette of tree species that is recommended for use within the development. These have been selected for various reasons which include:

- Ecological value
- Habitat potential and variety
- Visual appeal
- Seasonal appeal
- Contribution to Species Rich Hedgerows and wildlife corridors
- Diversity of planting layers
- Of local provenience.

This is an indicative list for guidance. Other species may be considered but are subject to approval of the Project Ecologist.

Tree species used within SuDS / rain gardens should be salt tolerant to accommodate any surface water runoff which may vary in salinity.



Native tree - Field Maple  
*Acer campestre*



Native tree - Alder  
*Alnus glutinosa*

Native Tree Species	Common Name
<i>Acer campestre</i>	Field Maple
<i>Alnus glutinosa</i>	Alder
<i>Betula pubescens</i>	Downy Birch
<i>Carpinus betulus</i>	Hornbeam
<i>Corylus avellana</i>	Hazel
<i>Cornus sanguinea</i>	Common Dogwood
<i>Crataegus monogyna</i>	Hawthorn
<i>Crataegus laevigata</i> 'Paul's Scarlet'	Hawthorn
<i>Euonymus europaeus</i>	Spindle
<i>Ilex Aquifolium</i>	Holly
<i>Malus</i> sp.	Flowering Crab Apple & Apple
<i>Populus nigra betulifolia</i>	Black poplar
<i>Prunus avium</i>	Cherry
<i>Prunus spinosa</i>	Blackthorn
<i>Prunus</i> Sp.	Cherry, plum, Wild plum
<i>Pyrus</i> Sp.	Pear
<i>Quercus robur</i>	English Oak
<i>Salix alba</i>	White Willow
<i>Salix caprea</i>	Goat Willow
<i>Salix cinerea</i>	Grey Willow
<i>Salix fragilis</i>	Crack Willow
<i>Tilia cordata</i>	Common Lime
<i>Malus</i>	Apple Flower of Kent
<i>Malus</i>	Apple Lady Hollendale
<i>Malus</i>	Apple St. Everard

Table 3.18 Recommended Native Tree Species

Non-native Tree Species	Common Name
<i>Amelanchier lamarckii</i>	Amelanchier
<i>Castanea sativa</i>	Sweet Chestnut
<i>Juglans regia</i>	Common Walnut
<i>Morus nigra</i>	Black Mulberry
<i>Pinus nigra</i>	Austrian Pine
<i>Prunus x subhirtella</i>	Cherry
<i>Tilia x europaea</i>	Common Lime
<i>Quercus ilex</i>	Holm Oak
<i>Quercus palustris</i>	Pin Oak
<i>Quercus cerris</i>	Turkey Oak
<i>Quercus palustris</i>	Pin Oak
<i>Liquidambar styraciflua</i>	Sweet gum
<i>Liriodendron tulipifera</i>	Tulip tree

Table 3.19 Recommended Non-Native Tree Species



Native hedgerow - Hawthorn *Crataegus monogyna*



Native tree - Hawthorn *Crataegus monogyna*



Native hedgerow - Blackthorn *Prunus spinosa*



Native hedgerow - Hazel *Corylus avellana*



Native tree - Crack Willow *Salix fragilis*



Native tree - Spindle  
*Euonymus europaeus*



Native tree - Holly *Ilex aquifolium*



Non-Native tree - *Amelanchier lamarckii*



Non-Native tree - *Castanea sativa*



Non-Native tree - *Juglans regia*



Non-Native tree - *Pinus nigra*



Non-Native tree - *Prunus x subhirtella*



Non-Native tree - *Tilia cordata*



Non-Native tree - *Quercus ilex*



## Biodiversity

The *North West Cambridge Biodiversity Strategy*: Condition 34 provides a strategy for the protection and enhancement of the habitats and species present at the development site, and the implementation of the required mitigation measures.

The development has been designed to retain and protect the most valuable ecological features, by incorporating them into the indicative layout and parameter plans, including areas of woodland, species-rich hedgerows and orchards. Ecological enhancement is a central theme in the design of areas of open land and measures should be taken wherever possible to improve the biodiversity value of the local area in line with *BAP* targets, produced by the Cambridgeshire and Peterborough Biodiversity Partnership.

The design of the development and landscape must be cognizance of the areas of ecological value existing on-site and the enhancements indicated within the *Biodiversity Strategy*.

Over the following pages Table 3.20 indicates the target wildlife species which the development will support and the associated design parameters which are required for the location and construction of their new habitat or nesting features.

See Chapter 7, Appendix A, A.3 Existing Landscape & Ecology on page 260, and Appendix B, Figure 7.31 Open Land and Landscape Areas Parameter Plan: Zone B on page 281. Also see *Description of Development*.



Species Rich Grassland



Dry Meadow Species



Wet Meadow Species



Woodland Understory



Species Rich Hedgerow



Plum orchard in blossom

Illustrated above are a number of vegetation categories which are indicative in forming part of the Biodiversity Strategy and ecological enhancements for the site. These will need to be refined in consultation with local authority ecology officers and include but are not limited to:

- Native wet woodland
- Native dry woodland
- Wet meadows
- Dry meadows
- Species rich grassland
- Woodland edge planting
- Woodland understory
- Species rich hedgerows
- Traditional Orchards

Target Wildlife Species and Habitats								
Bird / Animal Species	Habitat/ Nesting Feature Image	Habitat / Nesting Feature	Habitat Location	Installation height	Proximity to vegetation	Grouping	Other comments	Distribution
House Sparrow		House sparrow "terrace" (multiple chambers in one box)	On side of new buildings	>2.5m above ground level	Install within close proximity to vegetation	Desirable to group terraces	Should not be located above doors or windows to avoid droppings building up on ledges  All boxes should be constructed from high quality materials with preference for Woodcrete type boxes.	At least 25% of all new buildings within each phase to have one of these features
Swifts		Swift Box	On side of new buildings or built-in	>5.0m above ground level	Away from trees, shrubs and climbing plants	Essential: Minimum 6 boxes in one group.	Should not be located above doors or windows to avoid droppings building up on ledges  All boxes should be constructed from high quality materials with preference for Woodcrete type boxes.	
Starlings		Starling Box	On side of new buildings	>2.5m above ground level	Not Applicable	Not Applicable	Starlings can be noisy and messy; locate accordingly.  Should not be located above doors or windows to avoid droppings building up on ledges  All boxes should be constructed from high quality materials with preference for Woodcrete type boxes.	
Kingfisher		Kingfisher nest sites constructed from Woodcrete with a tunnel, outer nesting chamber and inner nesting chamber.	On top of the bank of the Washpit Brook and buried to allow grass turf to be relaid over the top. Slopes to bank must be as steep as possible to encourage use by Kingfishers.	>1.5m above water level at Washpit Brook, with nest holes 0.5m below top of bank.	Install within close proximity to vegetation, and Washpit Brook.	Installed in pairs, located at least 70 cm apart.	Should be located in areas of low disturbance / intervention from users. Blackthorn and hawthorn shrubs will be planted around these to limit any disturbance.	Phase 1 = 2 nesting sites.  To be located at the Washpit Brook.  A further 2 nesting sites to be provided in s subsequent phase and prior to the occupation of the 2200th residential unit.
Otters		Otter Holts	On top of the bank of the Washpit Brook and buried to allow turves to be relaid over the top. A ventilation tube will be installed.	On or in ground	Install within close proximity to vegetation, and Washpit Brook.	Not Applicable	Should be located in areas of low disturbance / intervention from users. Blackthorn and hawthorn shrubs will be planted around these to limit any disturbance.	One holt to be provided during phase 2. A second holt to be provided prior to completion of development.  To be located at the Washpit Brook

Table 3.20 Biodiversity Summary Table

Target Wildlife Species and Habitats								
Bird / Animal Species	Habitat/ Nesting Feature Image	Habitat / Nesting Feature	Habitat Location	Installation height	Proximity to vegetation	Grouping	Other comments	Distribution
Bats		<p>Bat loft with access points provided (such as through raised ridge tiles) and roosting features within the loft, such as:</p> <ol style="list-style-type: none"> <li>1. Bat Bricks (access)</li> <li>2. Internal False Cavities between gable wall and secondary wall</li> <li>3. Internal timber cladding mounted on 20-30mm counter battens with bat access at the bottom.</li> <li>4. Internal Timber ridge board.</li> </ol>	<p>Within the roof spaces of new buildings ideally non-residential buildings such as the community centre and sports.</p> <p>Minimise lighting spillage onto the roofs within which the lofts are located.</p>	<p>Roof void must be &gt;1.5m height, with an apex length of &gt;4.0m.</p> <p>Access points must be unobstructed by construction timbers.</p> <p>Must be &gt;2.0m above ground level</p>	Install within close proximity to vegetation, particularly hedgerows and woodland.	Not Applicable	<p>Lofts must be boarded out. Fibres from modern roofing membranes have been found to entangle bats.</p> <p>Access points should not be located above doors or windows to avoid droppings building up on ledges.</p> <p>Any chemicals used to treat timbers should be certified as 'bat safe' products.</p>	<p>6 no. or more "bat lofts" to be provided within roof spaces of new buildings. Approximately 1 no. per character area, except the Ridgeway.</p> <p>2 lofts to be provided in phase 1, a further 2 prior to occupation of the 2200th residential unit, and a further 2 prior to occupation of the 3000th residential unit</p> <p>Do not locate at privately owned residences. Community facilities preferred.</p> <p>In circumstances where "bat lofts" may not be possible - refer to "Bat Tubes" and "External Bat Boxes" for alternatives.</p>
Bats		Bat Tubes	<p>Built into the wall cavity of new buildings ideally community centre and sports.</p> <p>Minimise lighting spillage onto tubes.</p>	>4.0m above ground level	Install within close proximity to vegetation, particularly hedgerows and woodland.	Not Applicable	Should not be located above doors or windows to avoid droppings building up on ledges.	<p>Alternative option where a bat loft is not possible.</p> <p>Provide 50 bat tubes amongst the side of new buildings as a substitute for 1 bat loft. Do not locate at privately owned residences.</p>
Bats		External Bat Box (Buildings)	On side of new buildings.	>4.0m above ground level	Install within close proximity to vegetation, particularly hedgerows and woodland.	Not Applicable	Should not be located above doors or windows to avoid droppings building up on ledges.	Alternative (but less favoured) option to bat tubes.
Bats		External Bat Box (Trees)	On retained trees in woodlands and hedgerows	>5.0m above ground level	Within woodland or hedgerows	Not Applicable	Box types as detailed in the Biodiversity Strategy, to be installed on a variety of aspects.	50 boxes to be installed in phase 1, as detailed in the Biodiversity Strategy.

Table 3.20 Biodiversity Summary Table (cont')








Target Wildlife Species and Habitats								
Bird / Animal Species	Habitat/ Nesting Feature Image	Habitat / Nesting Feature	Habitat Location	Installation height	Proximity to vegetation	Grouping	Other comments	Distribution
Great Crested Newts		GCN Hibernaculum	Within the Green Corridor and other areas of open land near the P&R pond	On / in the ground	Within vegetated areas.	Not Applicable	To be constructed using felled vegetation from site clearance operations and under the direction of the Project Ecologist.	-MD to confirm
Great Crested Newts		GCN Amphibian tunnel crossing with associated guide fencing	Between the P&R Pond and the Bird Sanctuary ponds at Storeys Way Conservation Area.	Below ground	Not Applicable. Functions only as a crossing.	Not Applicable	To be designed and constructed as part of the relevant section of highway and in conjunction with the Project Ecologist.	Ph 1 = 1no. tunnel to be located below the Primary Street between the newt mitigation area and the Ridge and Furrow Field ditch.
Amphibians		Amphibian 'at grade' crossings  'Wildlife kerbs'	To be provided at 2 locations: 1. Street between Travellers Rest Pit and the Ridge and Furrow woodland. 2. Street immediately to the north of the World Conservation Monitoring Centre.	Ground Level	Not Applicable	Not Applicable	Lengths of street in each location to have: 1. Dropped kerbs to facilitate amphibian crossing. 2. Minimal drainage structures. 3. Wildlife kerbs to guide amphibians around drainage structures.	2 at grade crossings to be provided within relevant phases.
Water Voles		New habitat for water voles	At the new ponds within the Western Edge	Not Applicable	Not Applicable	Not Applicable	Banks to be seeded with an appropriate grass mix. Wetland plants to be plug planted immediately below normal water level.	As shown on URS drawings for the Washpit Brook modification works.
Badgers		Artificial Badger Sett	Within Pheasant Plantation	At ground level and built as a raised bund	Within woodland	Not Applicable	Blackthorn and hawthorn shrubs to be planted around the sett to limit disturbance. Details of design are provided in the Biodiversity Strategy.	Ph 1 = 1 no. artificial sett  To be located within the Pheasant Plantation woodland.

Table 3.20 Biodiversity Summary Table (cont')

## Youth Facilities and Children’s Play

The youth and play provision across North West Cambridge is focused on ensuring that young people living across the site have access to a range of play opportunities for all ages. The distribution of play provision across the site is guided by the following principles:

- Play for very young children should be focused in the residential parts of the site, to enable easy access for parents and their children.
- Youth and play provision to meet the planning space requirements should be located in areas of primary and secondary open land that will be retained within the University’s ownership and managed and maintained by the University in the long term. Though market housing developers may choose to provide local play areas “on plot”, this will be in addition to the space requirements set out in the strategy.

Please refer to Figure 3.122 on page 117 for indicative locations of play areas, and individual character areas within Chapter 4 Character Areas for further details. Also refer to *Youth Facilities and Children’s Play Strategy: Condition 9*.

Play Strategy Principles		
Doorstop Playable Space	0-5yrs	> 100sqm
Local Playable Space	0-11yrs	> 300sqm
Neighbourhood Playable Space	All ages	> 500sqm
Youth Space	12yrs +	> 200sqm

Table 3.21 Play Spaces Typology and Requirement

**Doorstep playable space:**  
A landscaped space including engaging play features for young children under 5, and places for carers to sit and talk. Reasonably flat grassed areas in the main, pathways or hard standing may also be beneficial. Population served: >24 people

**Local playable space:**  
A landscaped space with landscaping and equipment so that children aged up to 11 can play and be physically active and they and their carers can sit and talk.

**Neighbourhood playable space:**  
A varied natural space with secluded and open areas, landscaping and equipment so that children aged up to 11 years can play and be physically active, and they and their carers can sit and talk, with some youth facilities for young people 11+yrs.

**Youth space:**  
A social space for young people aged 12 + to meet, hang out and take part in informal sport or physical recreational activities.

Figure 3.121 Example of Play Spaces



Figure 3.120 Play Spaces Key Plan



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Figure 3.122 Indicative Youth Facilities and Children's Play



Edmonton playspace, Alberta



Kwanis Park, Pittsboro, NC



Melis Stokepark, The Hague



Hurlingham Club, Putney



Belleville Playground, Paris



Parc Diagonal Mar, Barcelona



Skate & BMX bowl, Queenstown



Werrington Green, Outdoor Gym



## 3.5 INFRASTRUCTURE

### Introduction

This section of the Design Code provides a summary of the infrastructure and new utility connections to the site and their subsequent distribution to serve the development. Cross-references are also provided to other Strategies that will be prepared to satisfy various *Planning Conditions*.

The existing site will require new utility connections to be provided to support the development. Following discussions with the relevant statutory undertakers, the basic routes for the new connections have been identified.

See Chapter 7, Appendix A, A.8 Existing Utilities on page 266.

The following services will be provided in corridors along the primary infrastructure routes and will be available to be brought to each property:

- Telecoms (phone line and broadband)
- Potable Water
- District Heating
- LV Electricity

A gas fired energy centre will be provided in the initial phase of the development at the Local Centre which has been designed with sufficient floor space to cater for the plant and equipment that will be necessary to satisfy the thermal demand for the total development.

A private district heating network (page 118) will transfer the hot water generated at the energy centre to each of the development plots.

Gas will be provided to certain uses within the site.

Surface and foul water will be collected from each property and discharged, respectively, to the Washpit Brook or off-site.

### District Heating Scheme

In order to reduce the development's total carbon footprint, it is proposed to install an energy centre to supply the development's heat requirements. A district heating (DH) network is required to deliver the heat from the Energy Centre to the individual users.

It is proposed to build a single energy centre during Phase 1 to serve the site through to Phase 19. Although the Energy Centre building will be initiated on "day one", the Combined Heat and Power (CHP) and boiler plant will be phased alongside the construction buildout.

A base case site wide energy scenario has been considered, and the following building types are assumed to be connected to the DH scheme: Nursery / Student Housing / Primary School / Local Centre / Senior Care / Retail / Hotel / Market Detached / Market Terraces / Market Flats / Key Worker

A viable notional district heating network pipework route (Figure 3.123 on page 119) has been identified. The network will primarily be formed from buried pipework with flow and return pipes located in a common trench.

Operators of district heating networks are not statutory undertakers. District heating networks cannot, therefore, be located within adopted highway corridors without special Licences from the local highway authority.

The district heating network is likely to follow the alignment of the Ridgeway and streets that will be retained within the University's control.

The primary streets are to be offered for adoption (except Busgate Street). Outside the extent of the cross-section to be offered for adoption, provision is included for the district heating network.

See Section 3.3 Access and Movement, Street Hierarchy and Typology on page 51, and Chapter 7, Appendix B, Figure 7.30 NWC/OPA/PAR/02/A - Access Parameter Plan: Zone B on page 280, and *Description of Development*.



Figure 3.123 District Heating Scheme

# Utilities and Services

## Gas

A new gas supply to the development will be provided from the existing National Grid Gas network in Madingley Road. A new medium pressure gas main will run along the Primary Street from Madingley Road to the pressure reducing station. A low pressure network will be provided across the site to serve the Energy Centre, school, hotel, senior care, supermarket, restaurants, college refectories and academic and commercial uses.

Operators of gas networks are statutory undertakers. The gas network can be located in all the street types within the development. Its position within the corridor will be located in accordance with the National Joint Utility Group requirements (NJUG).

## Granta

This existing private University network currently crosses the development site. It will be relocated to accommodate the development. This network cannot be located within adopted highway corridors without special Licences from the local highway authority.

The Granta network is likely to follow the alignment of the Ridgeway and streets that will be retained within the University’s control.

The primary streets are to be offered for adoption (except Busgate Street). Outside the extent of the cross-section to be offered for adoption, the Granta network could share the provision for the district heating network.

## Electricity

A new electricity supply to the development will be provided from the existing UKPN network in Madingley Road. A new HV network will run from Madingley Road to a series of sub-stations across the site. A LV network will be provided from each sub-station to serve all uses within approximately 200m of the sub-station.

Operators of electricity networks are statutory undertakers. The electricity network can be located in all the street types within the development. Its position within the corridor will be located in accordance with the NJUG requirements.

For all reference to street types and highway corridors please refer to Section 3.3 Access and Movement, Street Hierarchy and Typology on page 51, and Chapter 7, Appendix B, Figure 7.30 NWC/OPA/PAR/02/A - Access Parameter Plan: Zone B on page 280, and *Description of Development*. See also Integrating Utilities within Built Environment on page 124 and Utility Related Structures on page 125.



## Potable Water

A new potable water supply to the development will be provided from the existing Cambridge Water main in Madingley Road. A new potable water network will run from Madingley Road to a booster station at the northern part of the site. From the booster station, a new potable water network will extend across the site to serve all uses.

A combination of rainwater harvesting, grey water recycling and the specification of low flow appliances will enable the potable water demand to be reduced to 80 litres/head/day from an average of 150 litres/head/day in order to meet Level 5 of the Code for Sustainable Homes.

Operators of potable water networks are statutory undertakers. The potable water network can be located in all the street types within the development. Its position within the corridor will be located in accordance with the NJUG requirements.

Refer to *Water Supply Strategy: Condition 29*

## Telecommunications

A new telecommunications supply to the development will be provided from the existing networks in either Huntingdon Road or Madingley Road. A new network will extend across the site to serve all uses.

Operators of telecommunications networks are statutory undertakers. The telecommunications network can be located in all the street types within the development. Its position within the corridor will be located in accordance with the NJUG requirements.

Refer to *Super-fast Broadband Strategy: Condition 21*.

## Foul Drainage

Anglian Water has been consulted to determine the available capacity within the existing sewer network and have advised that the Cambridge Sewage Treatment Works has sufficient capacity to serve the development.

Foul water will be drained by gravity to the lower levels within the development. Several pumping stations are proposed and rising mains will be provided from these locations to convey foul water from the site to the existing Anglian Water sewer located on Madingley Road.

Operators of foul water sewers networks are statutory undertakers. The foul water sewers can be located in all the street types within the development. Its position within the corridor will be located in accordance with the NJUG requirements. Inset covers and frames would be provided within the urban realm (with due consideration of the limitations of manual handling requirements).

Refer to *Foul Water Drainage Strategy: Condition 30*.

## Integration with public realm and plots / blocks

The main services (high voltage and low voltage electricity, potable and non-potable water, telecommunications and gas) will follow the primary and secondary street corridors within the development. They will be located within the street cross-section in accordance with the requirements of the National Joint Utilities Group (NJUG). Private services such as the district heating network, will be located outside sections of the highway corridor that are to be adopted mainly under the defensible space/ privacy strip zone. At the plot boundaries the services will be terminated in service boxes. The plot developers will be responsible for taking the service connections into the plot and distributing the services as required between the buildings on each lot. A detailed 3D model has been constructed to ensure that there are no clashes of services within the service corridors. Where required services will be routed away from trees and SuDS and any other features in the urban realm. The layout of the services will follow industry accepted standards such as *Sewers for Adoption* and the NJUG requirements.

For reference to street types and highway corridors please refer to Section 3.3 Access and Movement, Street Hierarchy and Typology on page 51, and Chapter 7, Appendix B, Figure 7.30 NWC/OPA/PAR/02/A - Access Parameter Plan: Zone B on page 280, and *Description of Development*.

Also see SuDS and Surface Water Drainage on page 126.

A typical cross section through the primary route corridor showing the NJUG requirements (Figure 3.124) is shown on the next page.

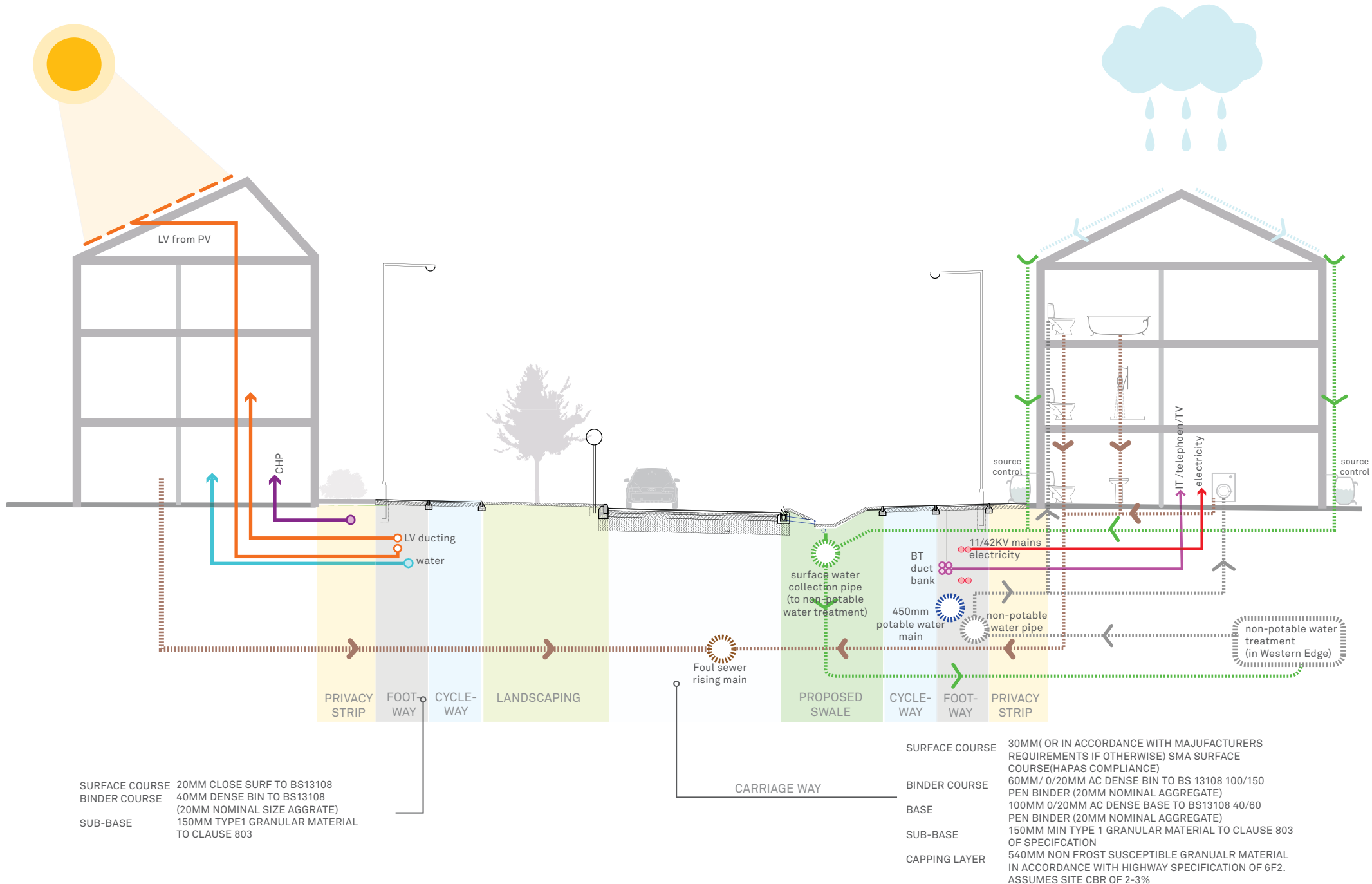



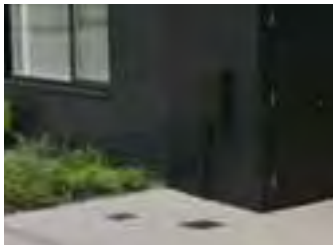







Figure 3.124 Typical cross section through the primary route corridor



## Integrating Utilities within Built Environment

Utilities are necessary parts in operation of public and domestic environment. Special attention is required for selection and location utilities such as meter boxes etc as poor planning of utilities could easily hinder the overall quality of the urban environment. Good design of the utilities are encouraged as important design features rather than simply ‘tacked on’ elements.

Items		Good practice	Bad practice	
Meter Boxes (public)	<ul style="list-style-type: none"> <li>Careful selection of finishes, colours and sizes.</li> <li>The location of the boxes are especially important as it could be an obstacle for pedestrian flow/ movement.</li> </ul>			
		Sleek design tucked away on the side	Free-standing meter box within the pavement zone	Large meter box dominating the pavement
Meter Boxes (domestic)	<ul style="list-style-type: none"> <li>Careful selection of finishes, colours and sizes.</li> </ul>			
		Domestic meter box carefully camouflaged in the exterior finish	Meter box protruding onto the pavement - a potential safety hazard.	Two meter boxes stands out in the entrance
Flues/ Pipes/ Vents	<ul style="list-style-type: none"> <li>Careful selection of finishes, colours and sizes.</li> <li>The location of these elements are especially important as it could be an obstacle for pedestrian flow/ movement.</li> </ul>			
		Location and colour of pipes design in discrete manner to ensure the harmony of the overall composition	Flues complementing entrance design	Pipes creating clutter on potential frontage

## Utility Related Structures

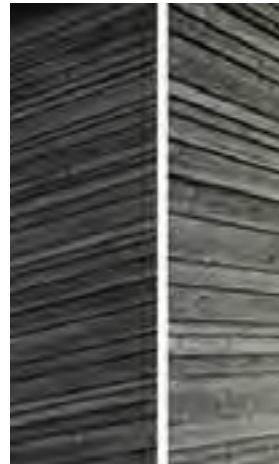
Design treatment of the utility structures require careful consideration for the design context they sit within and sustainable ambitions of the wider development. Innovative means of screening and selection of materials are sought for structures such as composting facility, sub-stations and foul water pumping stations.

### Screening

Screening is necessary for safety and aesthetic roles for utility related structures. Significantly authentic and natural materials enhance the environment with suitable ways of screening.

### Materials

Aspiration will be to reuse and recycle existing site material wherever possible. Search for opportunity for material to be grown on site and utilized effectively such as fast growing willow.



Charred timber





Willow Walls



Green Oak



Willow Walls

Items		Good practice	Bad practice
Sub-stations	Careful selections of quality material, while completing the utilities structures to a piece of design sensitive architecture.		

## SuDS and Surface Water Drainage

An integrated sustainable drainage systems (SuDS) scheme has been included in the masterplan which needs to be detailed and integrated with other urban design initiatives through detailed design. Details of this can be found in the *Surface Water Strategy: Condition 26*. The SuDS scheme aims to:

- Capture and treat runoff through a treatment train series of SuDS features to minimise pollution.
- To harvest rainwater and surface water runoff for reuse in homes.

Surface water runoff will be discharged to the Washpit Brook, or harvested for non-potable reuse in homes. Attenuation features and flow control structures will be provided to ensure that the developed runoff rates and volumes do not exceed the existing greenfield runoff rates and thereby ensure that flood risk is not increased downstream of the site. In designing SuDS, the use of vegetation and wet areas is also crucial to the *Biodiversity Strategy: Condition 34*.

It is proposed that at least a two stage SuDS 'treatment train' will be implemented for all sources of runoff within the development to both attenuate peak flow rates into the downstream system and also provide water improvements to water quality in accordance with *Ciria document C697 "The SuDS Manual"*.

SuDS features should be integrated across all areas of development following the *Surface Water Strategy: Condition 26*. The SuDS scheme is designed to capture, slow and treat runoff through a series of features, from the 'source' where rainfall falls through to discharge to the Washpit Brook. The scale and the type of SuDS proposed are designed to be in keeping with the urban character and functionality of the various areas of the development. The key areas for inclusion of SuDS are:

- Properties: 'Source control' is important to the SuDS strategy, and should be used to avoid runoff creation, provide initial treatment and slow runoff entry to the wider system.
- Courtyards: Raingardens and permeable paving can be included in courtyards to provide initial treatment for surrounding roof water and paved area runoff.
- SuDS Streets: Certain strategic streets have been identified to include SuDS features that will provide some attenuation and treatment, before transferring runoff to either the Green Corridors or the Western Edge. Runoff from other streets will be directly transferred to the Green Corridors or the Western Edge for treatment.
- Green Corridors: For Green Corridors that receive drainage runoff, a swale should be used to convey and slow flows down the Green Corridors to join the systems in the Western Edge.

- Western Edge: Inclusion of detention ponds with wetland edges to provide large-scale attenuation and treatment. Storage systems in the Western Edge should also be included to allow treated runoff to be harvested for non-potable water supply on-site.

Figure 3.125 demonstrates the SuDS hierarchy. All runoff should pass through at least 2 SuDS features above to ensure adequate water treatment. These features may be located in the areas outlined previously.

The SuDS types that have been outlined in the Western Edge and Green Corridors need to be integrated into landscape design. In the other areas, a selection of SuDS features are applicable and can be designed to match urban character and complement surroundings.

As a minimum it is proposed that surface water drains, sewers and SuDS devices located below ground will be designed to withhold the runoff for rainfall events with a return period of 1 in 30 years without overflow or flooding. Runoff generated above this return period up to a 1 in 100 year event, with an additional 30% allowance on rainfall intensities for climate change is to be stored on site for gradual release back into the drainage system. This can be in the form of storage above ground in areas such as car parks, but to reduce the risk of flooding to other areas, no overland flows

from the development site for rainfall events less than the 1 in 100 year plus climate change will be permitted. Finished levels within the development will be engineered to ensure any overland flows from highways, or localised above-ground storage, are directed safely away from dwellings and other at risk infrastructure towards on plot SuDS features and ultimately the Western Edge. See *Flood Reduction Scheme: Condition 28*.

All SuDS should be designed using the Cambridgeshire SuDS Handbook (2012, when available) or the Cambridge SuDS Design Guide (2010). Table 3.22 on page 128 outlines the design objectives for each area.

**1 Source Control**  
Runoff managed as close to the source as possible, eg using green roofs, raingardens and permeable surfaces to capture and treat roof water

**2 Streets and Green Corridors**  
Water from streets and the wider site are captured in swales and raingardens to provide initial treatment and convey water to the western edge.

**3 Western Edge**  
Wetlands and ponds in the western edge provide larger attenuation and treatment areas and control outflow to washpit brook. Treated runoff is harvested at this point for reuse.

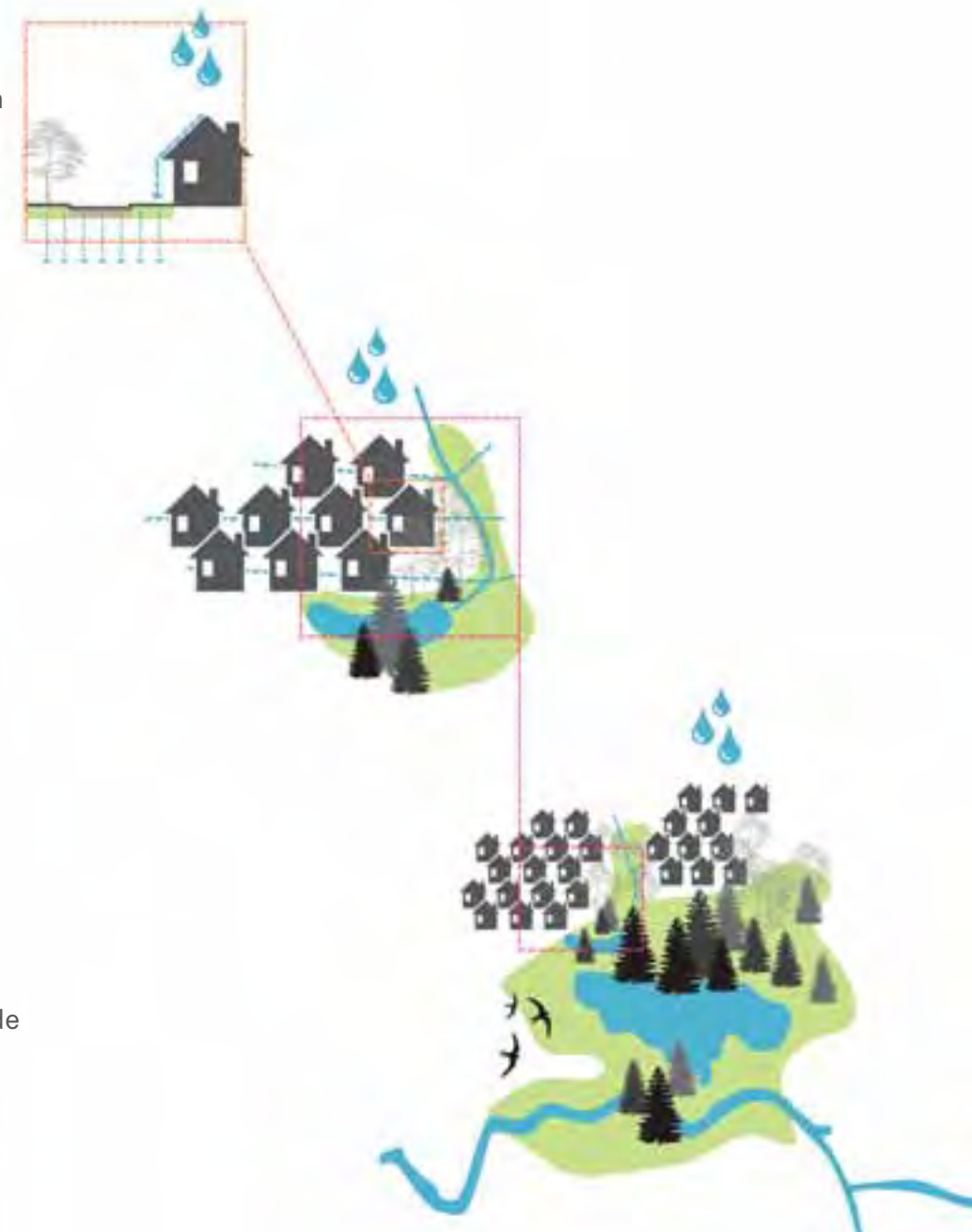
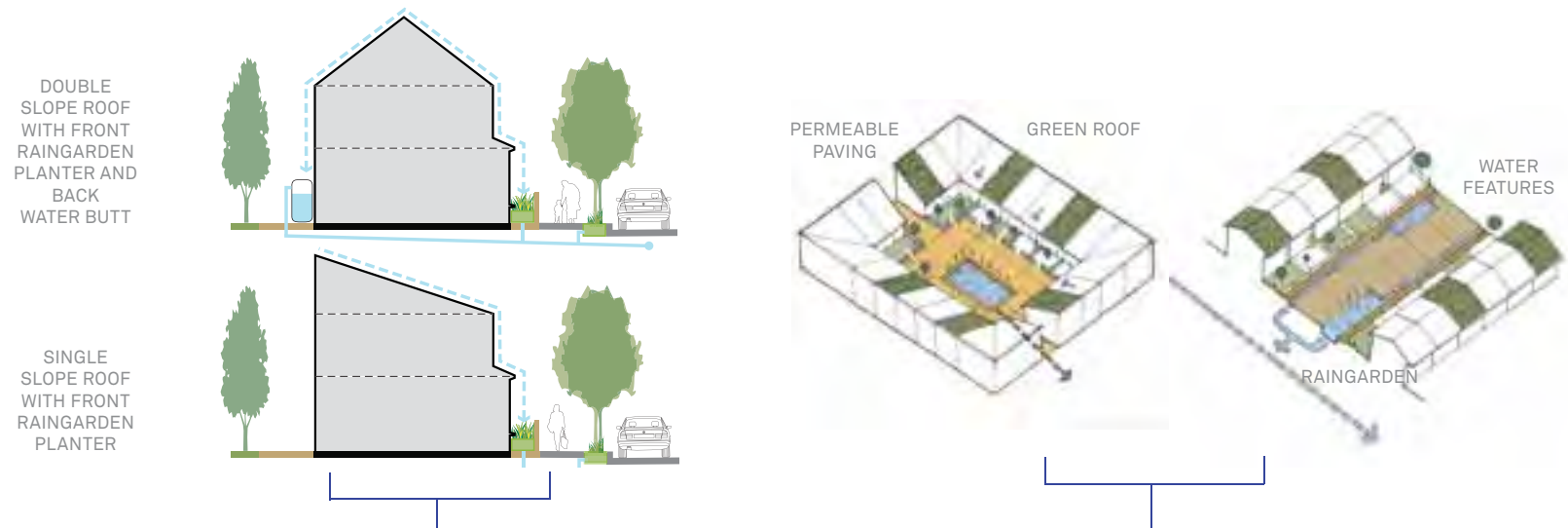


Figure 3.125 SuDS Hierarchy Diagram





SuDS AREA	Properties	Courtyards and Public Realm
SuDS TYPES	Permeable surfaces or green roofs or raingardens	Raingardens or permeable paving or water features
Water management objectives	<ul style="list-style-type: none"> <li>•Provide source control measures to slow and reduce runoff leaving property area. Provide first stage of treatment where possible</li> <li>•Include rainwater harvesting systems if site wide non-potable network is not available.</li> </ul>	<ul style="list-style-type: none"> <li>•Capture runoff and providing a first stage of treatment.</li> <li>•Provide local attenuation to size specified in drainage plan.</li> </ul>
Character	To suit property design and garden space.	To complement character of public space.
Landscape integration	Runoff should be captured from the whole roof. Roof configuration should be considered to ensure all water can be intercepted.	<ul style="list-style-type: none"> <li>•Raingardens can be used as landscape features.</li> <li>•Permeable paving or water features may be more suitable for hardscape areas.</li> <li>•Integrate with other uses and public realm features, including seating.</li> <li>•Inspection chambers should be disguised through design.</li> </ul>

Table 3.22 SuDS Typology Table



RAINGARDEN TREEPIT



Refer to the landscape section for further information on how SuDS should be integrated with Green Corridors and the Western Edge.



SuDS Streets	Western Edge	Green Corridors
Raingarden Tree-pits or Streetside Swales	Wetlands, Ponds and treated water storage	Swales
<ul style="list-style-type: none"> <li>•Capture runoff and providing a first stage of treatment.</li> <li>•Convey runoff to Green Corridors, keeping on-surface or in shallow pipes where possible.</li> </ul>	<ul style="list-style-type: none"> <li>•Provide site wide attenuation and control to size specified in drainage plan.</li> <li>•Provide final water treatment.</li> <li>•Provide a pond or underground storage for treated water to be reused.</li> </ul>	<ul style="list-style-type: none"> <li>•Convey water through the development.</li> <li>•Small temporary attenuation areas can be introduced using weirs.</li> </ul>
To complement character of street.	Natural	Informal recreation space
<ul style="list-style-type: none"> <li>•Streetside swales should be used in more informal rural character streets, raingarden tree-pits should be used in more formal main streets.</li> <li>•Avoid dominating the street space, by locating SuDS to suit street character and tree planting strategy.</li> <li>•Raingardens can be used in roadway in tandem with parking areas or in footway.</li> <li>•Swales should include pedestrian crossing points.</li> <li>•Inspection chambers should be disguised through design.</li> </ul>	<ul style="list-style-type: none"> <li>•Complement layout of bunds and Green Corridors.</li> <li>•Design to take account of flooding from washpit brook.</li> <li>•Integrate with recreation objectives of Western Edge.</li> <li>•Inspection chambers and flow controls should be disguised.</li> </ul>	<ul style="list-style-type: none"> <li>•Integrate with the informal recreation objectives of the Green Corridors.</li> <li>•Avoid dominating the space through multiple uses of space.</li> <li>•Use shallow slopes or formalised hard edges to allow use of adjacent spaces.</li> </ul>

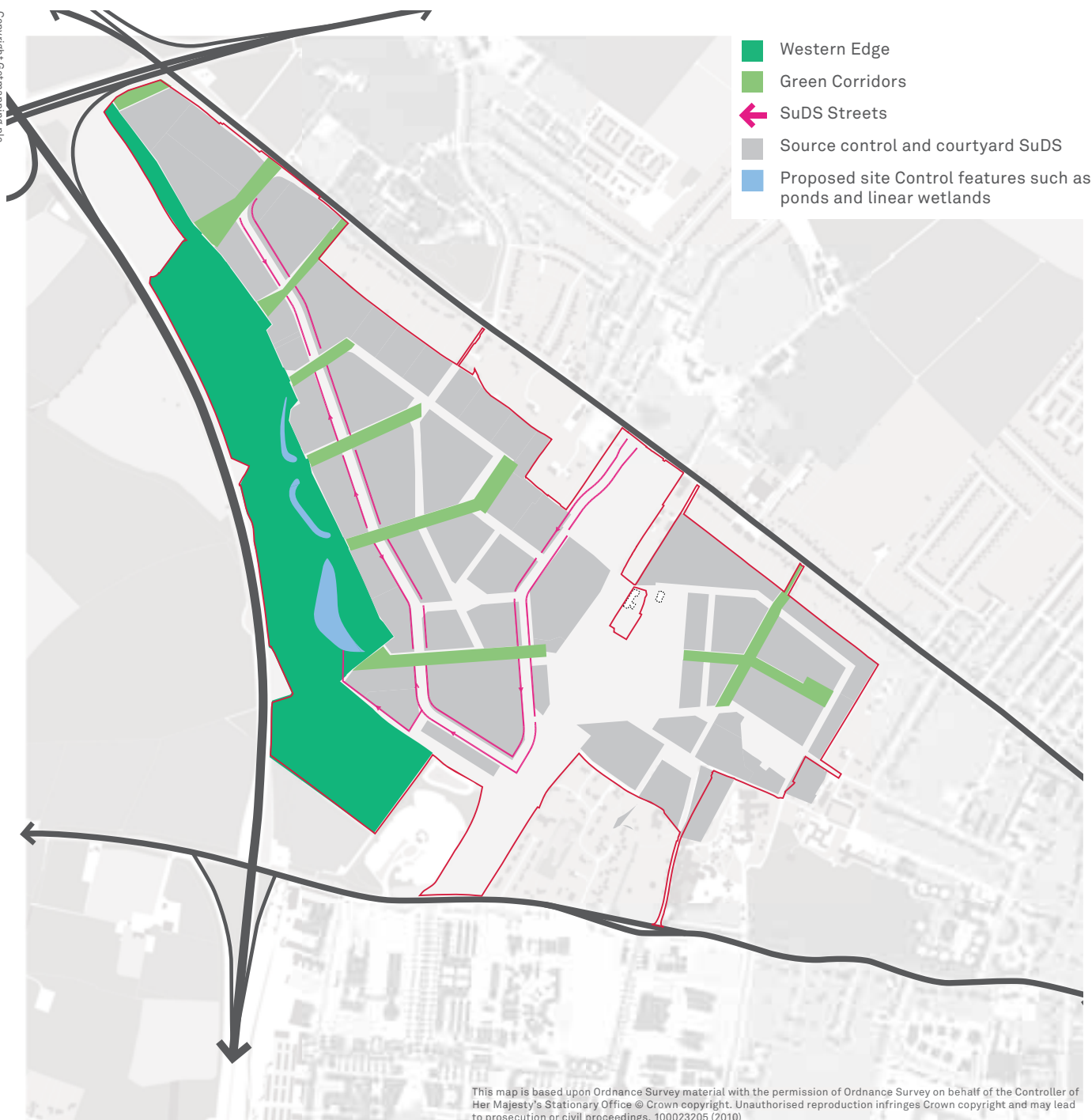


Figure 3.126 SuDS Strategy

Connections and transitions are important to the SuDS strategy to ensure that runoff is captured and filtered using a treatment train of at least two SuDS features. All runoff should be directed towards the western edge, but it should be slowed and treated during its journey. Runoff from properties should connect to the surface water sewer after passing through initial SuDS measures where possible. Connections are likely to be made at the front of the property and therefore a front sloping roof can be advantageous to avoid passing pipework beneath the house. Connections may be possible from the back where properties back onto communal courtyards or green spaces.



Figure 3.127 Diagram showing various source control measures at property level and connections to wider system



Where overland conveyance is possible, using swales or above ground channel systems this is preferable. Water should enter the underground surface water system at the last possible point to ensure piped systems are shallow and that connections to downstream features do not need to be made at significant depth. Green Corridors are distributed throughout the site to ensure plots and streets can connect to the overground system early to avoid deep pipes and SuDS features.

Some streets are allocated to include overground swales. Other streets should use kerb and channel systems to convey runoff overland where possible until runoff can join a SuDS feature or Green Corridor. Traditional gully systems should only be used where necessary, as pipe depths governed by minimum depths of cover (SfA) will mean that where swales receive piped flows, the base level of the swale will need to be constructed at at least 1.8 m below the surrounding ground level and this will further deepen with long pipe

runs. Outfalls will need to be provided as will inlets back into the drainage system to allow for the proposed swales to be connected to each other and beneath crossing streets.

See Section 3.3 Access and Movement, Street Hierarchy and Typology on page 51, Section 3.4 Landscape, The Western Edge on page 84, The Green Corridors on page 92 and Indicative Tree Species on page 110.



Figure 3.128 Hierarchy of streets, swales and Green Corridors, aiming to use overland flow where possible to avoid deep pipes and deep receiving swales



## Light

All lighting will be designed to minimise energy consumption and limit light pollution using high efficiency lighting systems.

Lighting will be selected to minimise its impact on existing and future ecological corridors and habitats.

The lighting principles reflect the location of the Proposed Development, as the edge of Cambridge. The Western Edge will remain shrouded mainly in darkness, although the existing Park & Ride, which is illuminated at night, will provide some lighting. An all weather pitch in the field west of the Park & Ride will have floodlighting (the nature of this will be addressed through detailed design).

The central Green Corridor leading up to Storey's Field and beyond, to Huntingdon Road, will be lit to ensure safe and direct night time routes through the development, in line with *Secured by Design* methods. Cycling and walking routes will be lit providing safe and sustainable methods of transport. See Section 3.3 Access and Movement, Pedestrian and Cycling on page 70, Section 3.4 Landscape, The Green Corridors on page 92.



Lighting Precedents

# Noise

The acoustic design will provide a combination of appropriate indoor ambient noise levels for different activities and sound insulation between spaces that will reduce disturbance and provide privacy. The indoor ambient noise levels will consider the influence of other environmental factors such as ventilation and comfort cooling requirements of the spaces

All buildings in the Proposed Development will be designed to avoid adverse noise effects. This will include building massing, internal layouts of specific buildings, employment of appropriate stand-off distances from internal site streets and the specification of appropriate glazing and ventilation.

See Chapter 7, Appendix A, A.6 Existing Noise Conditions on page 264 for classification of the Application Site in terms of Noise Exposure Categories (NEC).

Significant shielding of noise from the M11 will be achieved for a large part of the proposed development by the buildings on the western fringe. Where feasible, less sensitive parts of the proposed development, such as commercial

and academic buildings, will be located on this fringe. For facades facing areas within NEC C, measures such as acoustically attenuated louvres, orientating windows away from noisy facades, screening balconies, and stack ventilation and earth tubes with air inlets on quieter facades will be deployed where appropriate.

Where practicable, habitable rooms such as living rooms and bedrooms will be located on the quiet facades of residential buildings. Less sensitive spaces such as hallways, bathrooms and kitchens will be located on the noisier facades.

The aim will be to place habitable rooms of all residential properties within NEC A or the lower part of NEC B for both the daytime and night-time periods.

External walls will provide a sound insulation equivalent to a standard brick/block cavity construction (minimum 50 dB Rw).

Where residential properties share a party wall or floor with commercial properties, the separating constructions will provide

sufficient attenuation for the intended uses of the commercial properties, to provide the required internal noise levels to the residential properties.

The contribution from the shielding will be beneficial to the residential development during future phases. The benefit from this shielding is not relied upon when establishing the façade designs of Phase 1, and reasonable indoor noise levels will be achieved before western edge buildings are built.

See Section 3.1 Land Use on page 26 and *Parameter Plan 04* of the *Description of Development* (Chapter 7, Appendix B, page 282) for details on land uses.

See Section 3.4 Landscape, The Western Edge on page 84 and The Western Edge Landform on page 88 for details of site wide noise mitigation strategy.

## 3.6 SUSTAINABILITY

### Introduction

The University of Cambridge is committed to creating an exemplary sustainable community at North West Cambridge. This is also the vision of Cambridge City and South Cambridgeshire District Councils, the local planning authorities, who have set out a number of advanced sustainability requirements in the *Area Action Plan* that defines the planning brief. The first paragraph of the AAP states:

‘North West Cambridge will create a new University quarter, which will contribute to meeting the needs of the wider city community, and which will embody best practice in environmental sustainability.’

The combined visions of the University and the Local Authorities lead to a number of high level sustainability requirements for the entire site:

- All homes will be designed and built to at least *Code for Sustainable Homes Level 5 (Code 5)*
- All non-domestic buildings covered by the *BREEAM* scheme will be designed to *BREEAM Excellent*
- All non-domestic buildings will reduce predicted CO<sub>2</sub> emissions by 20% through the use of renewable energy
- All buildings will be adaptable to future climate change
- All buildings will be designed so as to minimise resource use, in particular lifecycle energy and

water resources and materials required to build the development

- All buildings and surrounding infrastructure will be designed so as to encourage low carbon transport choices

The design of the initial phases will set the standard for sustainability across the remainder of the North West Cambridge site. It is therefore essential that it establishes the sustainable infrastructure for the site, both in the form of “hard” infrastructure such as buildings and energy systems, and “soft” infrastructure including the development of a vibrant community and the promotion of sustainable lifestyles.

The development of the Local Centre incorporates a range of community and public facilities and open space, and it is essential that these set the theme of sustainability both in their physical design and construction and also in the way they interface and promote sustainable lifestyles. Facilities like the market square will provide opportunities for public events and the community facilities can also be used for hosting groups from the wider community.

A key aim of the sustainability strategy is to educate residents and visitors. Information provision alongside having sustainable infrastructure “on show” will ensure that the sustainable design is visible rather than disguised, promoting interest and behaviour change.

### Materials

The exemplary sustainable nature of North West Cambridge extends to the selection and use of materials for the buildings and the supporting infrastructure. A number of sustainability criteria will be met by meeting standards set by the *Code for Sustainable Homes* and *BREEAM*, and selecting materials according to their *Green Guide* rating. In general, materials will be selected with a high (A or A+) *Green Guide* rating, and lower rating materials will only be used where alternatives do not exist.

Materials selection will also consider other factors such as local sourcing, recycled content, and embodied carbon. The design of buildings in combination with materials selection will consider maintenance and future replacement lifecycles.

### Resource Efficiency / Energy

The requirements for achieving the AAP, *Code 5*, and *BREEAM Excellent*, will ensure that the development is extremely low carbon. The following strategy is given for reducing carbon emissions:

- All buildings will be built to high standards of energy efficiency. All dwellings will meet the Government’s proposed *Fabric Energy Efficiency Standards* (FEES).
- All buildings will be designed for passive



natural operation where possible. Dwellings will make use of cross ventilation and stack ventilation, and mechanical ventilation used only in areas where these passive measures are not technically viable. Non domestic buildings will be designed for natural or mixed mode ventilation. Cooling will only be provided where specific requirements exist for strict control of conditions.

- The building design will consider orientation. West and east facing facades will make use of a mix of solar control glazing and shutter systems to reduce overheating potential. South facing facades will be designed to maximise winter thermal gains whilst



Figure 3.129 Solar Control Glazing and Shutter System

minimising summer overheating using solar control measures.

- All dwellings and the majority of non domestic buildings will be connected to a site wide district heating system powered by gas fired CHP and gas fired peak / back-up boilers. Non-domestic buildings will only be separate from this system when thermal loads are sufficiently small to not justify connection. Performance standards for the energy centre will be set to ensure that CO<sub>2</sub> savings are optimised.
- All dwellings are likely to need to incorporate extensive photovoltaic arrays in order to meet the energy requirements of Code 5. The design of roofs will be optimised to incorporate adequate PV areas and ensure the arrays are 'designed-in' and non simply 'bolted-on'.
- All non-domestic buildings are required to achieve a 20% reduction in CO<sub>2</sub> emissions from



all loads using renewable energy. Following modelling which shows this is not possible on some buildings, but can be exceeded on others, an approach has been agreed for the *Outline Planning application* where this is calculated on an aggregate basis across the site. The following design criteria have been set which are equivalent to a 20% aggregate saving and which are simple to monitor:

DESIGN CRITERIA USED TO ENSURE THAT 20% CO <sub>2</sub> REDUCTION FROM RENEWABLE ENERGY TECHNOLOGIES IS ACHIEVED IN THE AGGREGATE ACROSS THE SITE FROM NON-DOMESTIC BUILDINGS.	
HEATING TECHNOLOGY (WHICHEVER OF THE FOLLOWING PROVIDES THE HIGHEST CARBON SAVING)	ELECTRICITY TECHNOLOGY
Ground source heat pump providing at least 80% of space heating demand and solar thermal providing at least 50% of predicted hot water demand OR	PV panel area* of at least 25% of the building's footprint and therefore anticipated to cover approximately 50% of the building's roof area.  * Assumed to be monocrystalline PV with an annual output of 850 kWh/kWp, and shall have module efficiency of at least 15%. If the performance cannot be met due to orientation with a panel area of 25% of the building's footprint, the size of the array must be increased to provide the equivalent output.
100% of heating (space and DHW) to be delivered from district heating	

Table 3.23 Heating and Electricity Technology Table



## Construction Waste Management

*Construction Environmental Management Plan: Condition 52* developed for the site details a comprehensive suite of measures that will be taken to reduce waste during the construction process including the use of Site Waste Management Plans, segregation of waste collection, identification of materials with high recycled content and the thorough monitoring and reporting of waste streams throughout the construction process. In particular the following targets have been set:

- The scheme must achieve a waste recovery (diversion from landfill) of 100% for all non-hazardous excavation waste.
- There must be no transfer of materials from the site as a result of ground works (i.e. cut and fill balance).
- There will be no transfer of materials to the site as a result of ground works unless suitable materials are not present on the site and design alternatives do not exist.

## Operational Waste Management

An underground bin waste collection system will be used for all dwellings and student residences for the purposes of waste collections. This comprises large underground waste vessels (of between 3,000 litres and 5,000 litres), each connected to a small surface collection receptacle. This approach offers a number of benefits:

- Reduced visual impact of waste collection and eliminates the need for multiple, segregated waste, wheelie bins for each home. Separate bins will only be required in the non-domestic sector for specialist waste streams.
- Increased land availability through removing the need for separate bin compounds and enclosures.
- Reduced collection time and cost by reducing the number of collection points.
- Encouraging higher levels of recycling by residents through increasing the profile of

waste collection in combination with the provision of source segregated facilities in buildings.

The underground bins will be used for the following building types:

- All university owned housing and flats
- All market housing and flats
- All student accommodation
- Non domestic uses where the use of underground bins offers a suitable solution.

For other building types, an alternative waste collection system will be specified which is best suited to the building size and use.

The underground bins are located in groups of three at various points around Phase 1 to provide segregated collection for municipal solid waste (MSW), dry recycleables, and segregated paper waste. The volume of the underground bins will satisfy storage requirements set out in the *RECAP guide* and *City Council waste requirements* as follows:

Number of rooms	RECAP guide (litres)	Cambridge City Council guide (litres)	Proposed volume for North West Cambridge
1 room flat	240	200	240
2 room flat	340	320	340
3 room flat	440	440	440
4 room flat	540	560	560
5 room flat	640	680	680
House	775	720	775

(note – City council figures exclude green waste for flats).

Table 3.24 Underground Bins Storage Requirements



Figure 3.130 Underground Bin Waste Collection System



Different design of Underground Bin Waster Collection Systems



The optimisation of bin locations is important for the viability of the collection scheme to match storage volumes and provide acceptable transfer distances for all residents. The nature of the underground waste scheme is different to existing forms of waste collection. Residents will be disposing off waste more frequently due to limited storage within dwellings, and will therefore be carrying smaller, lighter bags. The underground bins are all located in open accessible places which are likely to be on well used routes for residents, and therefore there are minimal additional trips. In light of this, transit distances can be relaxed from existing *RECAP* and *Part H Building Regulation* guidance. At least 80 % of dwellings

will have a maximum transit distance of 50m or less, and the designs will aim to limit the transit distances for units above this level. All designs should aim to target distances of 30 metres or less for each dwelling where possible.

Underground bins will be located for easy collection by a dedicated waste collection vehicle. The following criteria will be met:

- Bins located on adopted highways will have a lay-by for the waste collection vehicle to prevent traffic disruption.
- Bins located on non-adopted routes will be located at the streetside requiring the waste collection vehicle to stop on the street.
- All collection points will be suitably designed

to withstand the weight of a waste collection vehicle and any hydraulic supports.

- All bin locations will be such that no reversing is required of the waste collection vehicle. This allows single person operation.
- Bins will be typically arranged in a single row parallel to the street. In some cases, the bins may be banked in two rows, which allows collection by the designated vehicle. No more than two rows will be used.

See Section 3.3 Access and Movement, Street Hierarchy and Typology on page 51.

All collection point to withstand the weight of a waste collection vehicle and any hydraulic supports

Bins should be located such that no reversing should be required for the waster collection vehicle

Lay-by for waster collection vehicle

Single row of bins parallel to the street, bins may be arranged in max. two rows

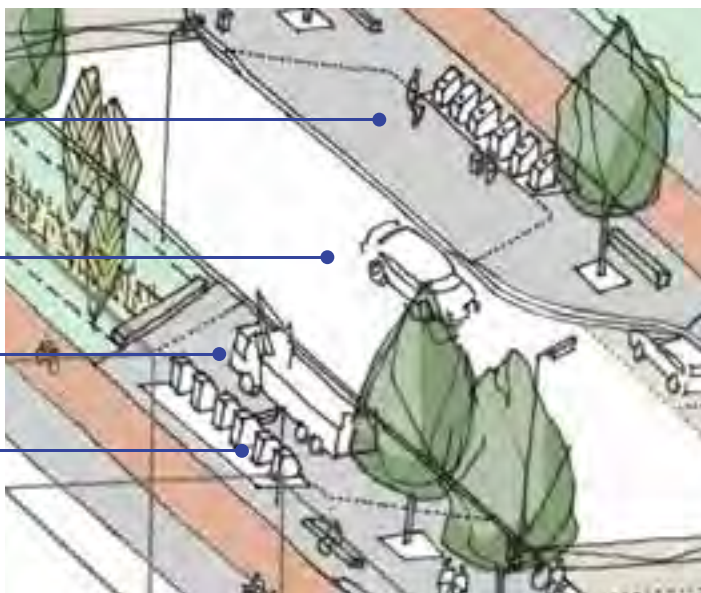


Figure 3.131 Indicative bin arrangement on adopted highways

Bins located on street edge, waste collection vehicle will stop on the street, collection point to withstand the weight of a waste collection vehicle and any hydraulic supports

Bins should be located such that no reversing should be required for the waster collection vehicle

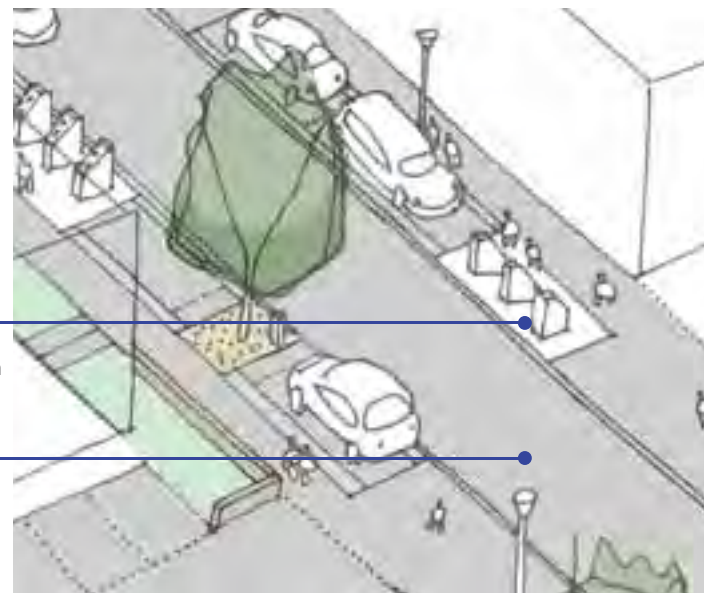


Figure 3.132 Indicative bin arrangement on non-adopted routes



## Composting

All private houses will be provided with a garden compost bin which can be used for garden and food waste. These will be the responsibility of the householder.

Providing a suitable composting solution for food waste is essential to achieve the Was 3 credit of the *Code for Sustainable Homes*.

Where no segregated food waste collection service is available, the Code requires the availability of individual homes composting facilities or managed communal composting facilities. These should be:

- In a dedicated position
- Provide inclusive access and usability
- Have a supporting information leaflet provided to each dwelling

The compost bins are required to be located within 30m of the entrance to individual dwellings, or to the external entrance to a block of flats. This route must be inclusive and meet the requirements of the *IDP checklist*,



which notably excludes the use of steps on the external route.

## Compost Bin Types

Three types of compost bin provided will depend on the size required and the location. Two basic types will be used where appropriate:

- Conventional plastic bin. These provide a low cost solution and are made from recycled plastics. They are fitted with a lid and sometimes a base, with a trap door allowing compost removal from the bottom.
- Wooden enclosures. These are available from a range of suppliers and are constructed from wooden slats. The construction type means that they can be constructed in virtually any size and shape, and can be modular with multiple bins located next to each other.

An in-vessel composting system will also be provided if feasible on site for excess garden waste from private houses, and for grounds waste from communal gardens and public



spaces. Subject to the obtaining of suitable permits, the in-vessel composting unit will also be used for the composting of food waste from retailers and non-domestic kitchens.

## Bring Sites

The bring site strategy is being developed and will include collaboration with the Councils.

- A location with the potential for holding the equivalent of two bring sites. Given the density of the local centre, the co-location of two sites is a practical option.
- The bring site will use underground bins where practical and where a suitable collection service exists.
- Provision will be made for off-street parking to allow the drop off of waste by car users.
- The location and layout will consider collection vehicle types.
- The site will be accessible by all residents and be adequately lit for safety.





## Climate Change Adaptation

There is international scientific agreement that the earth's climate is changing and will continue to change as a result of increased concentrations of greenhouse gases. The concept of climate change adaptation is aimed at designing buildings which can cope with the projected changes in climate conditions and subsequent weather conditions which may be experienced:

- Increased peak summer temperatures and milder winters
- Lower annual rainfall
- More intense storms including higher peak rainfall and winds.

## Higher Summer Temperatures

Higher summer temperatures could have two impacts on the built environment. Firstly higher peak temperatures may cause conditions which are uncomfortable for building residents with acceptable comfort criteria being exceeded on a regular basis. Secondly, higher temperatures (combined with lower annual rainfall) may affect ground conditions, and affect the structural stability of buildings and infrastructure. This second aspect is perhaps easier to cope with and requires foundations and infrastructure to

be designed in such a way that they can cope with shifting ground conditions such as clay shrinkage. This will be assessed as part of the detailed design proposals for the Proposed Development.

Overheating presents more of a challenge and buildings need to be designed to provide natural ventilation and cooling to cope with higher summer temperatures for occupiers' comfort and investor confidence. Measures under consideration for the Proposed Development include:

- Shallow plan and dual aspect buildings to allow cross ventilation. (This also means natural daylighting will be improved). Buildings will have sufficient areas of opening windows and secure shuttered ventilation to achieve this. Passive ventilation measures such as the inclusion of stack effect chimneys will be examined.
- Hard landscaping and building surface finishes with high albedo where beneficial to increase solar reflectivity. This means that less infrared radiation is absorbed. One simple way of doing this is to paint roofs white and use light coloured materials.
- The use of shading to reduce solar gains. Shading can be in a range of forms including external shutters, brise soleil, recessed windows, or natural vegetation (either growing

up the building or neighbouring trees). Natural vegetation is particularly attractive because it can provide shading in the summer when required, but loss of leaves in the winter means better solar access. There is also the potential for evapo-transpiration to reduce external temperatures.

- High thermal mass buildings which provide a buffer to high daytime external temperatures.

To demonstrate that the design proposals function correctly at a detailed design stage, thermal modelling of buildings will use current climate data and also future weather data from the *UK Climate Impacts Programme* (UKCIP). The architect will be required to demonstrate that the designs are optimised for both and that the need for additional cooling has been minimised through passive design.



All homes designed to meet  
*Code for Sustainable Homes*  
Level 5

Integration with public realm  
and plots / blocks

Roofs Optimised for solar  
Energy : Very large areas of  
PV required to meet CSFH 5

High performance thermal  
envelope. Homes designed  
to at least fabric energy  
efficiency standards. (FEES)

Sustainable material palette  
Low embodied carbon  
Locally sourced - long life/robust  
High recycled content

Construction waste minimised  
through secreation of waste  
streams

Climate chage adapted : Solar  
shading/ orientation/ thermal  
mass designed to reduce  
summertime temperatures

Homes designed for  
cross ventilation  
Acoustic control of  
ventilation on noisy  
facades

Outdoor  
lighting  
designed  
to minimise  
light  
pollution

80% of dwellings will have  
bins located within 50m of  
their front door. Bins will  
be located in areas which  
have good access and are  
convenient for residents  
when making other journeys

All homes well daylit.  
Narrow plan with  
careful attention to  
overshadowing from  
adjacent buildings

All homes connected to  
site - wide greywater  
system

Extensive/ accessible cycle storage  
(all plot related cycle provision to be  
accommodated on plot + adjacent  
to staircase and entrances to create  
a sociable environment

Food growing throughout  
landscape/garden design

Compost bins in private/  
communal gardens

Low carbon heat from  
energy centre

Car - Club parking spaces

Filter strips  
and permeable  
paving across  
all lots,  
contributing  
the site wide  
SuDS strategy.

Figure 3.133 Sustainability Integration Illustrative Diagram

## Water Supply

With lower annual levels of rainfall, water will become more scarce. In East Anglia, with already the lowest levels of rainfall in the UK, there will be a significant pressure on existing supplies.

The Proposed Development includes a number of features to reduce potable water demand:

- Water fittings and sanitary ware will be selected on the basis of low consumption, including dual flush toilets, aerated taps and showers, and intelligent water controls.
- Buildings will be designed to achieve high *Code* and *BREEAM* standards for water consumption resulting in design for 80 litres per person per day or less for all dwellings.
- Water will be metered for all buildings, via smart meters, allowing occupants and residents to monitor and observe water consumption.
- Greywater and rainwater systems will be installed on a per building or communal basis to reduce the demand on mains water.
- Water for irrigation purposes will be sourced from rainwater or greywater systems. Each house will be equipped with a rainwater butt where practicable.
- Any appliances provided will be designed for low water consumption. Green leases will require all residents and tenants to use only low consumption devices.





## More Intense Weather

Climate change may mean that the UK experiences more intense weather events, for example more intense storms with higher winds and peak rainfall. Both buildings and the wider site infrastructure will need to be designed to cope with these.

Buildings in the UK are currently designed with a large safety margin for wind loading and major structural failure is rare. However all the building designs will be required to demonstrate that they have considered increased wind loading on key components, for example shading devices, and that these are adequate for predicted future climatic conditions. Predicted combinations of high wind and rainfall suggest that the building fabric will need to be impervious to driving rain. The use of roof overhangs and recessed windows would provide protection from driving rain and additional shading.

Predicted higher levels of winter rainfall suggest higher surface run-off and that flooding will result unless adaptation measures are incorporated. At a building scale, guttering and downpipes can be sized to allow for greater rainwater run-off to prevent damage to the structure. At the ground level, the use of Sustainable Urban Drainage Systems (SuDS) can provide a way of attenuating the run off. The following measures are proposed:

- Areas in the northern gravel-based part of the site will make use of permeable paving and landscaping to allow infiltration of rainwater.
- In the southern clay-based part of the site, a series of swales will provide a high capacity drainage system providing a buffer and increased levels of infiltration.
- Balancing ponds on the western edge will provide additional attenuation.

The end result is that surface run-off will be no greater than for the existing greenfield site for a 1 in 100 year event modelled on 2050 rainfall scenarios from UKCIP. See also *Flood Reduction Scheme: Condition 28*.





## 3.7 ACCESSIBILITY

### Accessibility

Walkable neighbourhood and good accessibility are one of the fundamental principle of the North West Cambridge. The Local Centre located at the heart of the urban expansion provides accessible community amenities which include good bus route, well-positioned bus stops, health centre, primary school, community hall and local shopping.

Furthermore, the design of all buildings and the public realm will meet the current guidance on *Building Regulations Part M (Design for impaired movement)*. The choice of materials and palettes will meet the requirements for visually impaired users and satisfy guidance within *Manual for Streets* and the *Cambridgeshire Design Guide*. In particular, design should take into account:

#### Principles of Inclusive Design (CABE, 2006)

*Principles of Inclusive Design* encourage high quality and inclusive design which meets the built environment needs of everyone on equal terms, regardless of age, disability, ethnicity or social grouping.

The guide aims to encourage policy makers and developers to embrace design that creates places that everyone can use.

#### Lifetime Homes Design Guide (2011)

The Government's *Lifetime Homes Standards* (16 Design Criteria) ensure that residential development is designed to meet the needs of

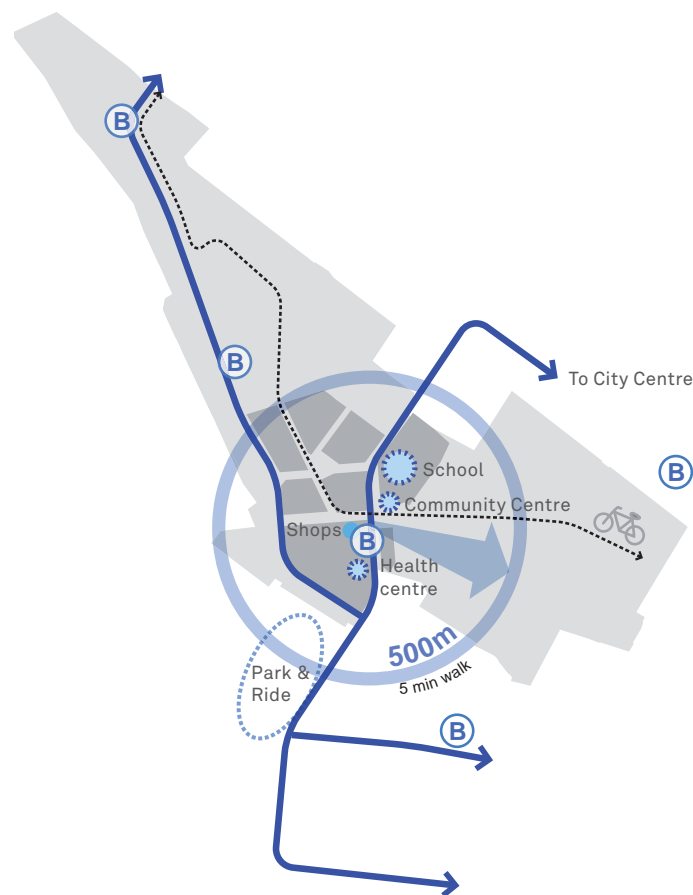


Figure 3.134 Public Transport Concept

all residents at different life stages. Lifetime homes are about flexibility and adaptability. These provide accessible and adaptable accommodation for everyone, from young families to older people and individuals with a temporary or permanent physical impairment.

The planning permission requires that 50% of homes must meet *Lifetime Homes Standards*. However, due to the relationship with achieving *Code for Sustainable Homes Level 5*, it is anticipated that a significantly higher proportion, if not all, residential homes will achieve *Lifetime Homes Standards* and follow the principles of *Building for Life* criteria.

### Secured by Design

*Secured by Design (SBD)* is a police initiative which seeks to encourage the new development to adopt crime prevention measures in their design to reduce the opportunity for crime and the fear of crime, creating a safer and more secure environment for all users. *Secured by Design* focuses on crime prevention of homes and commercial premises.

Seven key attributes of sustainable communities are referenced in *SBD*, and all are particularly relevant to crime prevention.

The principles of crime prevention set out in *SBD* should be considered as part of the North West Cambridge design proposals.

## Public Transport

The access strategy allows for both orbital and radial public transport priority routes: the former will enhance connections across the outskirts of Cambridge between North West Cambridge, West Cambridge, NIAB Development, the Guided Busway and Cambridge Science Park to the north; the latter will link to areas within Cambridge, such as the City Centre, Addenbrooke's Hospital and the Railway Station.

Public transport services have been carefully routed through North West Cambridge to provide easy public transport access, to encourage residents and employees to use buses to access local facilities. Quality on-site bus stops and shelters will be provided, enabled with real time information displays. The services will be well-advertised, frequent and a sustainable alternative to the private car.

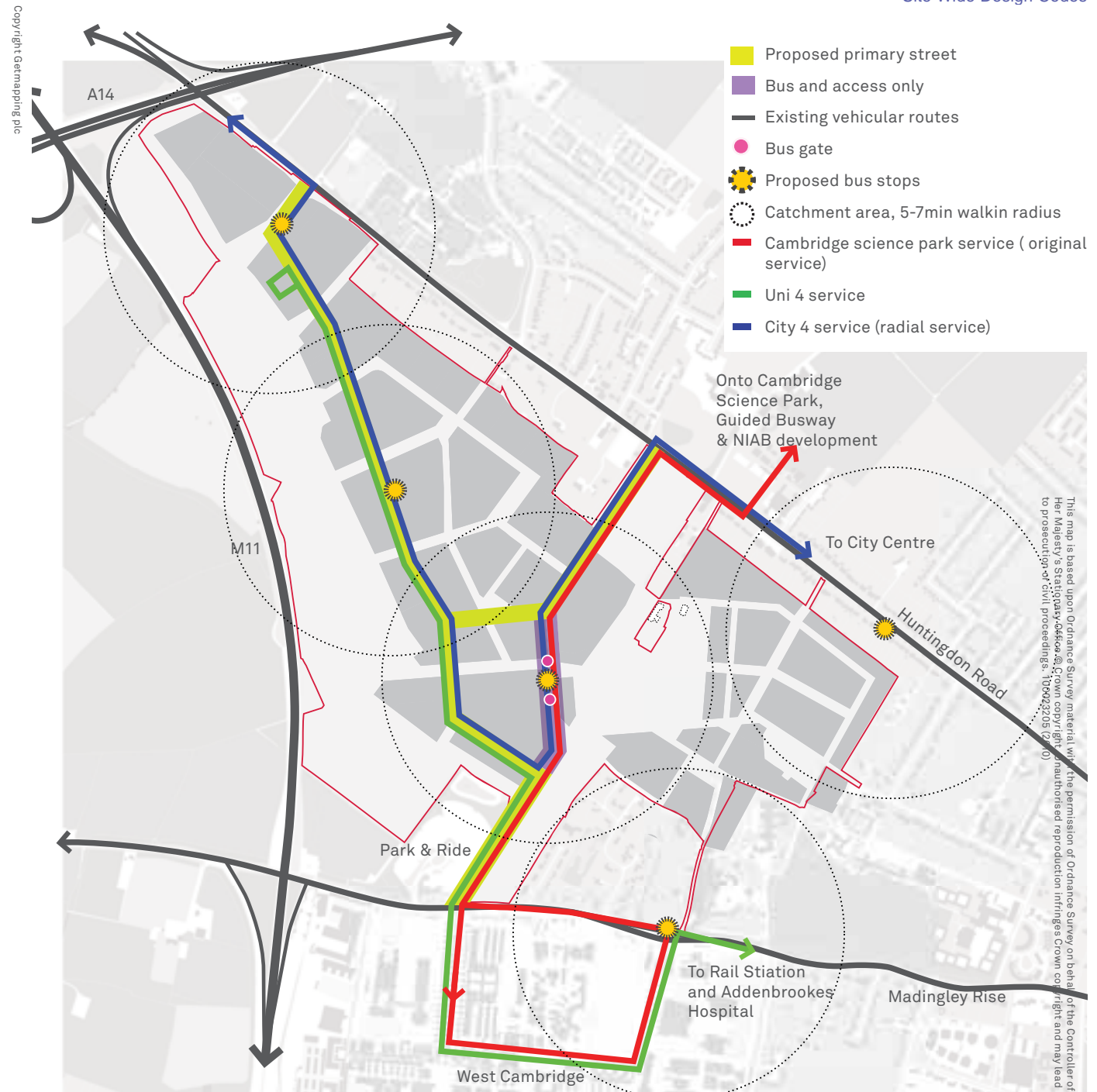


Figure 3.135 Public Transport



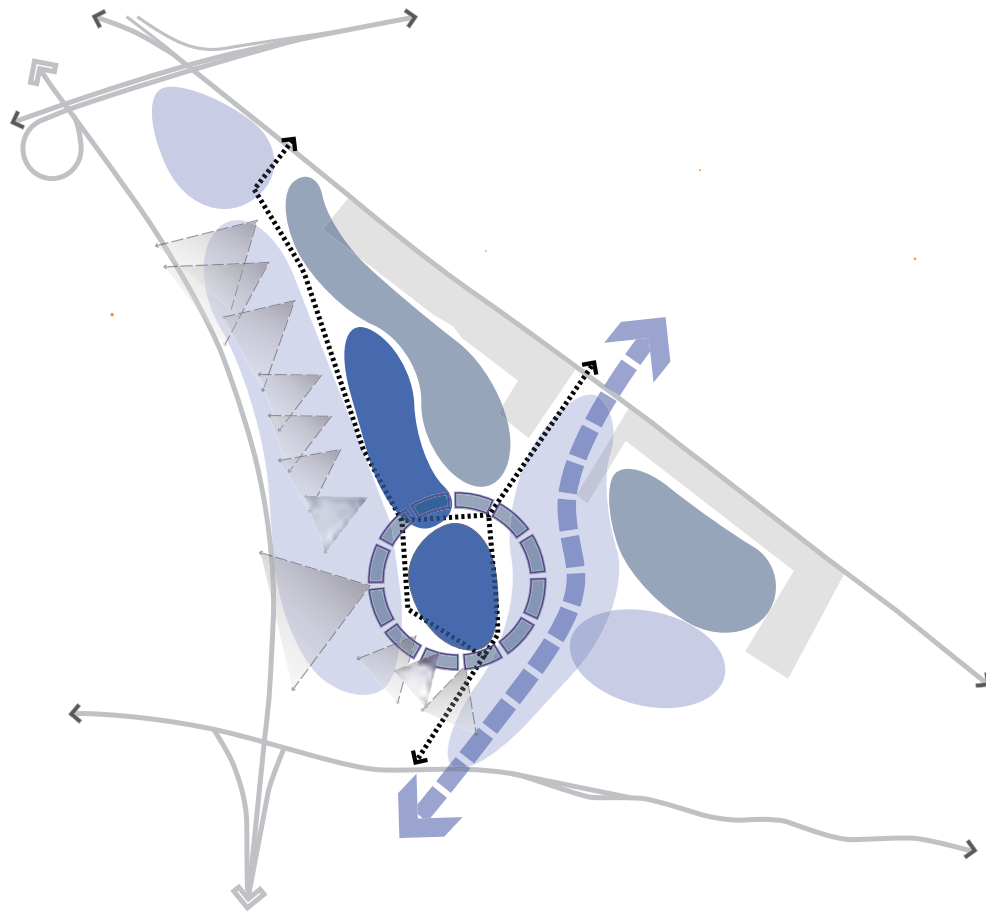


Chapter Content

4.1	Introduction to Character Areas	148	4.2	Typical Content Applicable to All Character Areas
	Storey’s Field	153		Character Area Description & Concept
	Neighbourhood Village	161		Character Area Place-making Ingredients
	Local Centre	173		Character Area Code Navigation Table
	Western Edge	189		Blocks - special conditions
	North West Corner	197		Street - special conditions
	Madingley Rise	205		Landscape - special conditions
	The Ridgeway	215		



## 4.1 INTRODUCTION TO CHARACTER AREAS



### CHARACTER AREAS

The North West Cambridge masterplan is divided into seven character areas based on the following criteria:

1. Response to Context
2. Land uses
3. Place-making

The Neighbourhood Village responds to the residential to the East of Huntingdon Road and creates a strong edge, respecting the privacy of local residents. The North West Corner is composed of mostly commercial research and development buildings that form a campus area with landmark presence on the A14. The Western Edge acts as a buffer to the M11 and shields the development visually along with providing acoustic benefits and aiding with water management systems. Storey's Field, a retained Green Belt feature, is in a very strategic location and provides visual interest and landscape amenity to the development. Madingley Rise is a distinctive address for academic facilities located at a key gateway junction from the South. The Local Centre is situated in the heart of the development. It is composed of residential and mixed use with the market square forming its core. The Ridgeway takes its name from a key permeability feature which is an important pedestrian and cycling route connecting the site North-South and passing through most of the development.

Figure 4.1 Concept for Character Areas



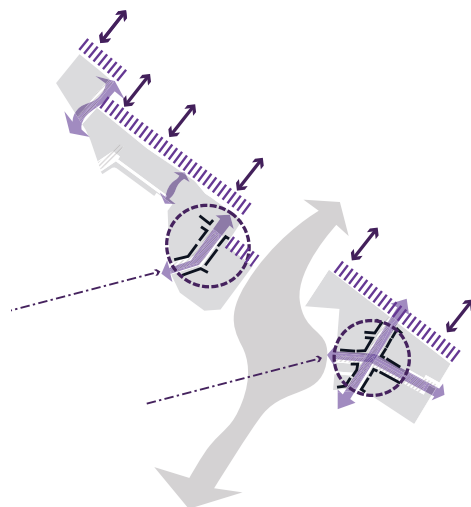
Figure 4.2 Character Areas

## Storey's Fields



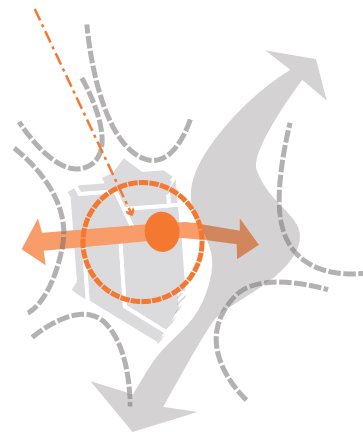
The Storey's Field character area is anchored by the Girton Gap - part of the retained Green Belt. This strip of Open Land currently exists and will be incorporated into North West Cambridge as a strategic separation between Girton Village and Cambridge City. Please refer to page 153.

## Neighbourhood Village



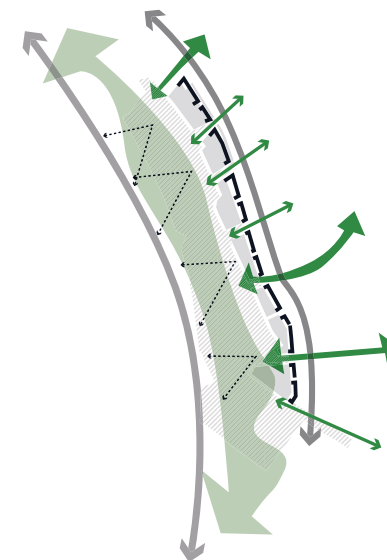
Neighbourhood Village Character Area comprises primarily residential communities that back onto existing houses on Huntingdon Road to create a good urban edge, respecting the privacy of local residents. Please refer to page 161.

## Local Centre



The Local Centre is very heart of this new piece of city. Anchored by the market square, the local centre forms the crossroads of movement corridors which bring local communities together in their daily lives. Please refer to page 173.

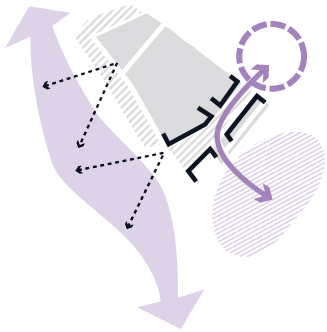
## Western Edge



The Western Edge character area is positioned between the M11 and the Primary Radial Street within North West Cambridge. It is a major parkland that forms part of the sustainable urban draining system of the site. Please refer to page 189.

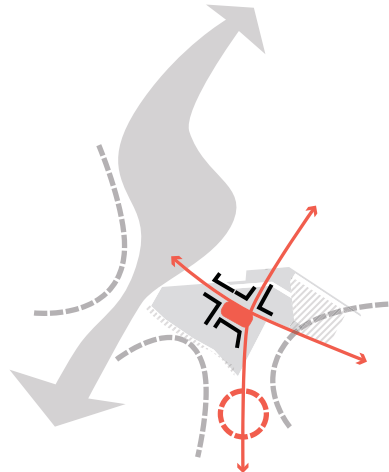


## North West Corner



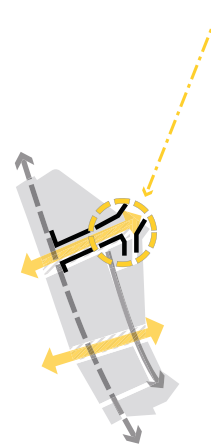
The North West Corner character area focuses around two key structuring elements, the unique small residential community that completes the residential character of the existing residences along Huntingdon road and the commercial research and development buildings that form a campus area with landmark presence on the A14. Please refer to page 197.

## Madingley Rise



Madingley Rise is the academic cluster immediately south of Storey's Field, presenting an urban frontage to the parkland edge, at the same time respecting the privacy of adjacent neighbourhoods. Together with the Department of Earth Sciences and the BP Institute, Madingley Rise character area will establish a distinctive address for academic facilities which are configured around a small, formal square. Please refer to page 205.

## The Ridgeway



The Ridgeway character area sits on the natural ridgeline of the site. This natural alignment is reinforced by the design of a pedestrian and cycle route called Ridgeway. Ridgeway is the key route that links Girton with North West Cambridge and through to Cambridge City Centre. Please refer to page 215.

To aid navigation and clarity, this chapter is colour-coded. A colour is assigned to each character area.

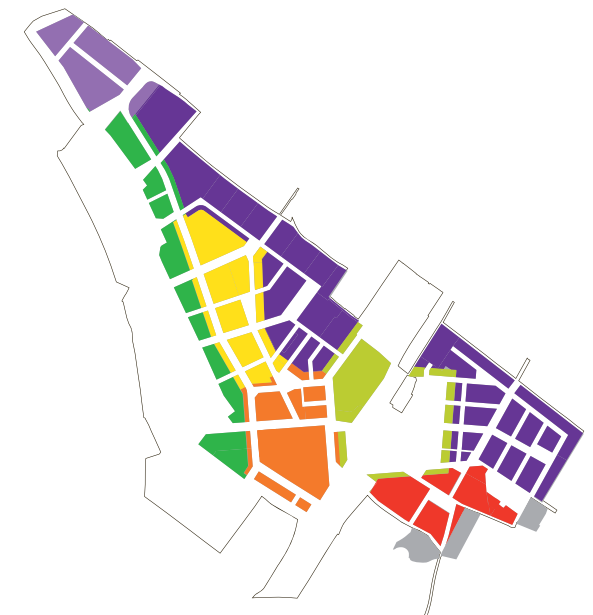
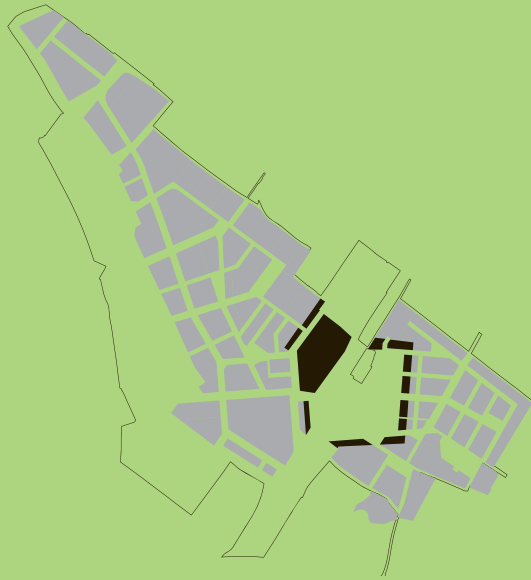
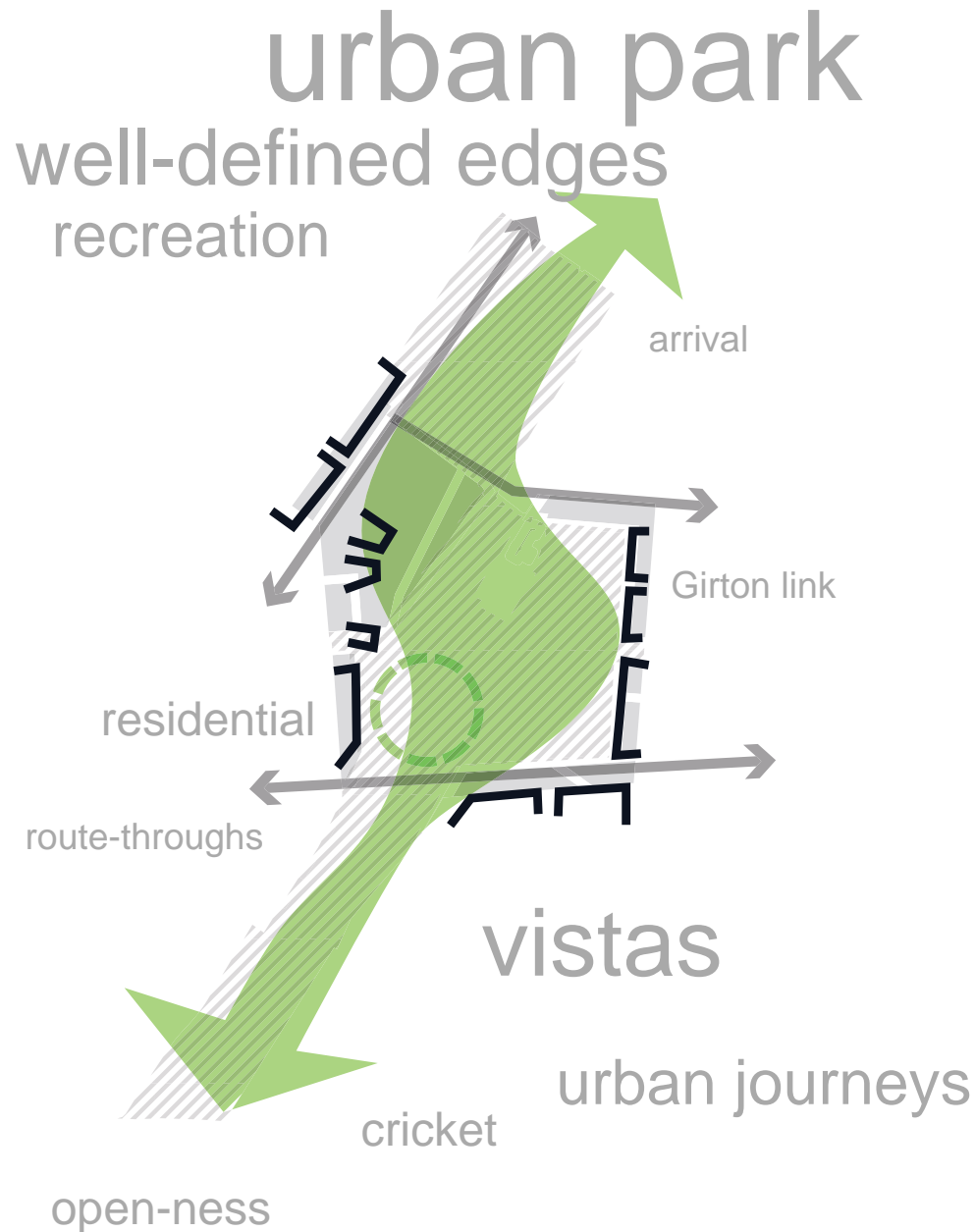


Figure 4.3 Character Area colour coding



North West Cambridge

4



## STOREY'S FIELD

The Storey's Field character area is anchored by the Girton Gap - part of the retained Green Belt. This strip of Open Land currently exists and will be incorporated into North West Cambridge as a strategic separation between Girton Village and Cambridge City.

The central section of the Girton Gap would be a major open space, providing a new urban park for Cambridge on a scale with Parker's Piece within city centre. The Ridgeway cycle route will criss-cross Storey's field connecting the Local Centre the Neighbourhood Village character area and Storey's Way. A cricket pitch will provide a focus for leisure and recreation at the heart of Storey's Field.

This open space will be overlooked by built development on all sides apart from the north, where a view corridor will be set up between Storey's Field and Huntingdon Road East junction. This view corridor will create a sense of arrival, provide good sense of direction and promote legibility on arrival. The green connections to the south of Storey's Field also connect West Cambridge with North West Cambridge.

Figure 4.1.1 Concept of Storey's Field



Peaceful surrounds



High quality park-side residences



Cricket ground for the community



Variety of sport fields for healthy living



Ridgeway as a major cycle route



Storey's Field as a focal point of North West Cambridge for community engagement and recreation



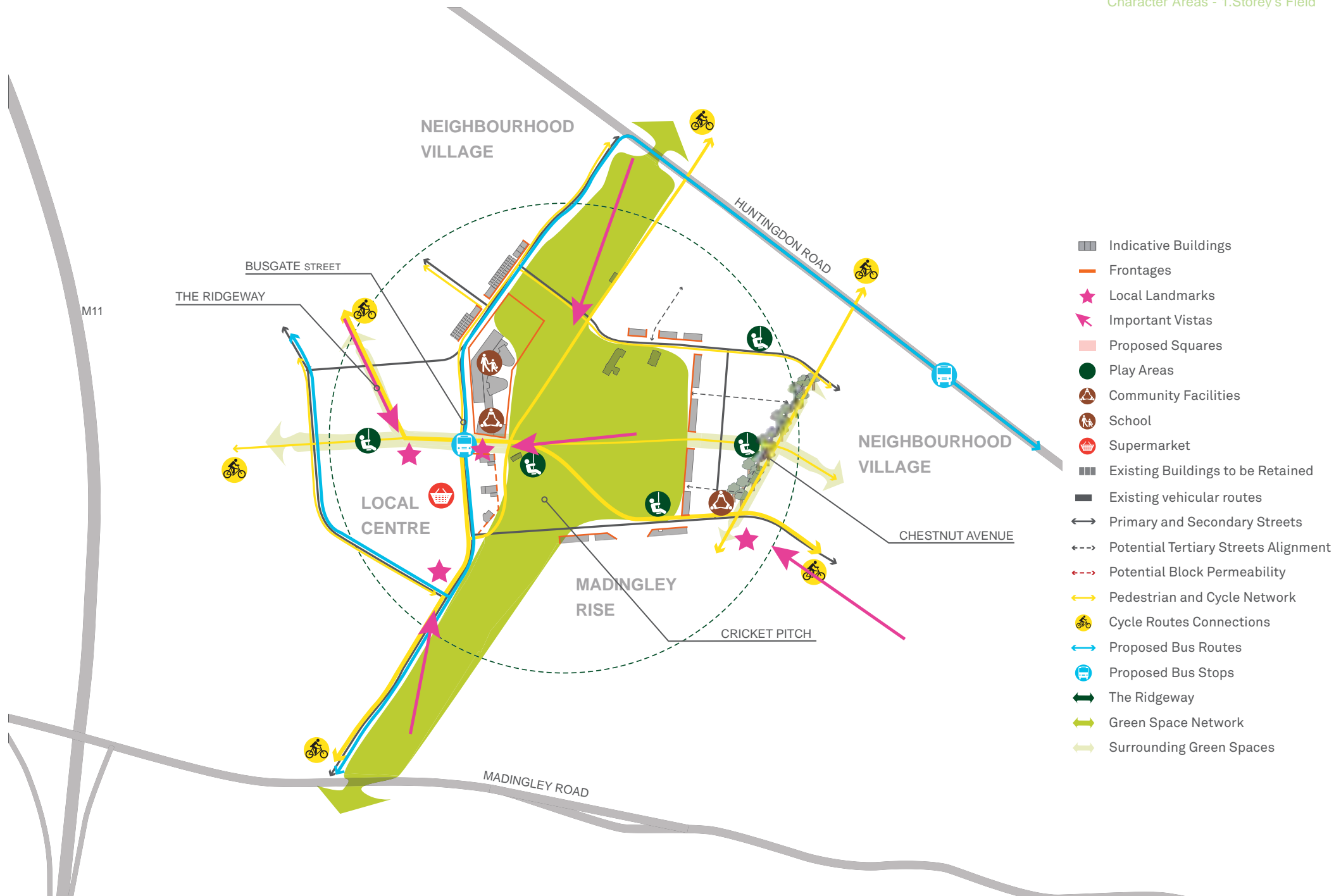


Figure 4.1.2 Character of Storey's Field

# PLACE-MAKING PRINCIPLES

For the Land Use, Infrastructure and Sustainability layers, the designers must refer to Site Wide Design Codes as set out in Chapter 3.

For Urban Structure, Access & Movement and Landscape layers, designers should follow the Site Wide Design Codes for the generic principles and the specific intentions set out below within the character area chapter. These form the MANDATORY aspects of the design codes.

## Urban Structure

Given its development context, Storey's Field comprises of three block types: Hybrid, Linear and Special blocks, responding to the landscape which is at the centre of this character area, opening up views towards the landscape and managing the transition between the landscape and adjacent character areas.

Please continue to page 158-159 for more details. Also refer to Table 4.1.1 opposite for block typologies reference from Chapter 3.



Figure 4.1.3 Urban Structure

## Access and Movement

A Primary Street runs along the Western perimeter connecting Huntington Road to the Local Centre. Secondary streets connect East-West between Neighbourhood Village, Local Centre and Madingley Rise.

Please refer to Table 4.1.1 opposite for street typologies reference from Chapter 3.

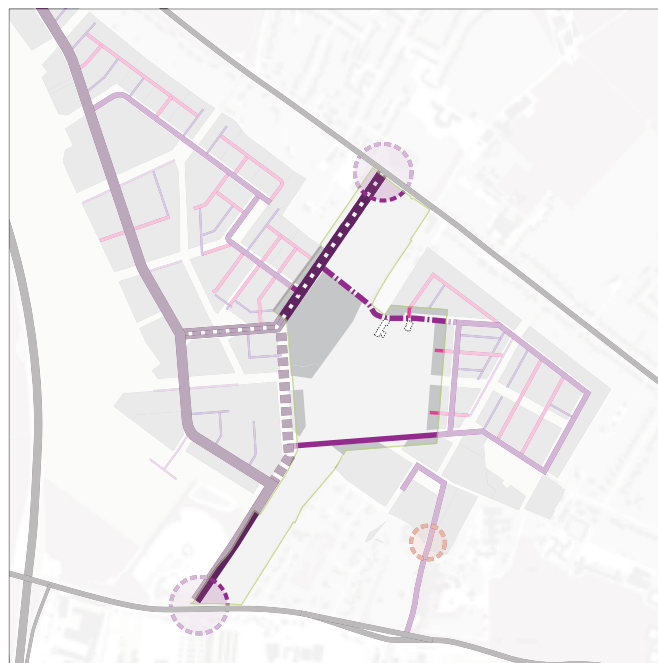


Figure 4.1.4 Street Hierarchy

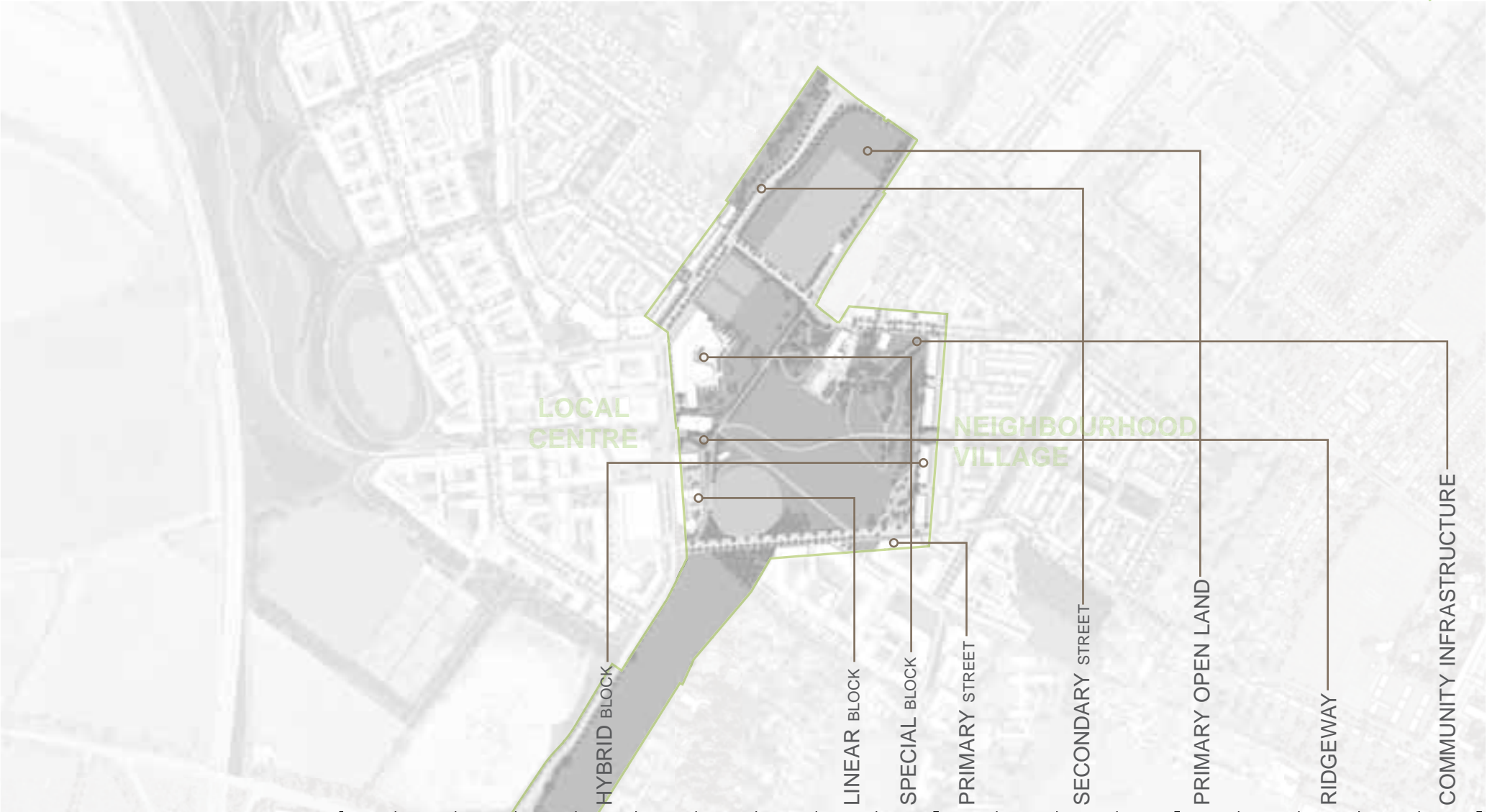
## Landscape

Storey's Field is the focus of this character area and is classified as part of the Primary Open Land, the Girton Gap, within the *Description of Development*. Please see Chapter 3, Section 3.4 Landscape, The Girton Gap on page 90. It consists of a cricket pitch and pavilion, sports fields and play areas. The Primary school playing fields are also adjacent to this large green space.

Please refer to Table 4.1.1 opposite for detailed landscape typologies reference from Chapter 3.



Figure 4.1.5 Landscape and Key Spaces



CHARACTER AREAS	01	02	03	04	05	06	07	08	09	10	01	02	03	04	01	02	03	04	05
	BLOCKS										STREET				LANDSCAPE				
STOREY'S FIELD					●				●	●	●		●		●		●		●
Refer to pages in Site Wide					p40				p44	p45	p56		p60		p90		p102		p116

Table 4.1.1 Storey's Field Navigation Table

# Block Structure

Storey’s Field character area is composed of a central urban park surrounded by urban blocks on all sides. The school and community centre are to the West of the green whereas it is surrounded by residential uses on all other sides. Blocks are intercepted at regular intervals to allow for views into the park.



Figure 4.1.6 Block Structure

# Frontage

Although the central green in Storey’s Field is well defined by built form on all sides, the frontages of the same are quite varied. The school and community centre are special blocks whereas on all other sides it is well contained by perimeter residential and non-residential blocks where the frontage depends on the typologies.



Figure 4.1.7 Frontages



## Height and Massing

Massing around Storey's Field responds to the urban park on one hand and the surrounding development on the other. The perimeter blocks to the three sides are generally four storeys to contain the scale and offer views of the park to the inhabitants. The school and community centre are lower buildings, generally two storeys.

- 1/2 storeys generally
- 2 storeys generally
- 2/3 storeys generally
- 3 storeys generally
- 3/4 storeys generally
- 4 storeys generally
- Landmarks

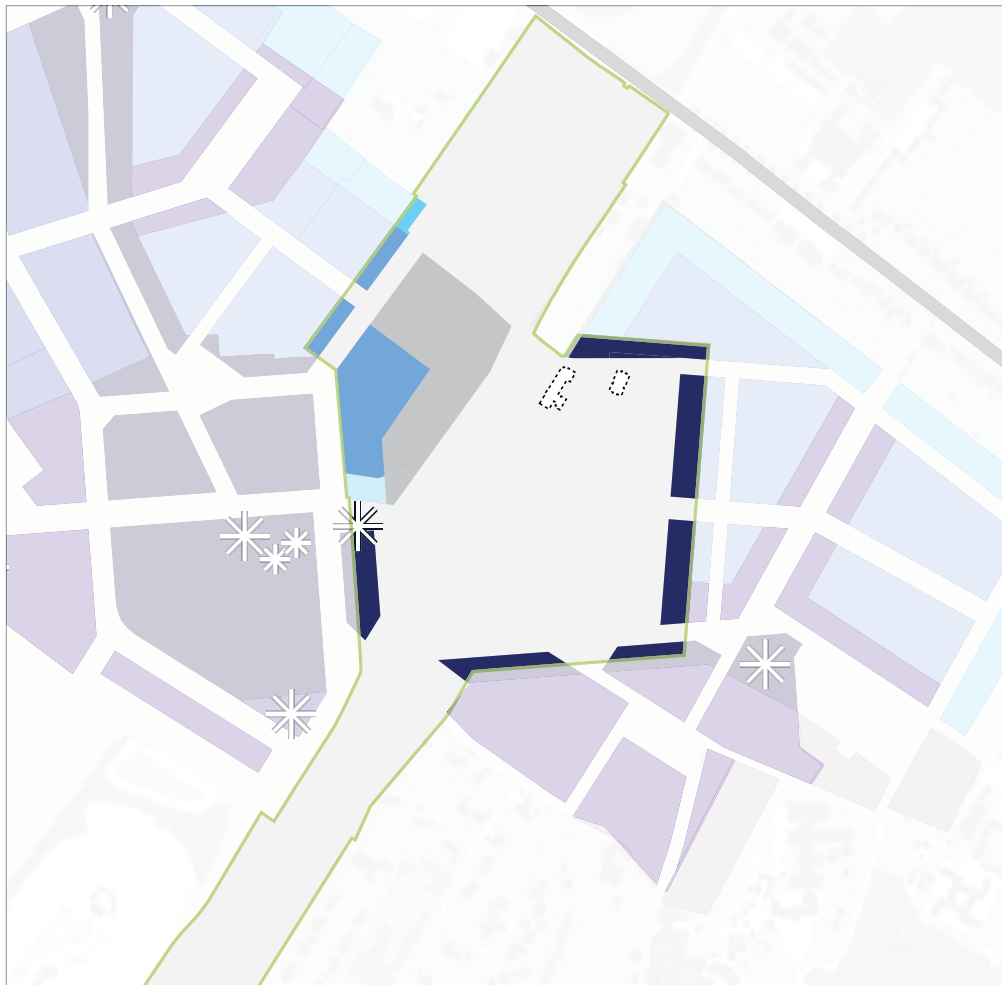


Figure 4.1.8 Massing and Landmarks

## Block Typology

Storey's Field consists of perimeter blocks that are hybrid or non-residential in nature, special blocks such as school and community centre and linear block that responds to the green edge on one side and street on the other.

- Block Type 1 - Development Edge
- Block Type 2 - Access Mews
- Block Type 3 - Central Communal Courtyard
- Block Type 4 - Back to Back Rear Garden
- Block Type 5 - Hybrids
- Block Type 6 - Residential Perimeter Block
- Block Type 7 - Non-Residential Perimeter
- Block Type 8 - Local centre Mixed Use
- Block Type 9 - Linear Block
- Block Type 10 - Special Block

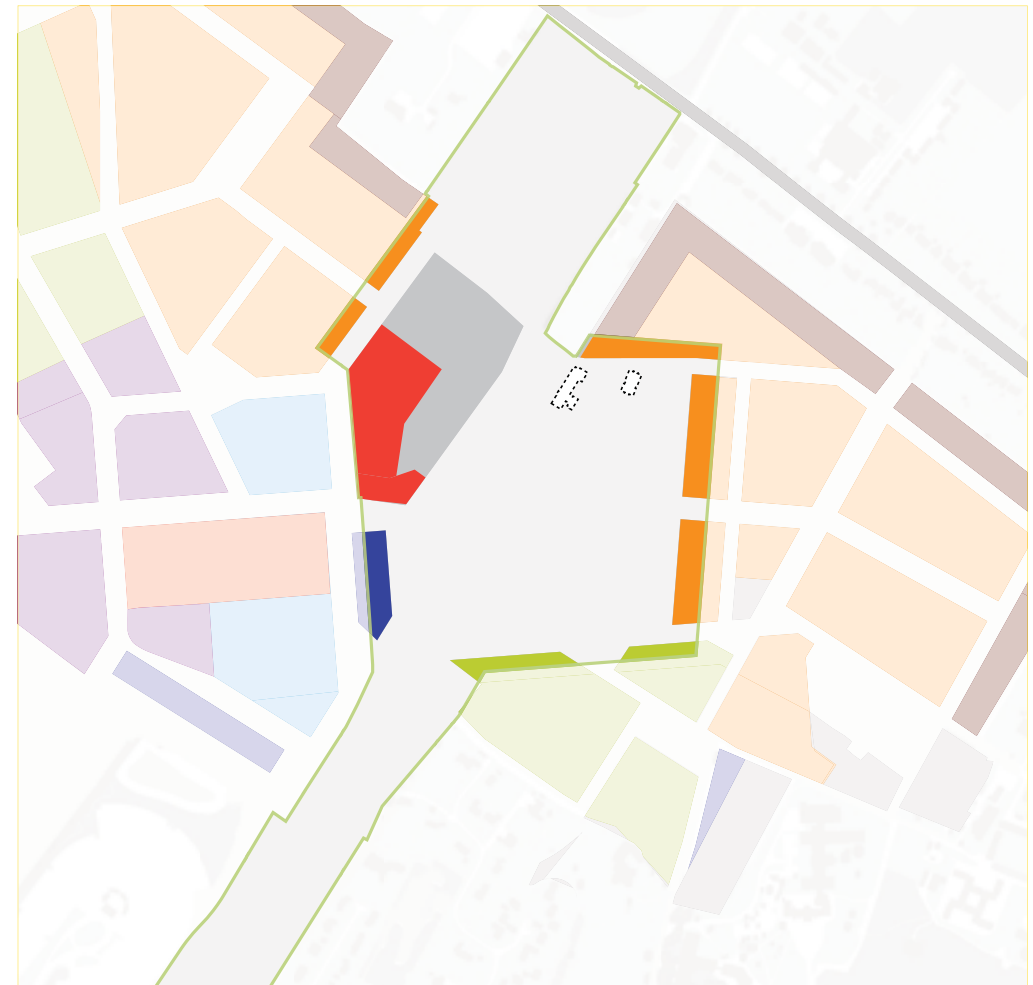
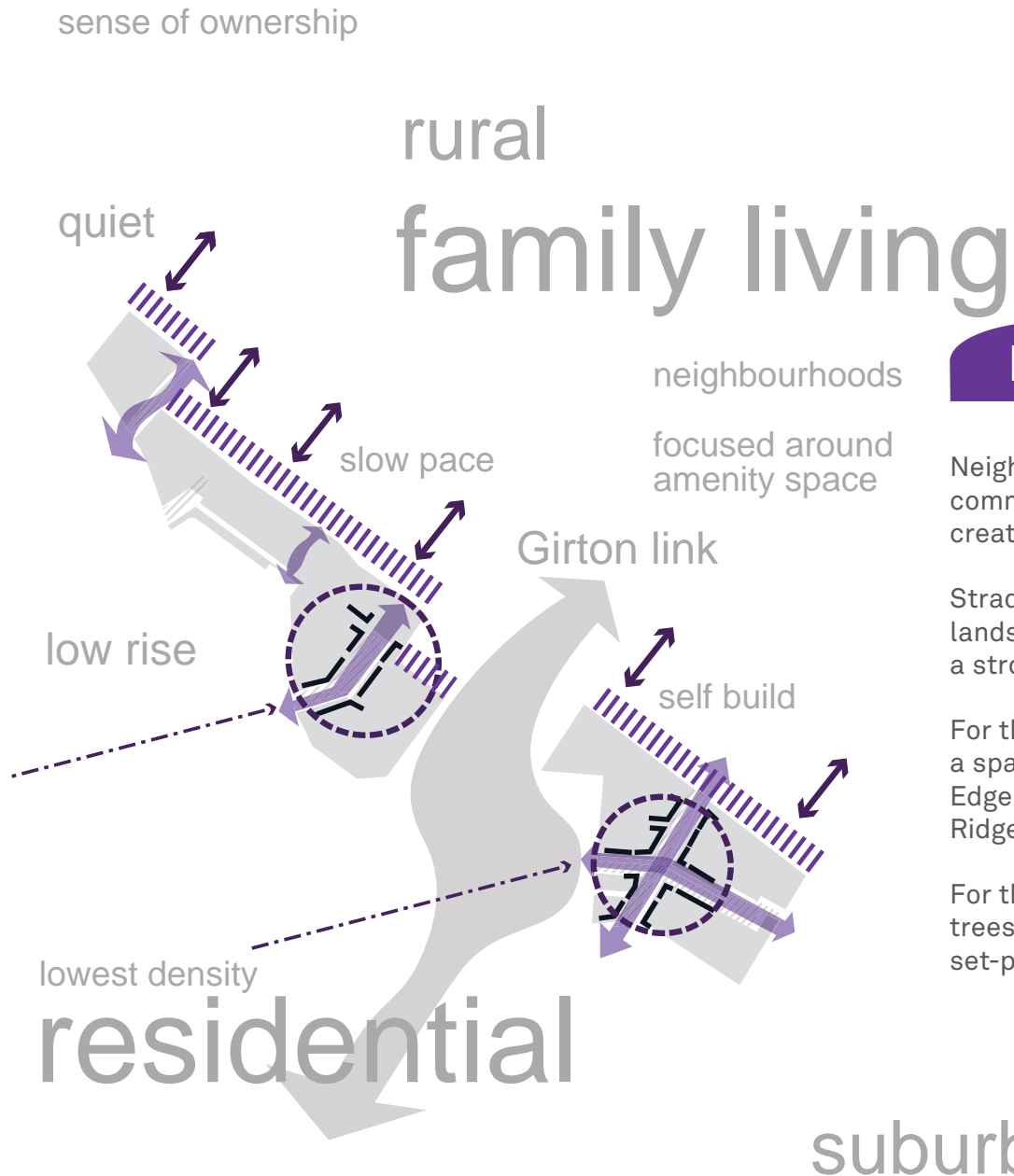


Figure 4.1.9 Block Types



North West Cambridge

4



## NEIGHBOURHOOD VILLAGE

Neighbourhood Village Character Area comprises primarily residential communities that back onto existing houses on Huntingdon Road to create a good urban edge, respecting the privacy of local residents.

Straddling Storey's Field, each of these communities has significant landscape components which define their unique character and reinforce a strong sense of place.

For the community north of Storey's Field, a green urban square provides a spatial and vision focus for local residents. This is linked to the Western Edge through a Green Corridor and vistas are set up between The Ridgeway and Neighbourhood Village character areas.

For the community south of Storey's Field, the existing horse chestnut trees are powerful set-pieces and the linear park that criss-cross this set-piece create memorable serial vision within this neighbourhood.

Figure 4.2.1 Concept of Neighbourhood Village



Front doors and private thresholds



Sustainable lifestyle



Family living



Quiet, comfortable, contemplative spaces



Low-rise, low-density residential frontages



Back gardens - private amenity space



Play areas - communal amenity space



Streets and spaces in between - fine grain fabric



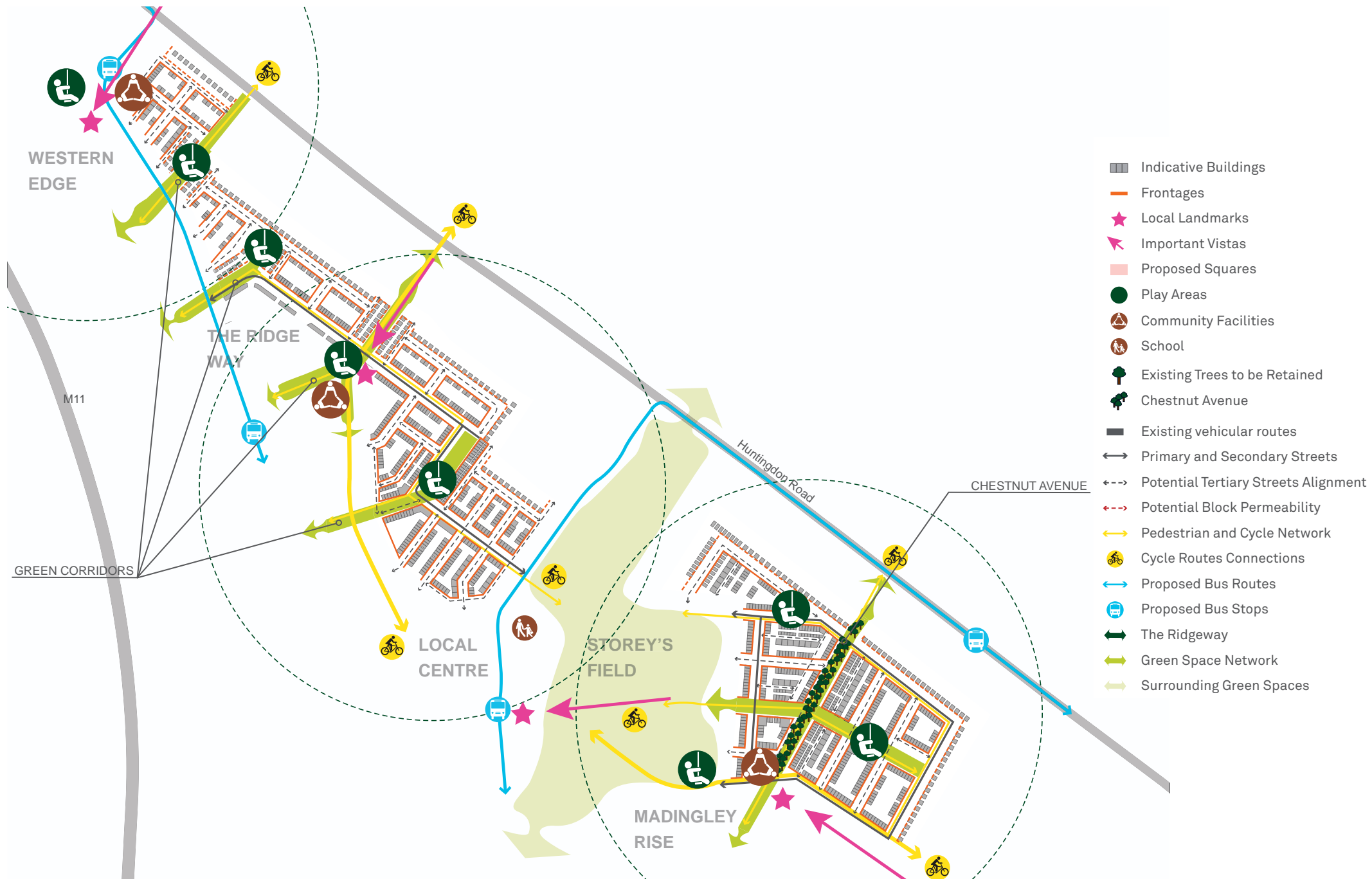


Figure 4.2.2 Character of Neighbourhood Village

## PLACE-MAKING PRINCIPLES

For the Land Use ,Infrastructure and Sustainability layers, the designers must refer to Site Wide Design Codes as set out in Chapter 3. For Urban Structure, Access & Movement and Landscape layers, designers should follow the Site Wide Design Codes for the generic principles and the specific intentions set out below within the character area chapter. For relevant character areas , landscape layer has been further detailed to set out the principles for Key Spaces. These form the MANDATORY aspects of the design codes.

### Urban Structure

Given its development context, Neighbourhood Village comprises a range of block types, from and frontage to:

- manage the transition from Huntingdon Road edge
- create good scale urban forms around key spaces
- set up clear distinction between public and private domain through the use of a variety of perimeter blocks.

Please continue to page 166-167 for more details. Also refer to Table 4.2.1 opposite for block typologies reference from Chapter 3.

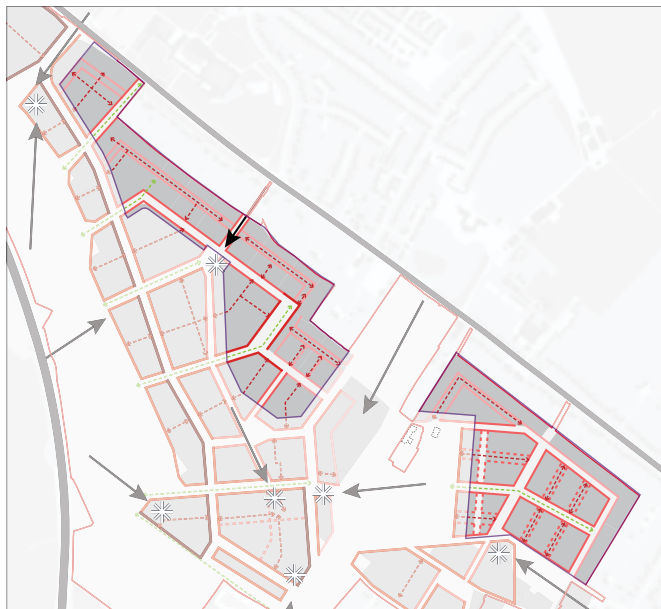


Figure 4.2.3 Urban Structure

### Access and Movement

Each part of the neighbourhood is well connected with the vehicular network through a series of primary, secondary and tertiary streets. Equally strong is a network of pedestrian and cycle routes that connect Neighbourhood Village with adjacent character areas.

Refer to Table 4.2.1 opposite for street typologies reference, also Street Hierarchy and Typology on page 51 and Pedestrian and Cycling on page 70 in Chapter 3.

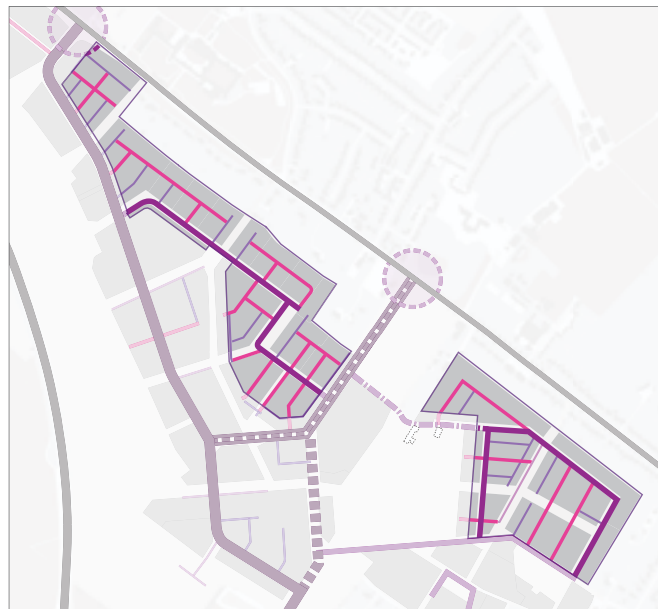


Figure 4.2.4 Street Hierarchy

### Landscape

In addition to strong streetscape design, special landscape features in the form of Green Corridors and Play areas are part of this character area.

The neighbourhoods are focussed around a park with play areas located in close proximity. A cluster of existing trees have been retained on site to form the Chestnut Avenue (See page 169). Neighbourhood Park forms the heart of another small residential cluster north of Storey's Field (See page 170).

Refer to Table 4.2.1 opposite for landscape typologies reference from Chapter 3.

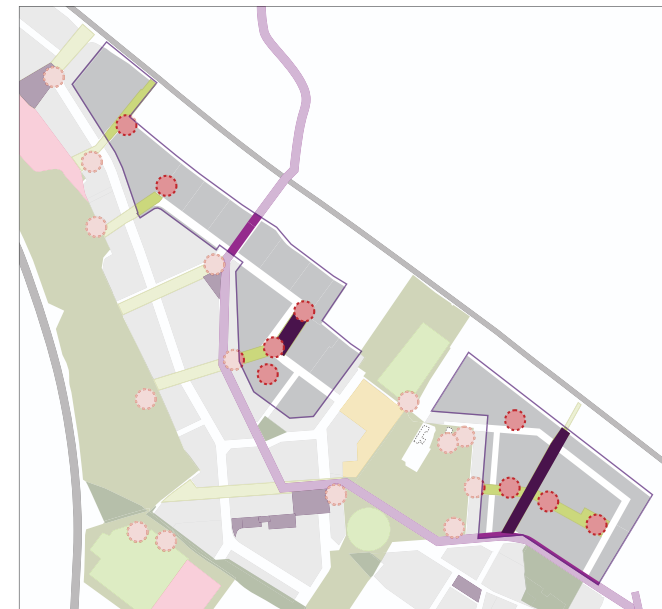
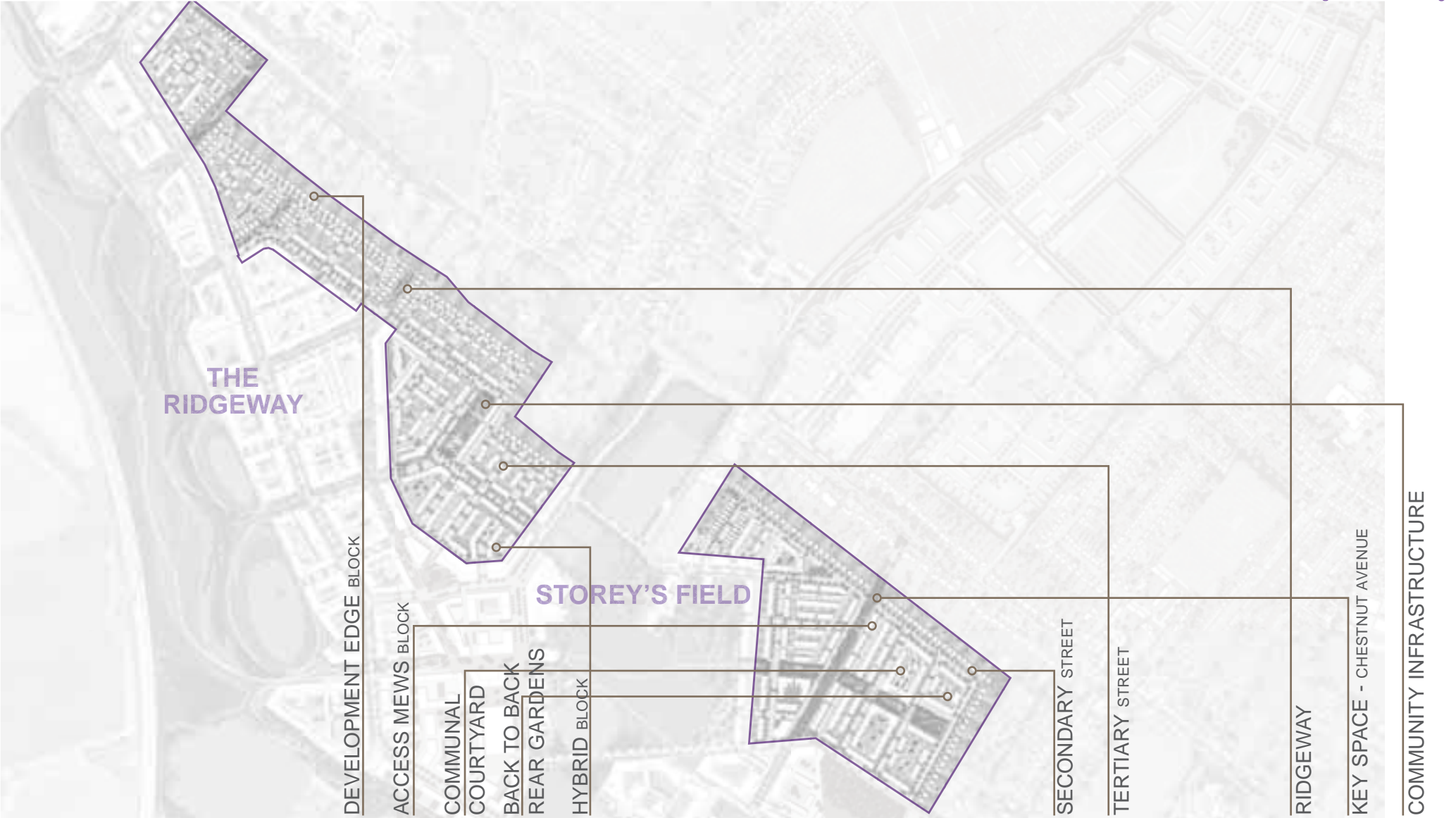


Figure 4.2.5 Landscape and Key Spaces



CHARACTER AREAS	01	02	03	04	05	06	07	08	09	10	01	02	03	04	01	02	03	04	05
	BLOCKS										STREET				LANDSCAPE				
NEIGHBOURHOOD VILLAGE	●	●	●	●	●								●	●		●	●	●	●
Refer to pages in Site Wide	p36	p37	p38	p39	p40								p60	p64		p92	p102	p82	p116
Refer to pages in Character Area																	p169	p170	

Table 4.2.1 Neighbourhood Village Navigation Table

# Block Structure

Within Neighbourhood Village character area, the urban blocks are defined by secondary and tertiary streets. Further permeability should be achieved to maintain appropriate grain and scale as indicated by red arrows below.

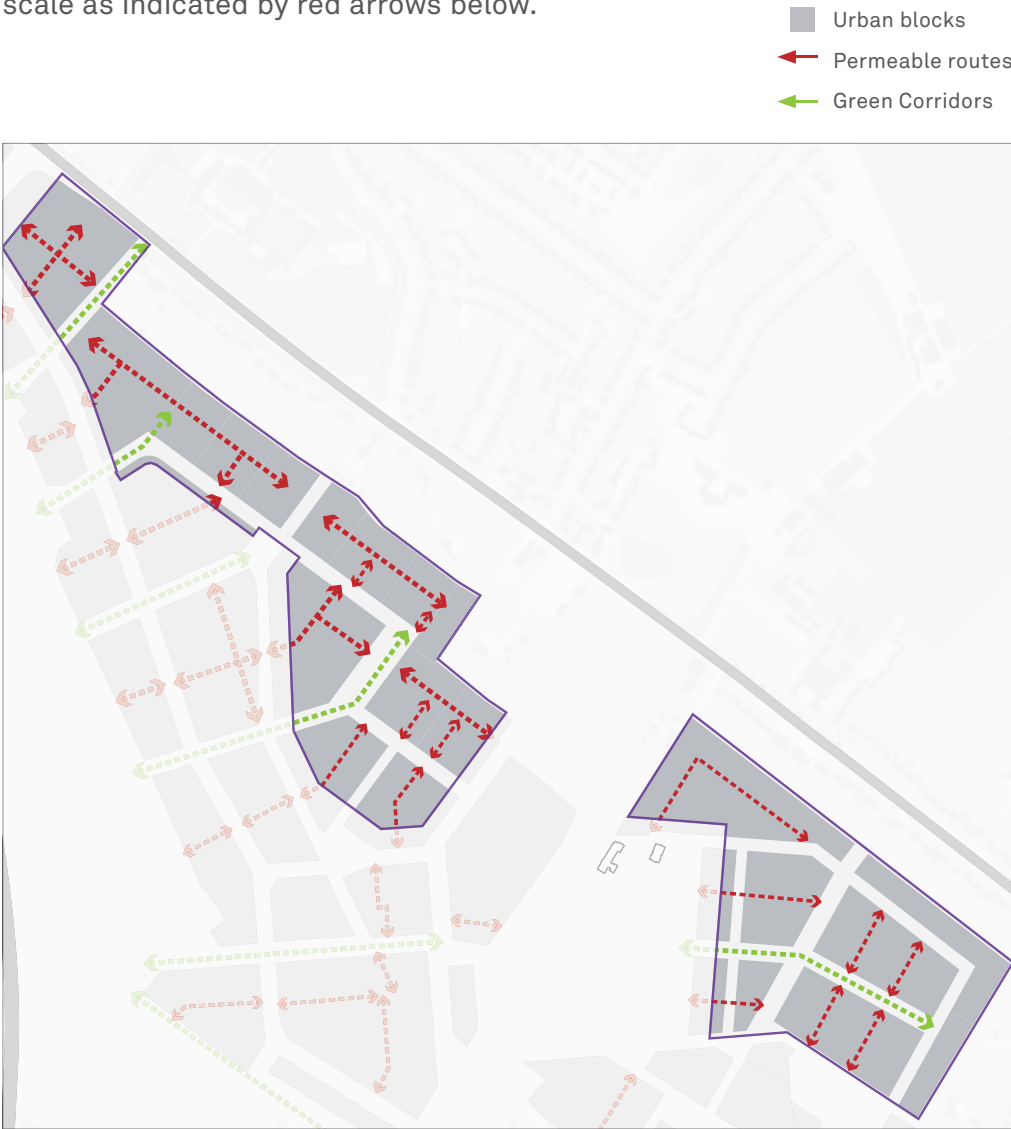


Figure 4.2.6 Block Structure

# Frontage

The frontages respond to the use, street hierarchy and surrounding context. Towards the urban core to the West, the frontages has a coarse grain, whilst frontages towards the development fringe, along the rear of Huntingdon Road properties has a finer grain.

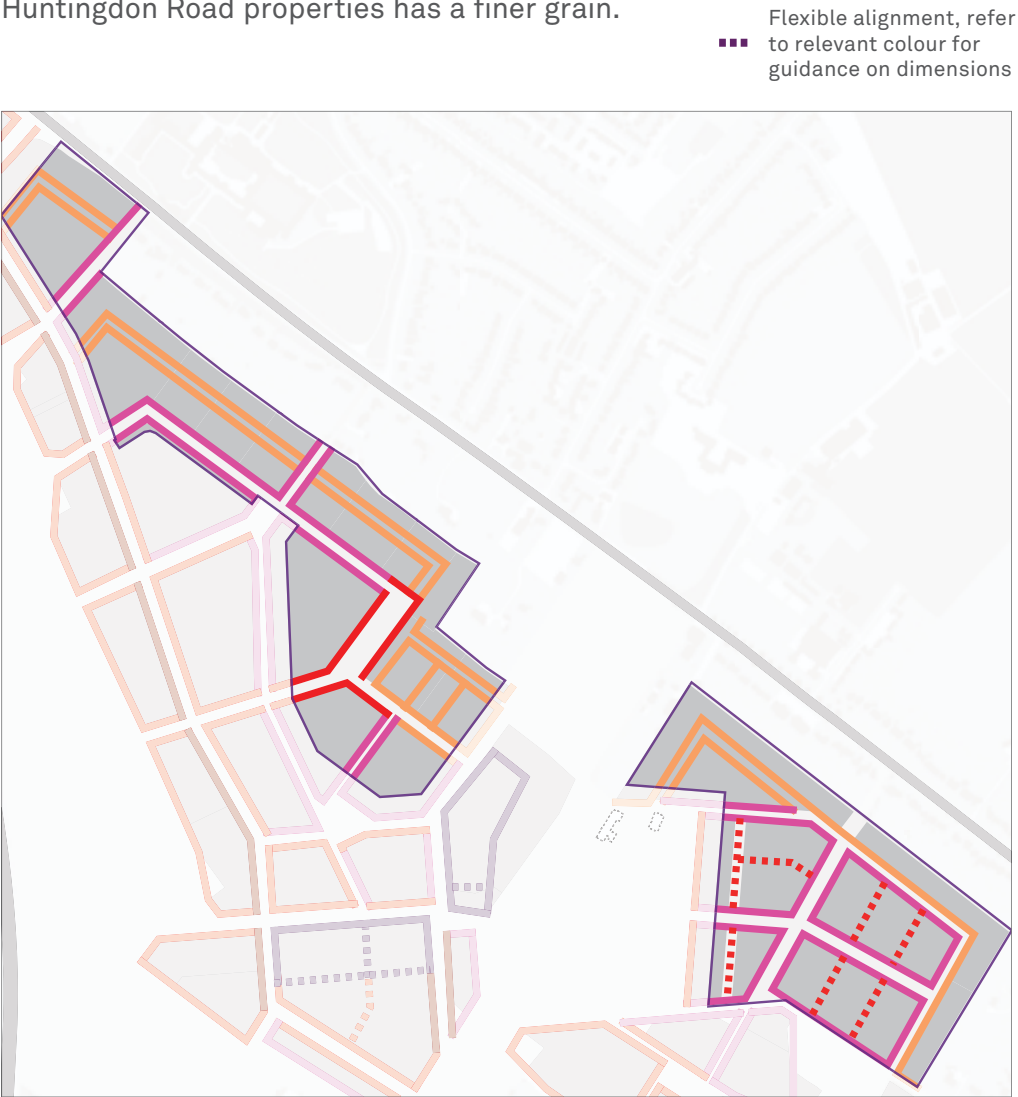


Figure 4.2.7 Frontages



## Height and Massing

Building heights respond to the street type and surrounding context. In the case of Neighbourhood Village, taller buildings frame the key spaces and key square.

- 1/2 storeys generally
- 2 storeys generally
- 2/3 storeys generally
- 3 storeys generally
- 3/4 storeys generally
- 4 storeys generally
- Landmarks

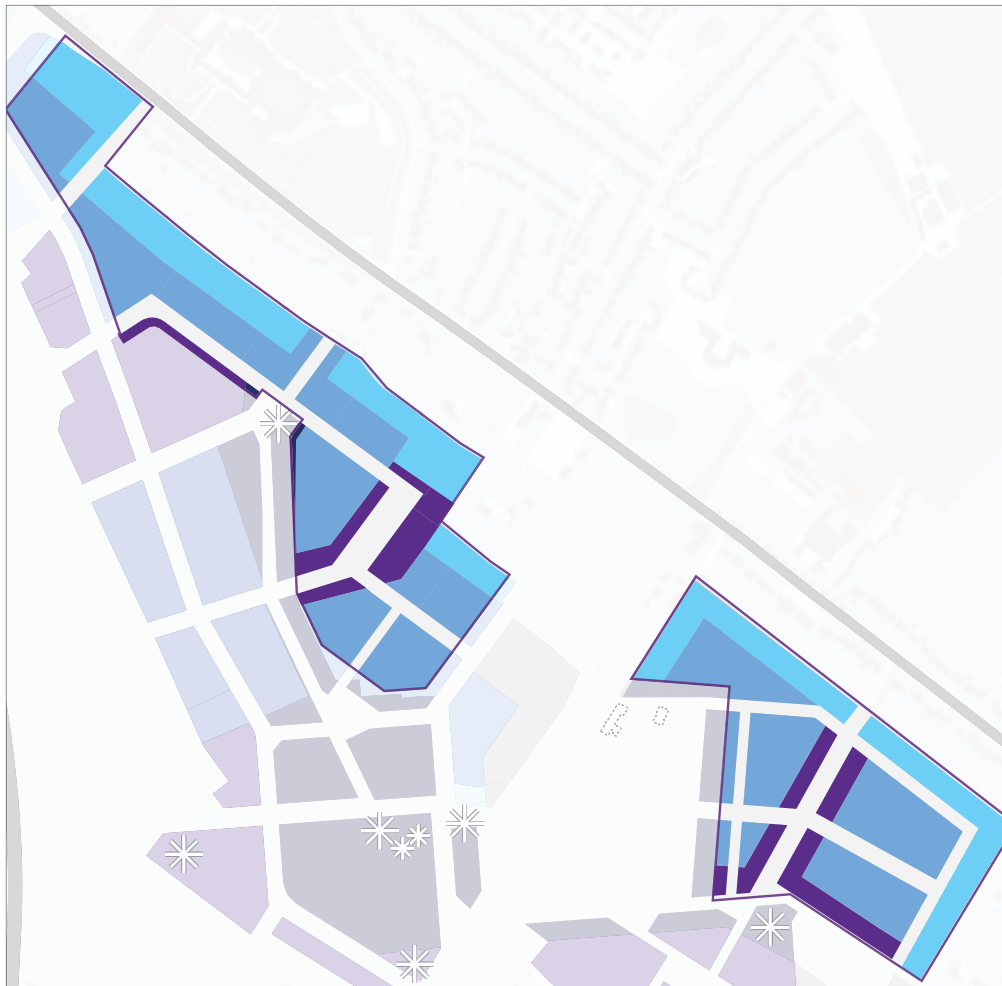


Figure 4.2.8 Massing and Landmarks

## Block Typology

The Neighbourhood Village character area is less urban than the Local Centre. Development Edge blocks back onto Huntington Road properties and the main urban area comprise a variety of perimeter blocks.

- Block Type 2 - Access Mews
- Block Type 3 - Central Communal Courtyard
- Block Type 4 - Back to Back Rear Garden
- Block Type 5 - Hybrids
- Block Type 6 - Residential Perimeter Block
- Block Type 7 - Non-Residential Perimeter
- Block Type 8 - Local centre Mixed Use
- Block Type 9 - Linear Block
- Block Type 10 - Special Block

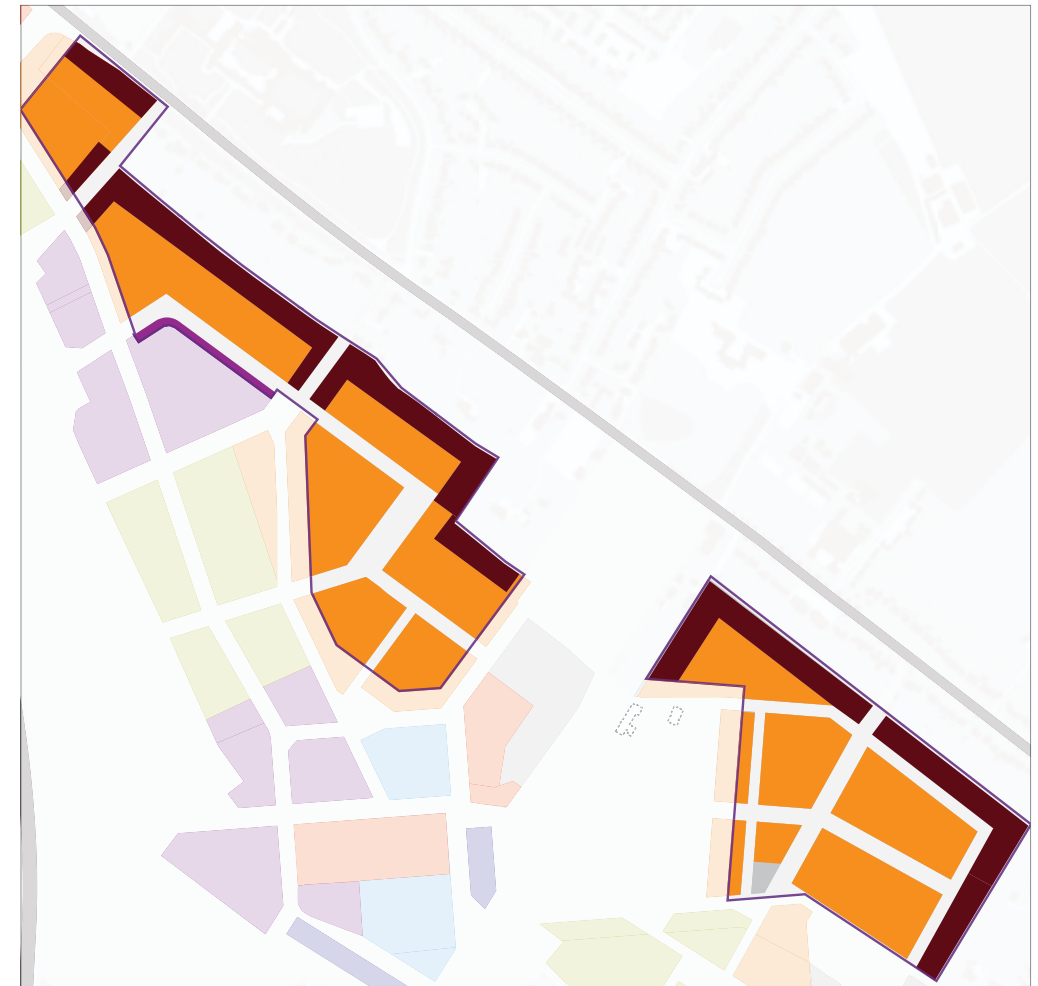









Figure 4.2.9 Block Types

## Landscape Typology

There are a number of Green Corridors that connect this neighbourhood with the rest of the areas. A number of play areas are also provided at walkable distances.

Please refer to Chapter 3, Section 3.4 Landscape for the site wide landscape aspiration, with focus on Table 3.14 Landscape Design Consideration Table - Key Spaces on page 82, The Green Corridors on page 92 and Youth Facilities and Children's Play on page 116.

Further parameters are set out in Parameter Plan 03, See Chapter 7, Appendix B, Figure 7.31 Open Land and Landscape Areas Parameter Plan on page 281.

-  Primary open space
-  Secondary open space
-  Existing open space, woodland and tree cover retained
-  The Ridgeway (dedicated cycle & pedestrian spine)
-  Key spaces
-  Play Areas
-  Neighbourhood Play Area

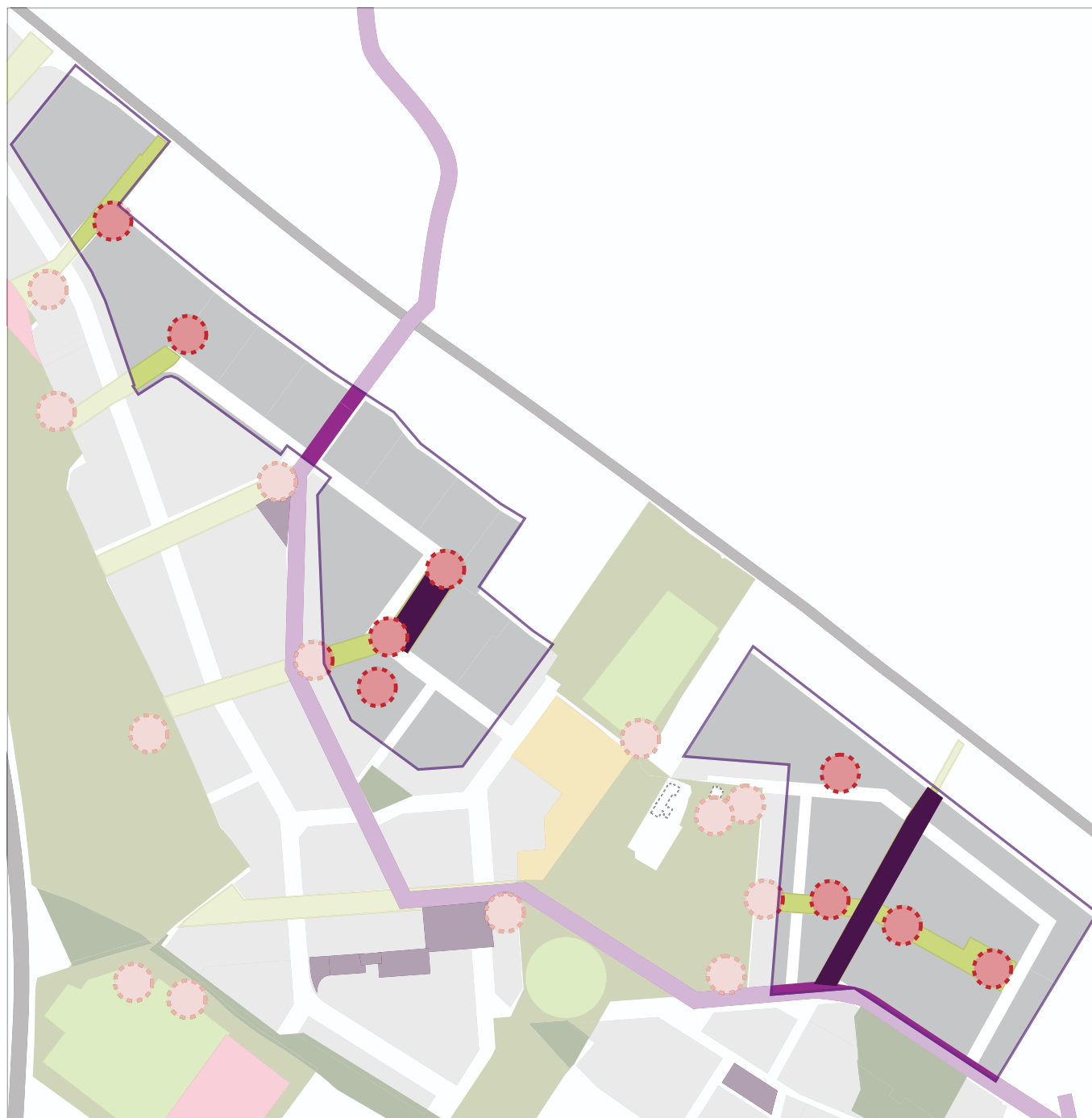


Figure 4.2.10 Landscape and Key Spaces in Neighbourhood Village

## Key Spaces - Horse Chestnut Avenue

Horse Chestnut Avenue is located to the east of the North West Cambridge development and forms an intrinsic part to the overall pedestrian and cycle network. Existing mature horse chestnut trees grow along the entire length of the avenue, forming a composed and established route into the development. The route takes pedestrians and cyclists through a comprehensive residential quarter of high quality family housing and south towards the ecological Green Corridor and Storey's Way.

Horse Chestnut Avenue will play a significant role in forming the interim connections strategy, enabling connections with adjacent neighbourhoods before the entire development is completed.

The existing Horse Chestnuts, whilst of significant amenity value, have issues with disease. In accordance with arboricultural advice and subject to planning approval, these will be managed appropriately to maintain the character and setting of this avenue. Please refer to Contextual Plan: Tree Preservation Order (Chapter 7, Appendix B, Figure 7.25 on page 275) in the *Description of Development*.

See Chapter 3, Section 3.3 Access and Movement, Pedestrian and Cycling on page 70.

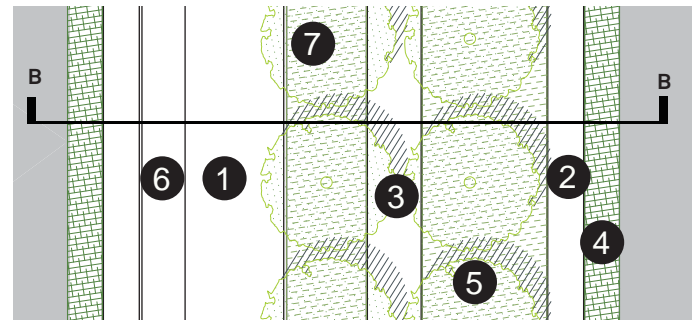


Figure 4.2.11 Horse Chestnut Avenue Illustrative Plan

Dimensions		
1	Road Lane Width	5.5m
2	Footpath Width	2.0m Min.
3	Cycle Lane Width	3.0m (2 way)
4	Planted Privacy Strip Width	2.0m
5	Tree Spacing	To be determined by reference to BS5837:2012. Consideration must be taken for the trees rootzone to avoid any encroachment onto adjacent buildings, roads, paths and infrastructure.  Buildings should be setback from the trees by 20m to respect the Root Protection Areas and allow enough space to plant between them and slightly further back from the cycle route. This setback can be less, dependent on arboricultural advice.  Min. 2.25m clear stem height. 1.5m min. from path/ road edges.
6	Parking Lay-By Width	2.4m Min.
7	Planting Width	2.0m Min Varies

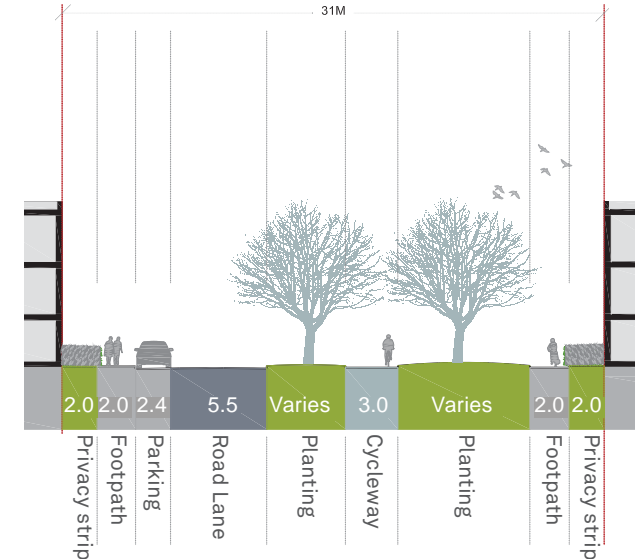


Figure 4.2.12 Illustrative Section B-B

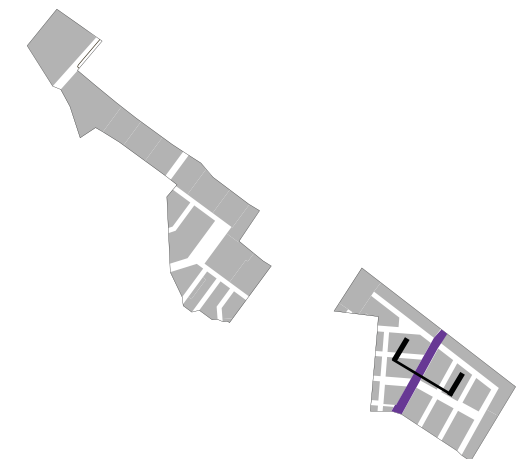


Figure 4.2.13 Location Plan of Horse Chestnut Avenue

Table 4.2.2 Horse Chestnut Avenue Design Dimensions

## Key Spaces - Neighbourhood Park Play Areas

The Neighborhood Park has pedestrian and cycle connections to the Western Edge Landscape through the third 'Green Corridor' linear parkland to the south.

The primary function of the park is to provide amenity and play space for the adjacent residential community.

Key Principles include:

- Provision for a minimum 650m<sup>2</sup> of 'Neighbourhood Playable Space' which is a playground for all ages of children. For more information refer to 'North West Cambridge Design, Access and Landscape Statement March 2012'.
- Ensure that play facilities are diverse and varied, which works alongside the character of the area.
- Provide perimeter play fencing, for safety reasons around areas of play equipment.
- Ensure play equipment, furniture and surfaces meet *BREAAM* standards where possible.
- Provide an edge treatment of native tree and shrub planting to create ecological enhancements. These should be informally arranged.
- Provide grassed areas where possible for amenity use. These can be in the form of meadows or species rich grassland.
- Ensure paths within the park are informal where possible, using bound gravel or other parkland type surfacing.

- Maintain the privacy of adjacent residential / community buildings by providing a planted privacy strip. Minimum 2.0m.
- Besides the neighbourhood park, a number of Children and Teenage Recreation Areas and Neighbourhood Play Areas are proposed within the Green Corridors in this character area. Please see Youth Facilities and Children's Play on page 116 for further guidance on play areas.
- Ensure play areas are well overlooked for safety reasons

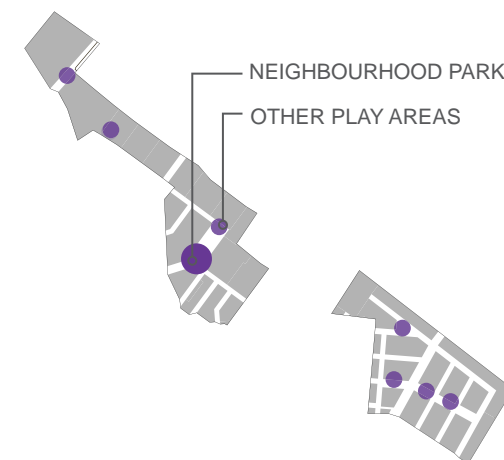


Figure 4.2.14 Location Plan of Play Areas



Precedent Images of Play Areas

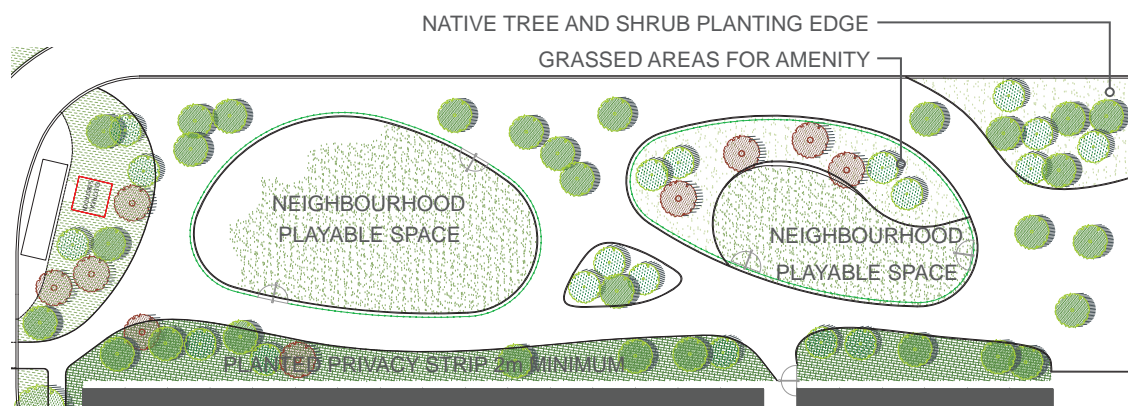


Figure 4.2.15 Neighbourhood Park Play Area Illustrative Plan





Figure 4.2.16 Concept Sketch of Neighbourhood Park Play Area



North West Cambridge

4



## LOCAL CENTRE

The Local Centre is the very heart of this new piece of city. Anchored by the market square, the Local Centre forms the crossroads of movement corridors which bring local communities together in their daily lives. The Ridgeway connects the Local Centre with Storey's Field and a threshold space is formed at the intersection. Positioned immediately next to the Local Centre is the cricket pitch and other sports facilities which bring local communities together.

Shops, foodstore, hotel, primary school, cafe, community facilities and senior care create a focus not only within North West Cambridge but within the wider area of Storey's Way, West Cambridge and to a lesser extent Girton village. A critical mass of local residents support the public transport network and local retail, bringing activities to the Local Centre during the evenings and weekends.

Figure 4.3.1 Concept of Local Centre





Sustainable design



Iconic architecture as local landmark



School for the curious minds



Nursery for the young residences



Amenity for the young post-doctorate family



Market square for local produce



Play area



Stalls on market days



Local retail for the North West Cambridge community



Multi-cultural community



Local Centre as the community focal point



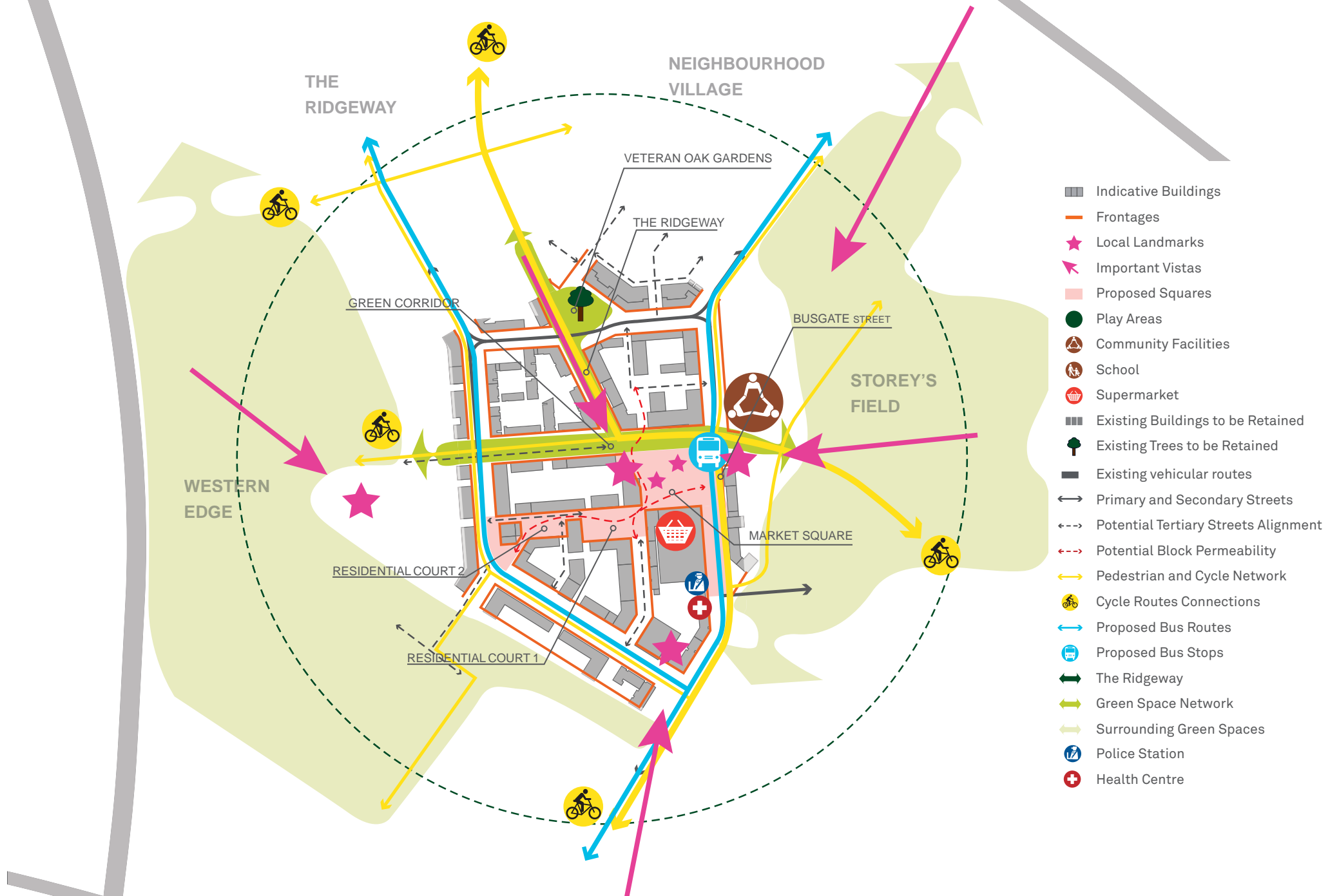


Figure 4.3.2 Character of Local Centre

## PLACE-MAKING PRINCIPLES

For the Land Use, Infrastructure and Sustainability layers, the designers must refer to Site Wide Design Codes as set out in Chapter 3. For Urban Structure, Access & Movement and Landscape layers, designers should follow the Site Wide Design Codes for the generic principles and the specific intentions set out below within the character area chapter. For relevant character areas, the landscape layer has been further detailed to set out the principles for Key Spaces. These form the MANDATORY aspects of the design codes.

### Urban Structure

Local Centre comprises a range of block types, form and frontage to:

- form the heart of the development with maximum density and uses within site - the block typologies and frontages respond to this character
- create good scale urban forms around key spaces
- set up clear distinction between public and private domain through the use of a variety of perimeter blocks.

Please continue to page 178-179 for more details. Also refer to Table 4.3.1 opposite for block typologies reference from Chapter 3.

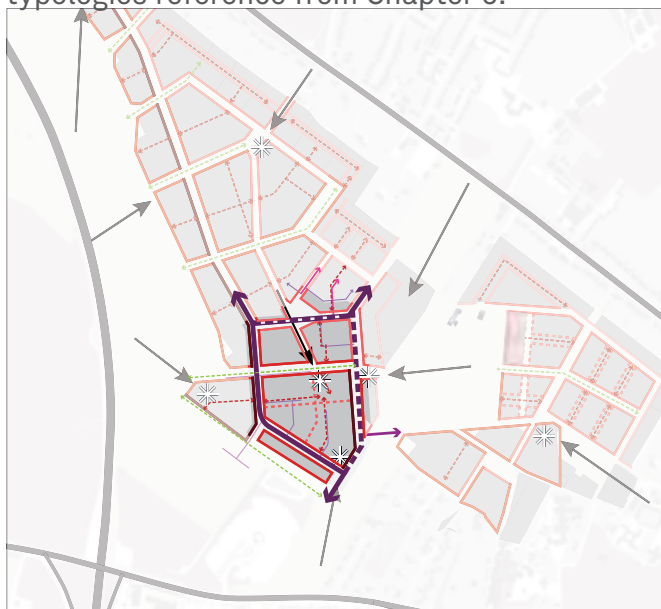


Figure 4.3.3 Urban Structure

### Access and Movement

Local Center forms the core of the development and is very well connected to all adjacent neighbourhoods. A primary street runs around the periphery of this character area with a public transport route running North-South on two sides connecting into surrounding areas. The route on the East is Busgate street with very special requirements. The Ridgeway cuts diagonally across from the North connecting to Market Square and runs through to Storey's Field.

Refer to Table 4.3.1 opposite for street typologies reference from Chapter 3.

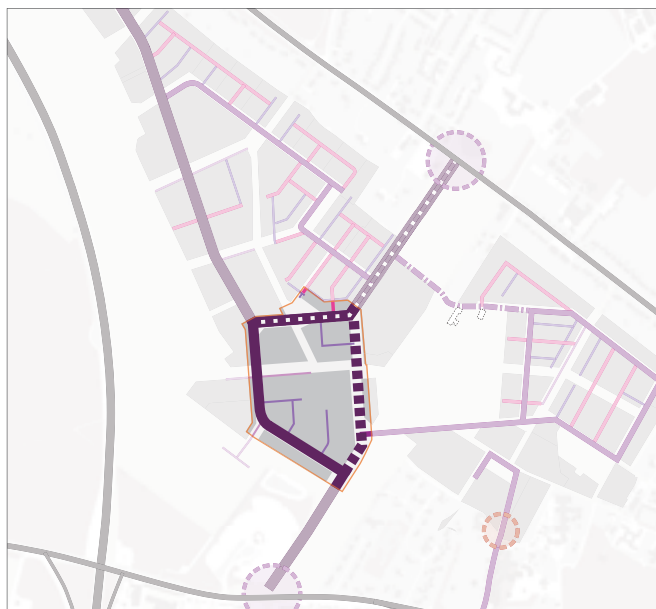


Figure 4.3.4 Street Hierarchy

### Landscape

Local Centre being the heart of the development, contains some of the most important public spaces, such as the Market Square (page 182). In addition this character area comprises of key spaces in the form of squares and parks :

- Veteran Oak Gardens (page 186)
- Residential Court 1 (page 184)
- Residential Court 2 (page 185)
- Green Corridor 1 (Please see Chapter 3 page 92)
- Ridgeway (Please see Chapter 3 page 102)

Refer to Table 4.3.1 opposite for landscape typologies reference from Chapter 3.

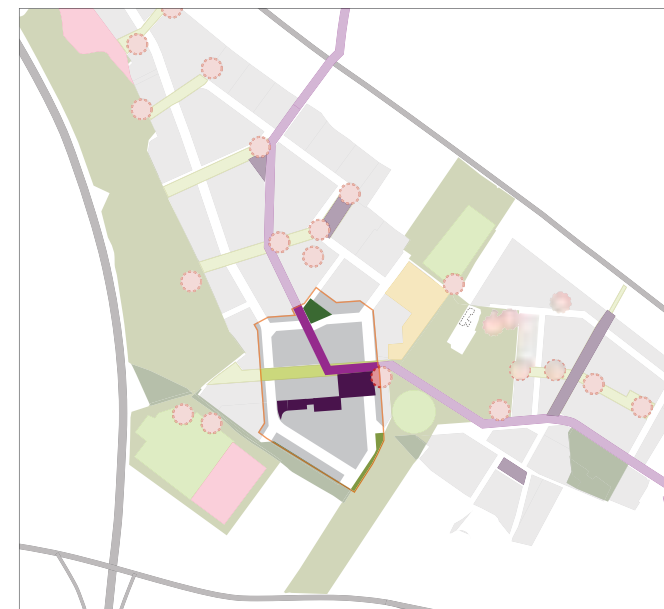


Figure 4.3.5 Landscape and Key spaces



CHARACTER AREAS	BLOCKS										STREET				LANDSCAPE				
	01	02	03	04	05	06	07	08	09	10	01	02	03	04	01	02	03	04	05
LOCAL CENTRE						●		●	●	●	●	●	●	●		●	●	●	●
Refer to pages in Site Wide						p41		p43	p44	p45	p56	p66	p60	p64		p92	p102	p82	p116
Refer to pages in Character Areas																		p180	

Table 4.3.1 Local Centre Navigation Table

# Block Structure

Blocks within Local Centre are formed by the primary street enclosing it on all sides, the Ridgeway cutting diagonally across from the North and Green Corridor 1 passing East-West. There are other important desirable pedestrian routes that must be enabled when shaping the blocks and key spaces.



Figure 4.3.6 Block Structure

# Frontage

The frontages respond to the use, street hierarchy and surrounding context. Local Centre is the densest character area in the development. Strong street frontages create a legible and urban environment. To the East and West perimeter blocks hold the primary street and busgate street and towards the interior squares, Green Corridors and Ridgeway are shaped by strong built form.

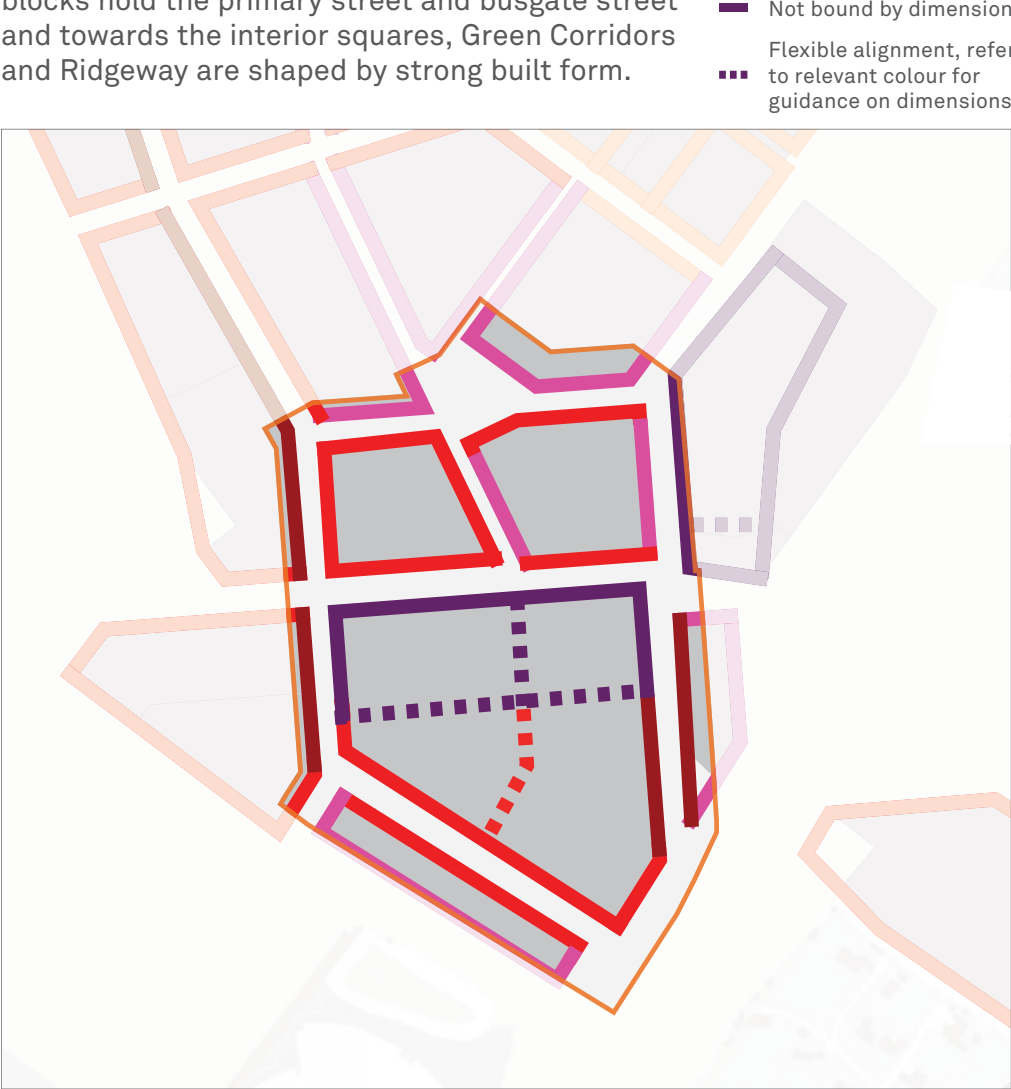


Figure 4.3.7 Frontages



## Height and Massing

Local Centre is urban and dense, with maximum building heights within the development. Landmarks and accents are situated in strategic locations to terminate a vista and provide a legible environment for people navigating the area. Interest is created with varied massing and roof articulations.

- 1/2 storeys generally
- 2 storeys generally
- 2/3 storeys generally
- 3 storeys generally
- 3/4 storeys generally
- 4 storeys generally
- Landmarks

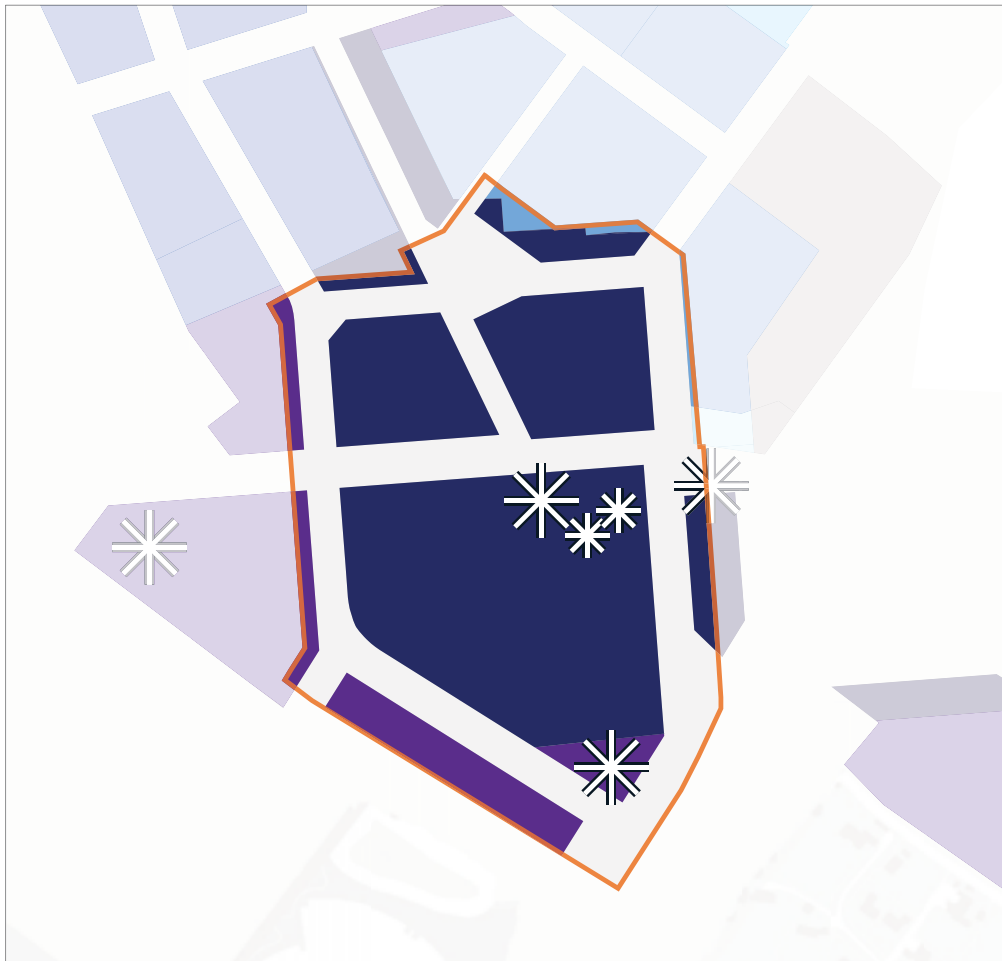


Figure 4.3.8 Massing and Landmarks

## Block Typology

Local Centre consists of a number of perimeter blocks such as the hybrid, residential and local centre mixed use. Allowance is made for special block in the centre to allow for articulated response to market square, Residential Court 1, Green Corridor 1, primary street and the Ridgeway or a special use such as school and community centre.

- Block Type 1 - Development Edge
- Block Type 2 - Access Mews
- Block Type 3 - Central Communal Courtyard
- Block Type 4 - Back to Back Rear Garden
- Block Type 5 - Hybrids
- Block Type 6 - Residential Perimeter Block
- Block Type 7 - Non-Residential Perimeter
- Block Type 8 - Local Centre Mixed Use
- Block Type 9 - Linear Block
- Block Type 10 - Special Block

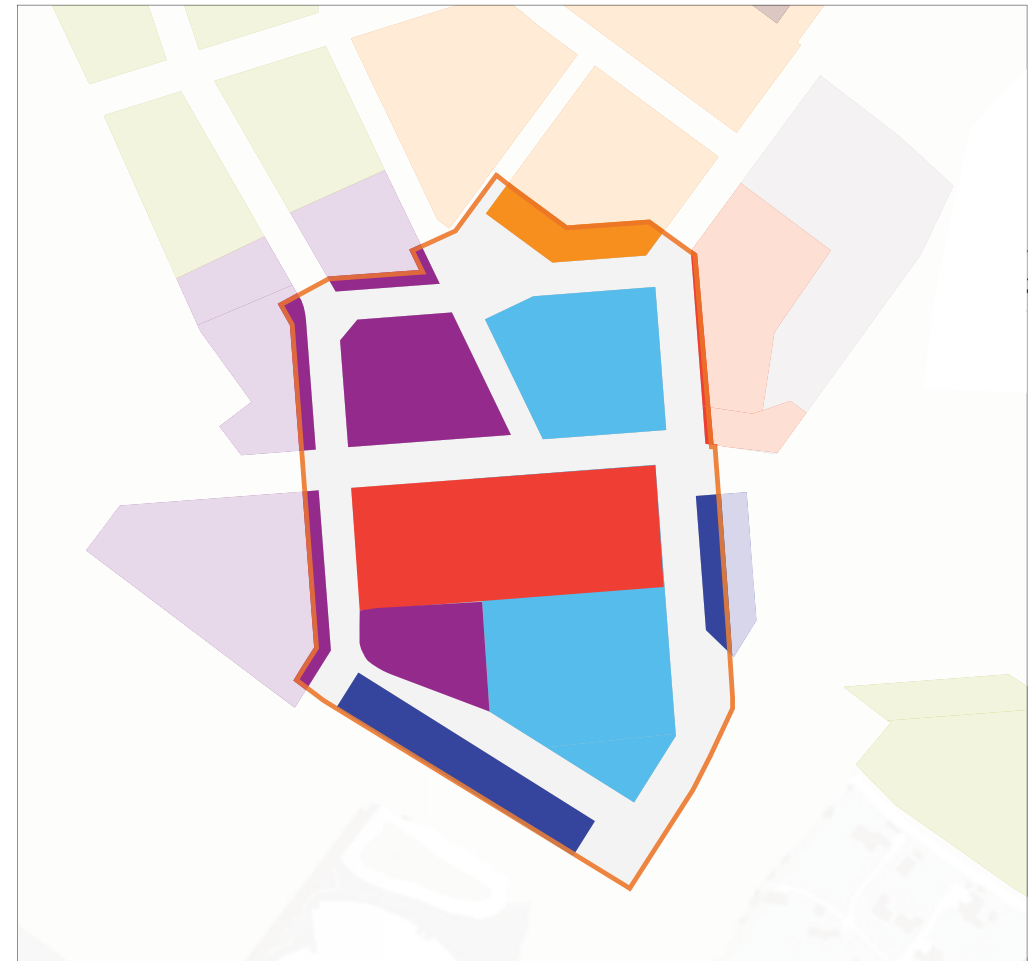









Figure 4.3.9 Block Types

## Landscape Typology

The Local Centre consists of various key spaces within the North West Cambridge masterplan to fulfil its role as the hub of the entire scheme. The Ridgeway from the North connects the residential areas from Ridgeway and Neighbourhood Village to the Market Square. A Green Corridor connects East-West from Western Edge to Storey's Field. The other key spaces are the Veteran Oak Gardens, Residential Court 1 and Residential Court 2 which are described in detail in the following section. There are a number of Green Corridors that connect this neighbourhood with the rest of the areas. A number of play areas are also provided at walkable distances.

Please refer to Chapter 3, Section 3.4 Landscape for the site wide landscape aspiration, with focus on Table 3.14 Landscape Design Consideration Table - Key Spaces on page 82, The Green Corridors on page 92, The Ridgeway Landscape on page 102 and Youth Facilities and Children's Play on page 116. Further parameters are set out in Parameter Plan 03, See Chapter 7, Appendix B, Figure 7.31 Open Land and Landscape Areas Parameter Plan on page 281.

-  Primary open space
-  Secondary open space
-  The Ridgeway (dedicated cycle & pedestrian spine)
-  Allotments
-  Key spaces
-  Children and Teenagers' Recreation Area
-  Landmarks

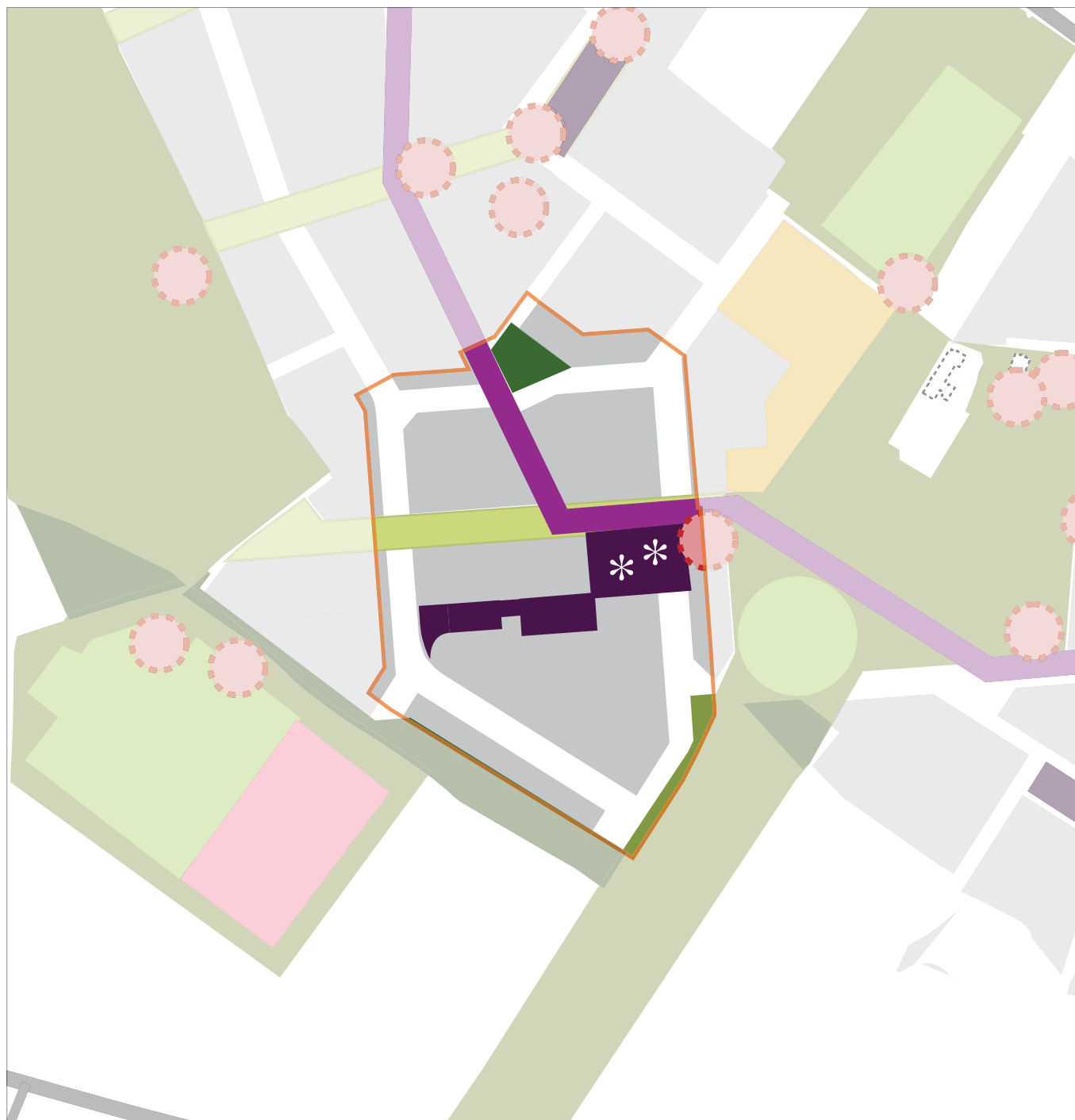


Figure 4.3.10 Landscape and Key Spaces in Local Centre

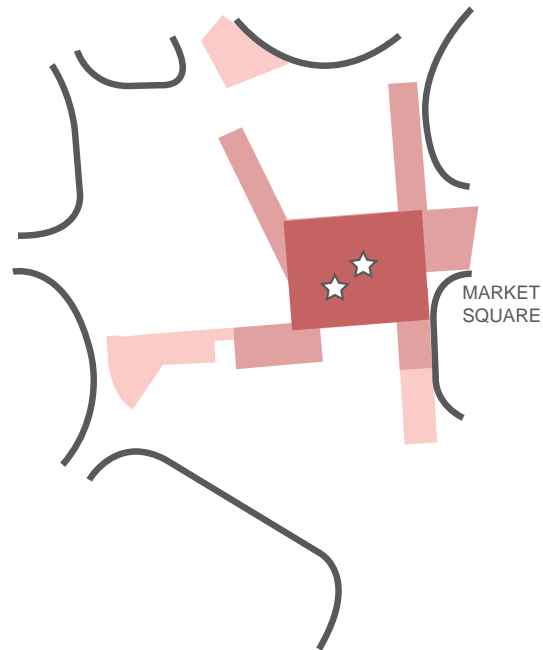


Figure 4.3.11 The Local Centre

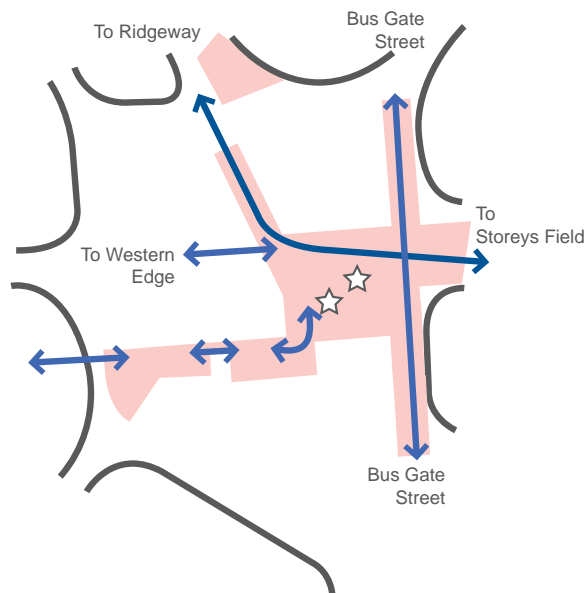


Figure 4.3.12 Key Connections in Local Centre

The Market Square will form the central core of the Local Centre with supporting landmark features as visual anchors.

There will also be subsidiary key spaces which include the Residential Court 1, Residential Court 2 and the Veteran Oak Gardens. The spaces themselves will be interconnected with a seamless transition, with connections towards the Western Edge, Storeys Field, Bus Gate Street, and the Ridgeway.



Precedent Images for Market Square

## Key Spaces - Market Square

The function of the Market Square is a mixed use space which caters for retail, markets, events, civic use, and has good transport, pedestrian and cycle connections. The character will mimic the principles of a traditional market square, with a contemporary design approach.

Key Principles include:

- Allowing sufficient space between retail / foodstore frontage, trees, planting and street furniture to ensure legibility of entrances and window frontages.
- Maintaining key connections through the space, which include- The Ridgeway, Residential Court 1, Green Corridor 1 and Busgate Street.
- Provide a flexible large public space to cater for market stalls, temporary events and festivals.
- Provide sufficient seating along the retail areas and the civic public space
- Ensure high quality materials are used for the square, which compliments the architecture, and meets *BREAAM* standards where possible.
- Ensure street furniture, planting and trees are arranged so that they are coordinated with buildings, reinforce key views / sight lines and maintain key connections.
- Ensure the space is level where possible to maintain accessibility for all users.

- Maintain a legible cycle route between The Ridgeway and Storeys Field, as the principal cycle route for the development.
- Positioning of trees which considers building frontages, views, and connections.
- Provide transponders (automated bollards), to control and restrict vehicle access into the square from Busgate Street.
- Provide sufficient cycle parking in accordance with planning, building requirements, and to the '*Cycle Parking Guide-For New Residential Developments*' by Cambridge City Council, paying attention to dimensions, siting and location.
- Provide permanent bollards between Busgate Street and the Square to restrict vehicle access into the Square. These should be sensitive to the character of the overall space.
- Provide for a turn around area for cars approaching the Square from the south of Busgate Street.

See also Chapter 3, Section 3.3 Access and Movement, Busgate Street on page 66, Section 3.4 Landscape, Table 3.14 Landscape Design Consideration Table - Key Spaces on page 82 and Hard Material on page 106.



Figure 4.3.13 Location of Market Square



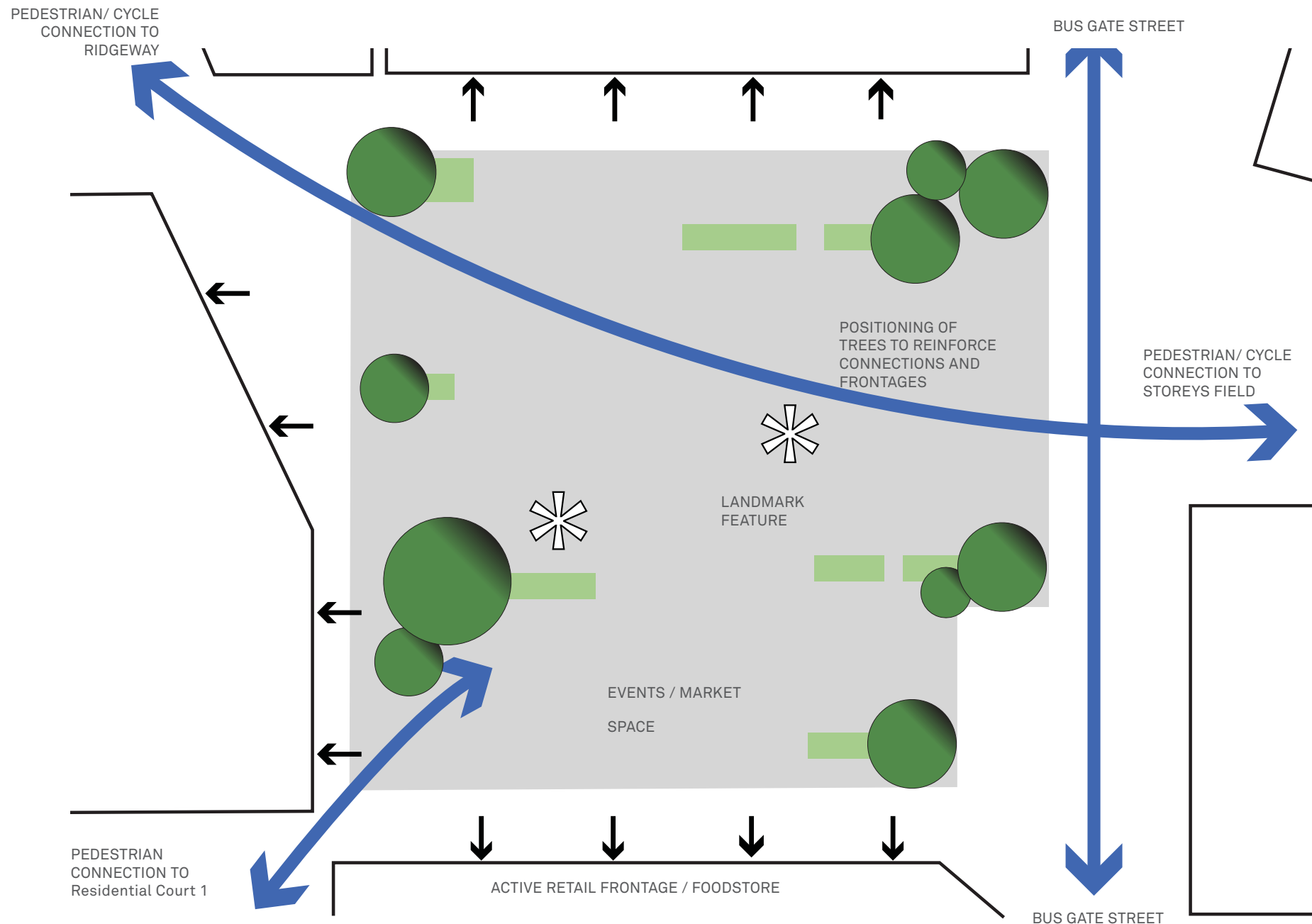


Figure 4.3.14 Market Square Illustrative Plan

## Key Spaces - Residential Court 1

The Residential Court 1 forms a part of the network of interconnected squares, providing a pedestrian connection from the Market Square in the East to the Residential Court 2 to the West; and the park and ride at the southern end of the development. The Residential Court 1 is enclosed by residential on 3 sides with the cafe fronting onto the North. The design will consider provisions for privacy and visual amenity for ground floor residents overlooking the Court. The primary function of the Residential Court 1 is to provide public parking for adjacent uses and is designed to feel like a courtyard, with a flexible shared surface which gives priority to pedestrians and residents.

Key Principles include:

- The Cafe which will provide a communal facility for residents and visitors.
- Provide car parking spaces in accordance with planning and architectural requirements.
- Provide sufficient cycle parking in accordance with planning, building requirements, and to the 'Cycle Parking Guide-For New Residential Developments' by Cambridge City Council. Paying attention to dimensions, siting and location. See Cycle Parking on page 72.
- Allow for the coordination of underground bins. See Operational Waste Management on page 136.

- Provide one way access for service and emergency vehicles. They will enter from an access road in the South, and will turn left and continue out towards the Primary Street.
- Shared surface between vehicle, cycle and pedestrian use. To encourage vehicles to slow down, and ensure a safe environment for residents and pedestrians. The surfacing should be informal in character, which blends in with the residential context. See Hard Material on page 106.
- Ensure good quality materials are used for the court, which compliments the architecture, and meets *BREAAM* standards where possible.
- Provide sufficient native planting and tree cover to minimise the effect of vehicle use, and to create a pleasant environment in terms of maintaining privacy, views from the residential buildings and for users.
- All surfacing should be level where possible to ensure accessibility for all, and appropriate for vehicles and cyclists. These should be of a good quality. See Hard Material on page 106.



Precedent Images for Residential Court 1



Figure 4.3.15 Location of Residential Court 1

## Key Spaces - Residential Court 2

The Residential Court 2 forms part of the network of interconnected spaces, providing a pedestrian connection from the Market Square through the Residential Court 1 out to the Western Edge.

The Residential Court 2 is enclosed on all sides by residential buildings. The design will consider provisions for privacy and visual amenity for ground floor residents overlooking the courtyard.

Key Principles include:

- Provide sufficient cycle parking in accordance with planning, building requirements, and to the 'Cycle Parking Guide-For New Residential Developments' by Cambridge City Council. Paying attention to dimensions, siting and location. See Cycle Parking on page 72.
- Provide one way access for service and emergency vehicles.
- Allow for the coordination of underground bins. See Operational Waste Management on page 136.
- Provide a courtyard space which allows for amenity use for residents, and for the public to enjoy.
- Provide native trees and planting to reinforce the courtyard space, with flower rich grassed areas, which is unified with the built form. The design will be contemporary with an informal character to create a relaxed residential feel. See Indicative Tree Species on page 110.
- Maintain key connections, paying particular

attention to entrances, the key East and West route, and links with other courtyards. The connections can be informed by the positioning of trees.

- Ensure good quality materials are used for the Residential Court 2, which compliments the architecture, and meets *BREAAM* standards where possible. See Hard Material on page 106.
- Ensure surfacing is level, to maintain

accessibility for all.

- Positioning of trees which considers building frontages, views, and connections.



Quality Courtyard Design



Figure 4.3.16 Location of Residential Court 1



Key Spaces - Veteran Oak

The existing Veteran Oak tree - Quercus robur will be retained in accordance with BS5837:2012. Based on this standard the Veteran Oak Tree has a root protection area of 44.5m in diameter surrounding the tree.

An existing Ash tree - Fraxinus excelsior will be carefully managed subject to planning approval and the supervision of an arboriculturalist to ensure the existing oak is protected.

The Veteran Oak Area will be bordered to the north by residential. A Primary Street will run along the southern edge of the space where it curves to avoid the Veteran Oak’s root protection area. The Ridgeway runs along the western edge of the space, which also avoids the protection area.

In order to retain the historic and amenity value of the Veteran Oak, there will be no access into the space. A low perimeter fence/ barrier which is sensitive to the proposed character of the area, surrounding the edge of the space will be used to ensure there is no pedestrian or vehicle disturbance to the root protection area of the tree, see Hard Material on page 106. Buildings will

Dimensions		
1	Veteran Oak Tree Canopy Size	22.0m Dia.
2	Veteran Oak Root Protection Area	44.5m Dia.
3	Ash Tree to be managed	11.0m Dia.

Table 4.3.2 Veteran Oak Area Design Dimensions

also be positioned outside this zone. Please also refer to Contextual Plan: Tree Preservation Order (Chapter 7, Appendix B, Figure 7.25 on page 275) in the Description of Development.

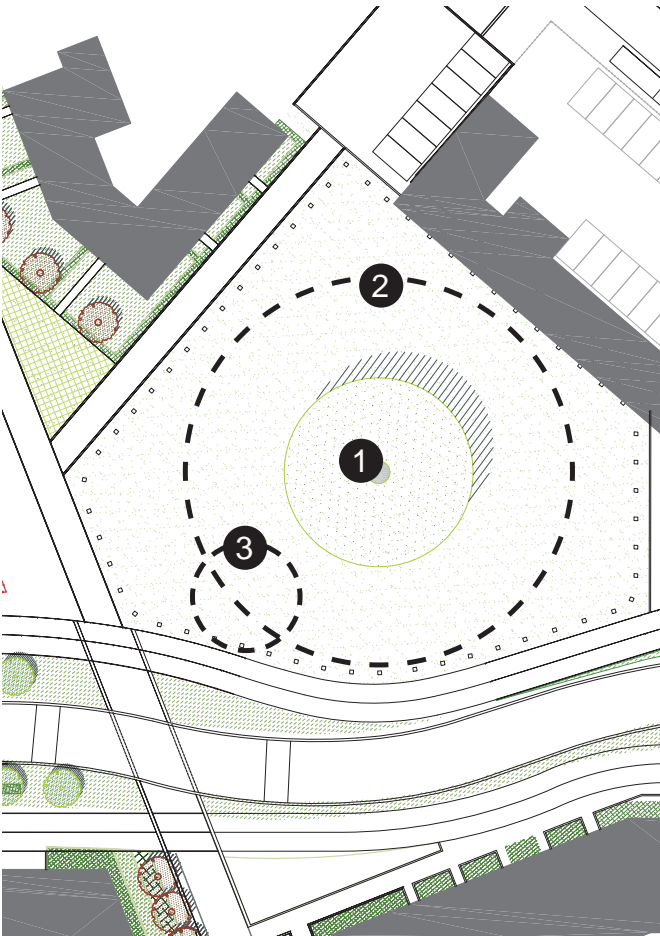


Figure 4.3.17 Veteran Oak Area Illustrative Plan



The Existing Veteran Oak and Ash Tree

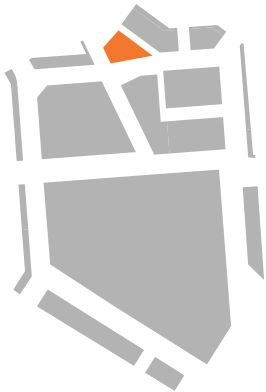


Figure 4.3.18 Location of Veteran Oak Area



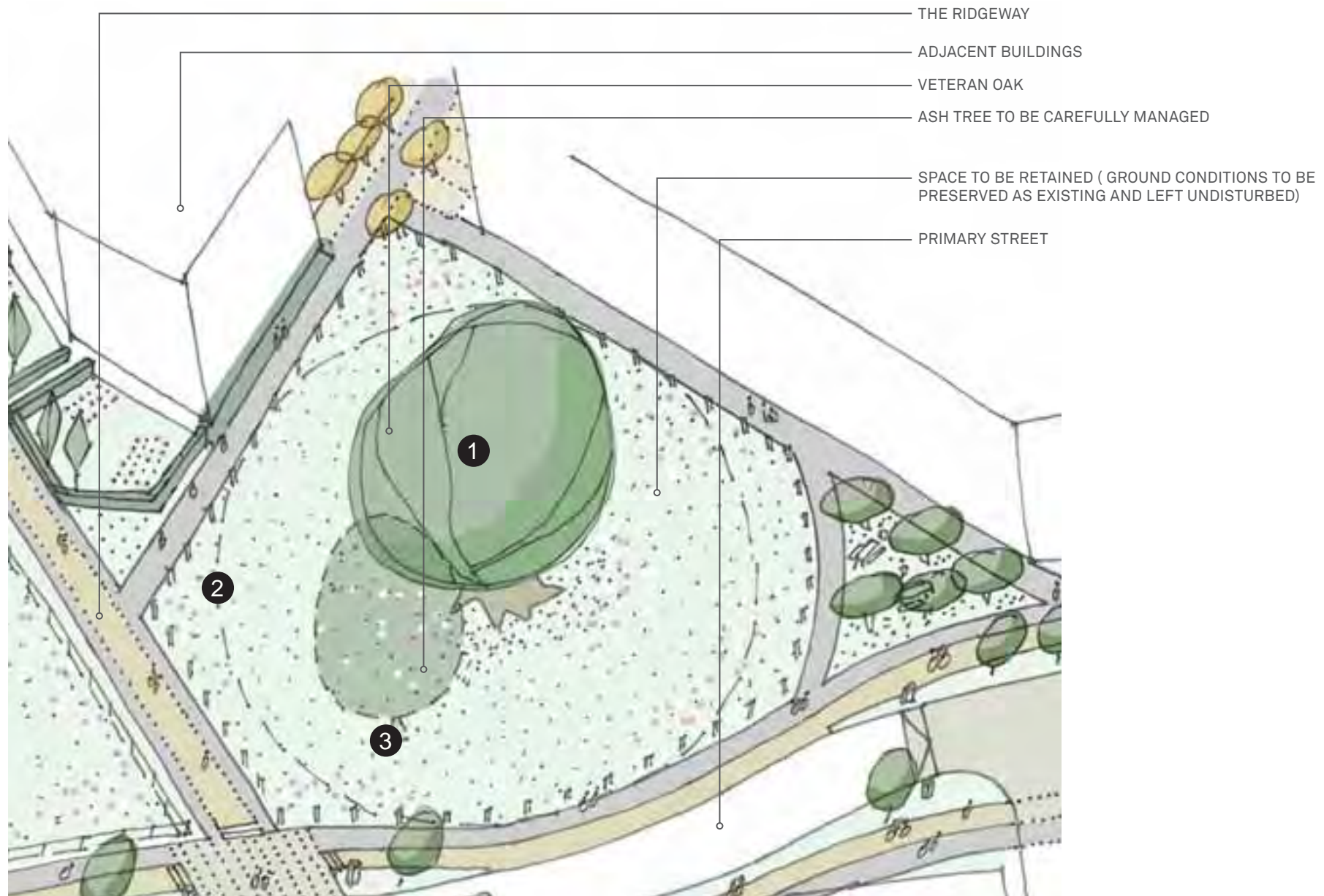


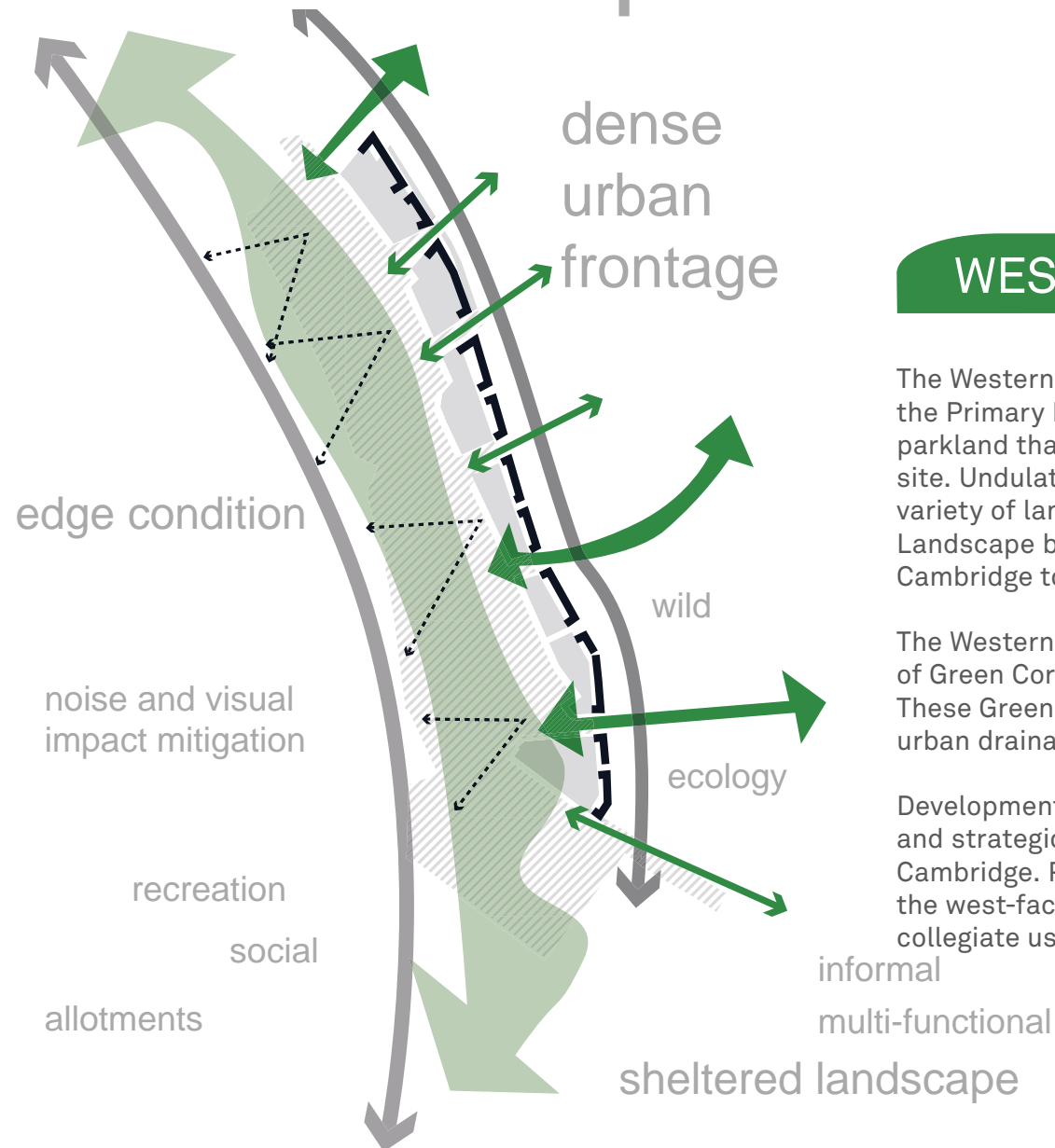
Figure 4.3.19 Illustrative Sketch of Veteran Oak Area



North West Cambridge

4

# naturalistic parkland



## WESTERN EDGE

The Western Edge character area is positioned between the M11 and the Primary Radial Street within North West Cambridge. It is a major parkland that forms part of the sustainable urban draining system of the site. Undulating landforms will create attractive outdoor rooms with a variety of landscape features, play facilities, gardens and water features. Landscape bunding and trees will provide visual screen from North West Cambridge to the M11.

The Western Edge is connected with the rest of the site through a series of Green Corridors, which are landscape set pieces in their own right. These Green Corridors are an integral part of the site wide sustainable urban drainage system.

Development edge along this character area are visible from the M11 and strategic landmarks are identified to mark the sense of arrival to Cambridge. Panoramic landscape views over the M11 are assets for the west-facing academic or commercial research facilities as well as collegiate uses.

Figure 4.4.1 Concept of Western Edge





Attractive landscape of Western Edge brings nature to the communities of North West Cambridge



Encourage local biodiversity



Discovering wildlife and nature



Leisure and gathering spaces



Recreational spaces



Parkland frontage



Community engagement



Active lifestyle



Curiosity and exploration





Figure 4.4.2 Character of Western Edge

# PLACE-MAKING PRINCIPLES

For the Land Use, Infrastructure and Sustainability layers, the designers must refer to Site Wide Design Codes as set out in Chapter 3. For Urban Structure, Access & Movement and Landscape layers, designers should follow the site wide design codes for the generic principles and the specific intentions set out below within the character area chapter. For relevant character areas , landscape layer has been further detailed to set out the principles for Key Spaces. These form the MANDATORY aspects of the design codes.

## Urban Structure

Given its development context, Western Edge comprises of three block types, form and frontage to:

- perimeter blocks manage the transition from Western Edge landscape on the West and primary street on the East
- Linear and Special blocks respond to the landscape edge to the West opening up views towards the landscape

Please continue to page 194-195 for more details. Also refer to Table 4.4.1 opposite for block typologies reference from Chapter 3.



Figure 4.4.3 Urban Structure

## Access and Movement

The Western Edge is well-connected to the rest of the areas by the Primary street which runs North-South all along on the East. The Primary Street also has provision for dedicated cycle lanes.

Refer to Table 4.4.1 opposite for street typologies reference from Chapter 3.

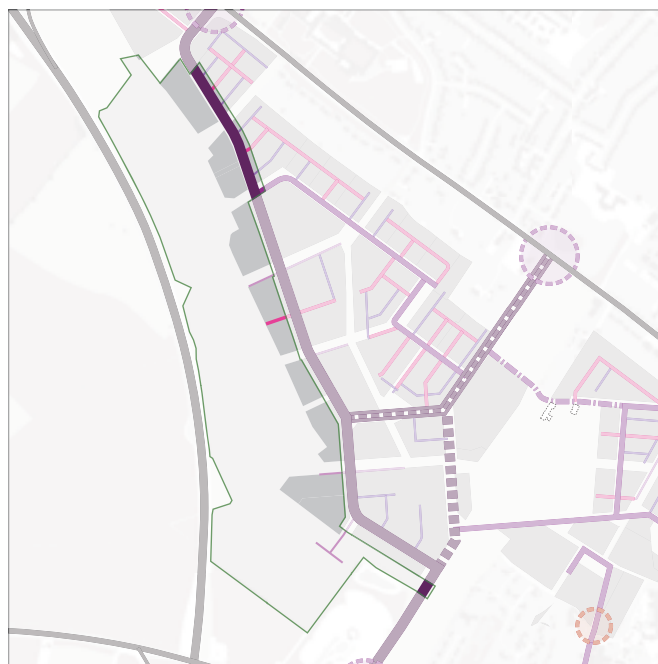


Figure 4.4.4 Street Hierarchy

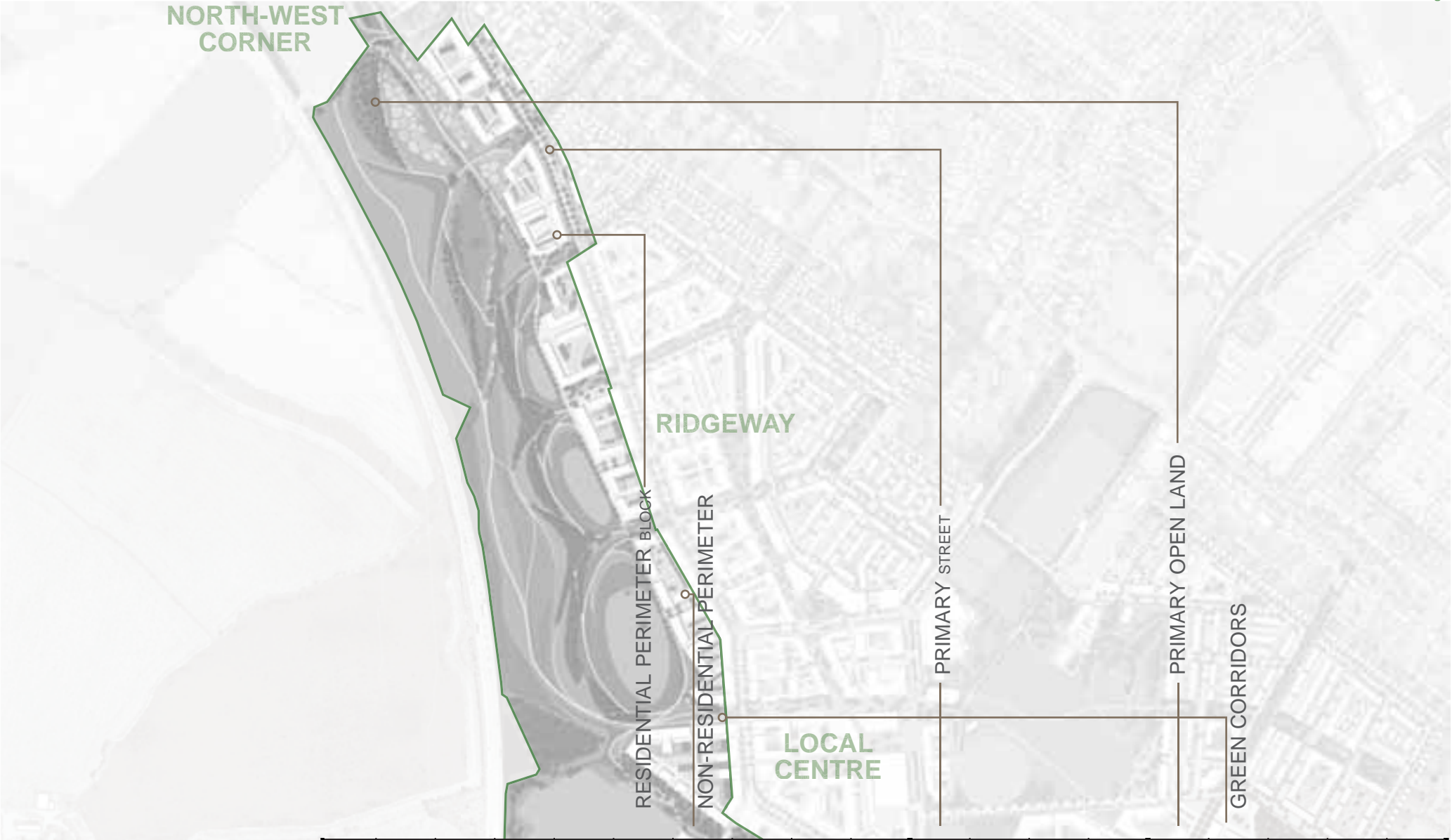
## Landscape

A major part of this character area is the Primary Open Land to the West which forms the edge to M11. Western Edge is further divided into sub-character areas within the site wide landscape section. Please see Chapter 3, Section 3.4 Landscape, The Western Edge on page 84. Western Edge landscape must to be designed to screen the development from M11. It also accommodates sports fields, allotments and play areas.

Refer to Table 4.4.1 opposite for landscape typologies reference from Chapter 3.



Figure 4.4.5 Landscape and Key Spaces



CHARACTER AREAS	01	02	03	04	05	06	07	08	09	10	01	02	03	04	01	02	03	04	05
	BLOCKS										STREET				LANDSCAPE				
WESTERN EDGE						●	●		●		●				●	●			●
Refer to pages in Site Wide						p41	p42		p44		p56				p84	p92			p116

Table 4.4.1 Western Edge Navigation Table

# Block Structure

Blocks in Western Edge are defined by the primary street to one side and the primary open land to the other. Green Corridors intercept the blocks at intervals as shown by green arrows. Further block permeability is desirable to allow for views and routes into the Western Edge as shown by red arrows.

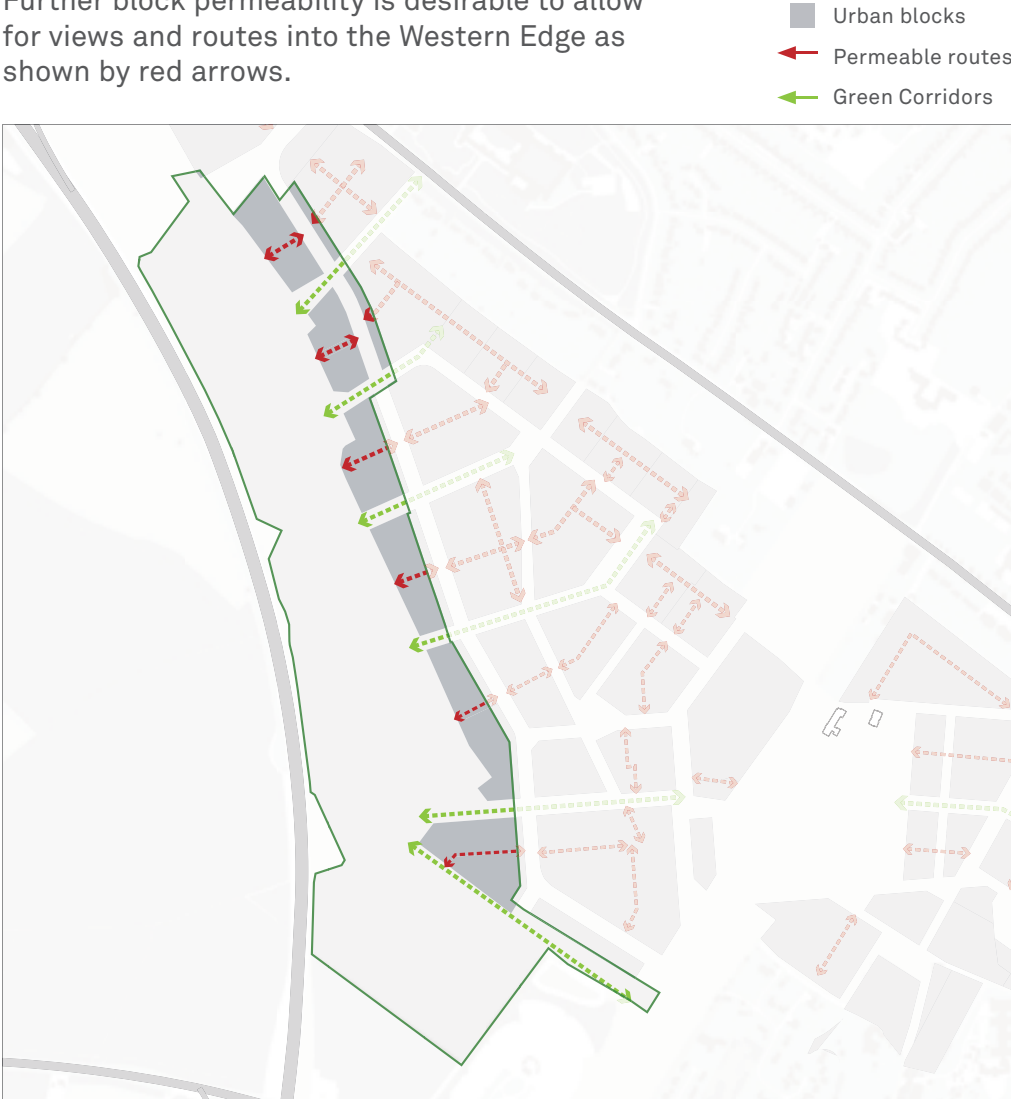


Figure 4.4.6 Block Structure

# Frontage

Western Edge blocks front the large open landscape corridor that acts as a buffer zone from the M11. The buildings facades must respond to the edge condition here offering views out to the inhabitants but at the same time allow for acoustic mitigation. Please refer to Chapter 3, Section 3.5 Infrastructure about Noise on Page 133 for guidance.



Figure 4.4.7 Frontages



## Height and Massing

Massing along Western Edge defines the edge to the park with three to four storey buildings all along that offer great views of the park to the inhabitants. The massing decreases towards the North in response to the North-West Corner character area. A landmark is proposed to the South towards Local Centre.

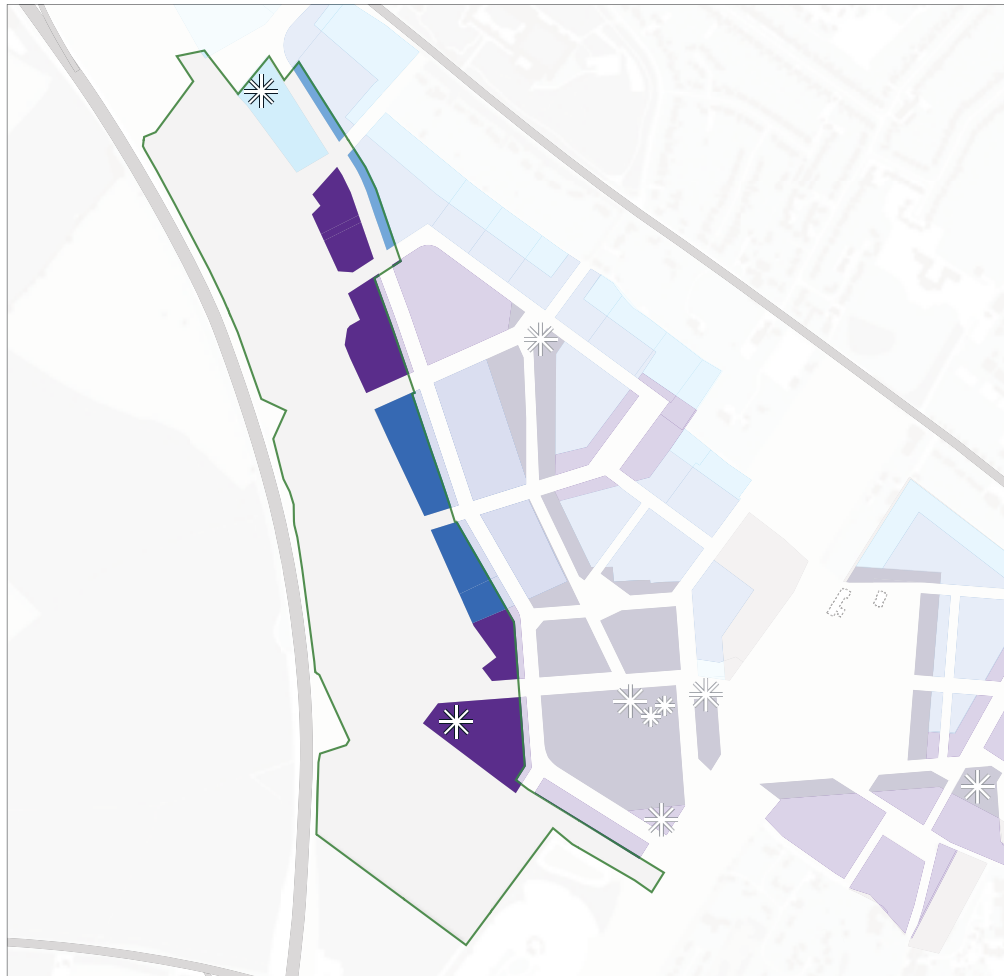


Figure 4.4.8 Massing and Landmarks

## Block Typology

Western Edge comprises of residential and non-residential perimeter blocks and linear blocks, each type responding to the park edge.

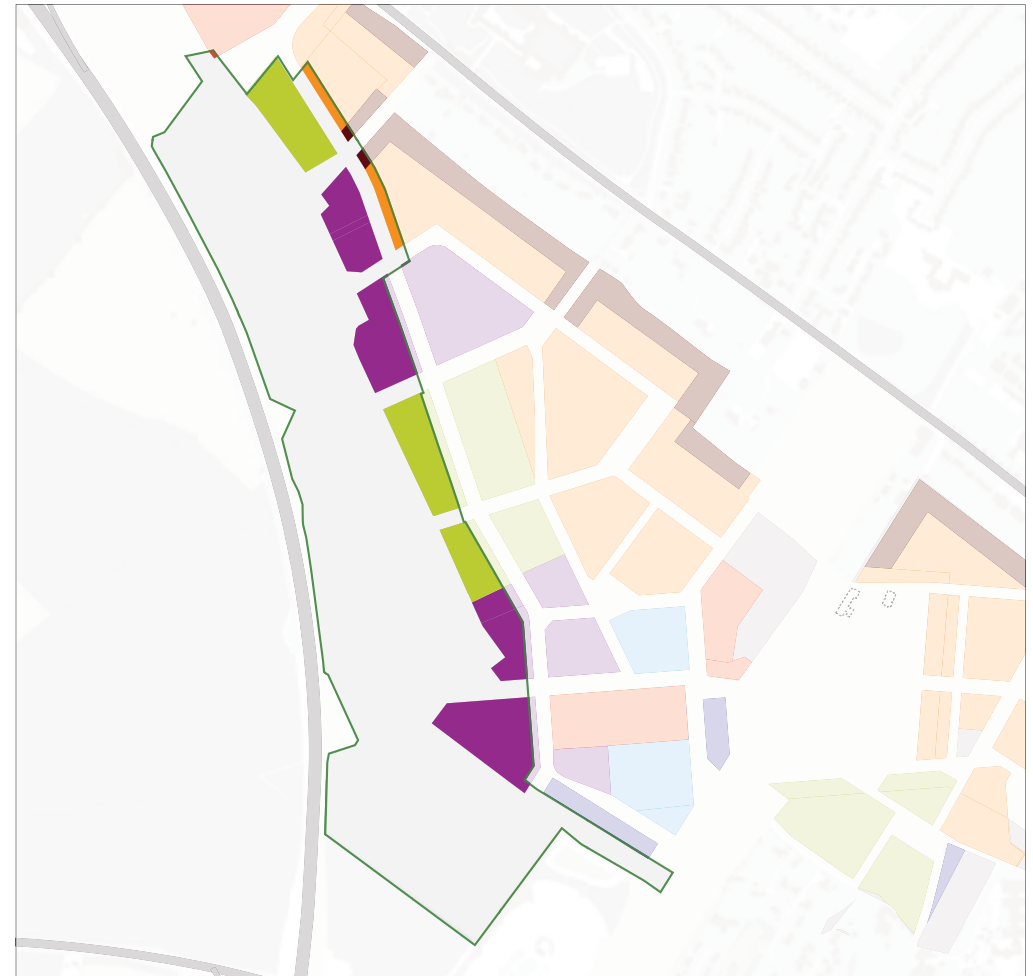
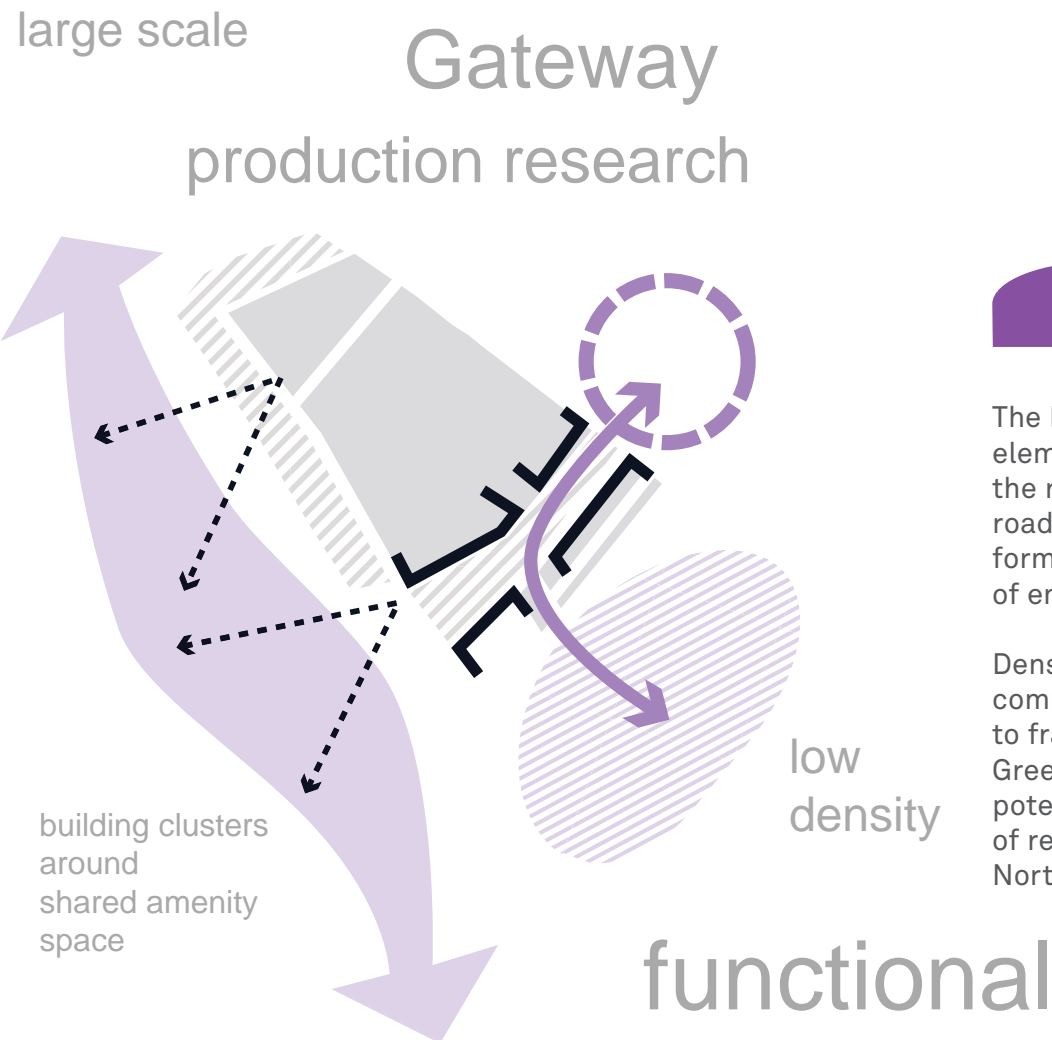


Figure 4.4.9 Block Types



North West Cambridge

4



## NORTH WEST CORNER

The North West Corner character area focuses around two key structuring elements. First is the unique small residential community that completes the residential character of the existing residences along Huntingdon road. Second is the commercial research and development buildings that form a campus area with landmark presence on the A14 and notable point of entry into North West Cambridge from Huntingdon Road north junction.

Density within North West Corner will vary from detached housing to complement existing houses along Huntingdon Road to taller buildings to frame the arrival sequence. Existing hedgerows are retained to create Green Corridors within the character area. Academic uses and the potential CHP are set back to provide a landscaped edge. A small element of residential and complementary mixed use are positioned within the North West Corner to provide a social focus.

Figure 4.5.1 Concept of North West Corner



Building clusters around shared amenity space



Research and collaboration



Supporting amenity for work and research



Large scale architecture - gateway buildings



Functional and protected



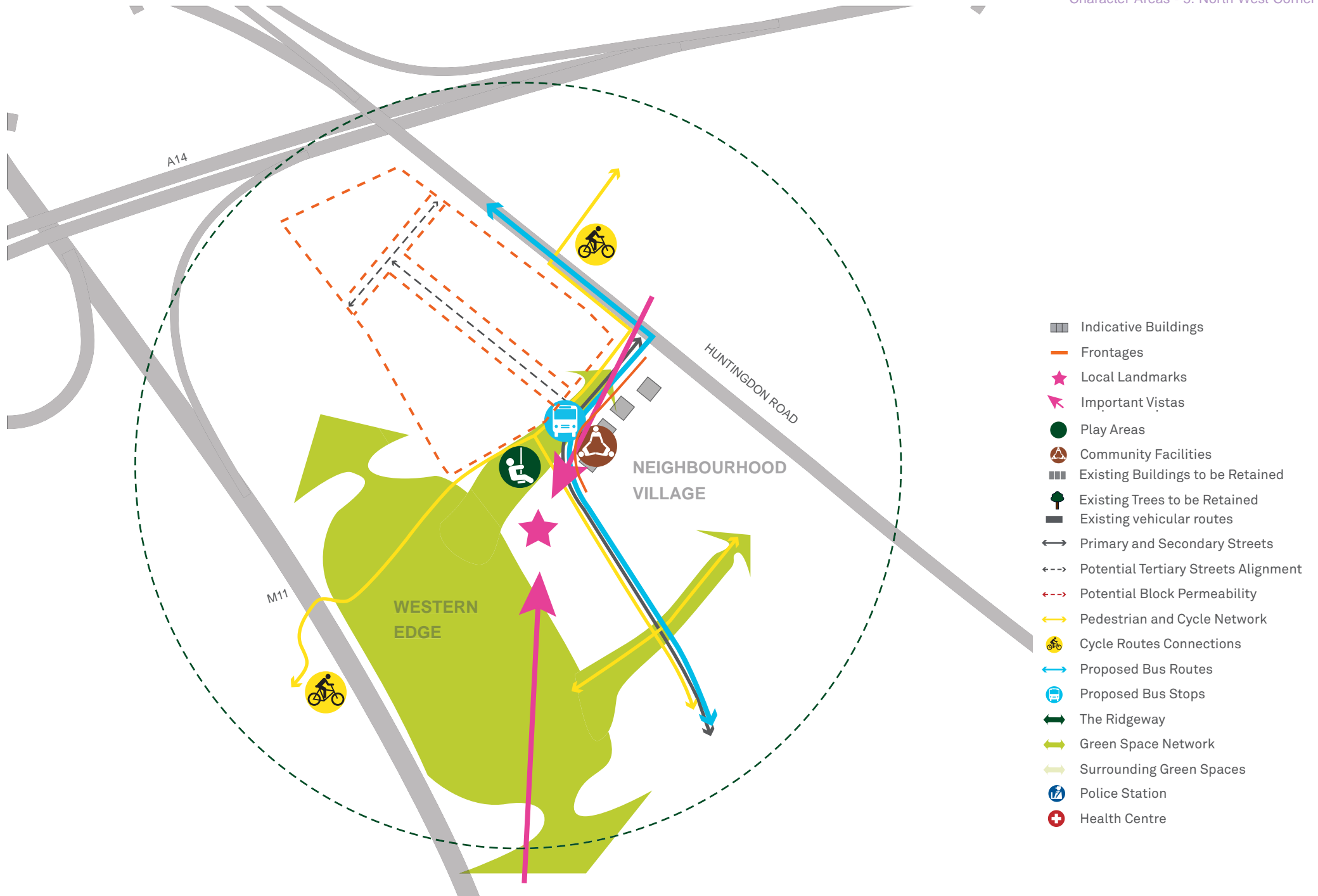


Figure 4.5.2 Character of North West Corner

# PLACE-MAKING PRINCIPLES

For the Land Use, Infrastructure and Sustainability layers, the designers must refer to Site Wide Design Codes as set out in Chapter 3.

For Urban Structure, Access & Movement and Landscape layers, designers should follow the site wide design codes for the generic principles and the specific intentions set out below within the character area chapter. These form the MANDATORY aspects of the design codes.

## Urban Structure

North West Corner comprises only special block owing to its single-use character which is non-residential .

See Block Typology on page 32 for more information.

Please continue to page 202-203 for more details. Also refer to Table 4.5.1 opposite for block typologies reference from Chapter 3.

## Access and Movement

North West Corner forms a key gateway into the site from the North connecting to Huntington Road and A14. The primary street connects this area runs along the length of the site in the North-South direction.

Refer to Table 4.5.1 opposite for street typologies reference from Chapter 3.

## Landscape

A Green Corridor connects North West Corner to Western Edge. A key space is proposed at the junction where all three character areas meet - North West Corner, Western Edge and Neighbourhood Village. This space also terminates a key vista from the entrance gateway through the primary street.

Refer to Table 4.5.1 opposite for landscape typologies reference from Chapter 3.



Figure 4.5.3 Urban Structure

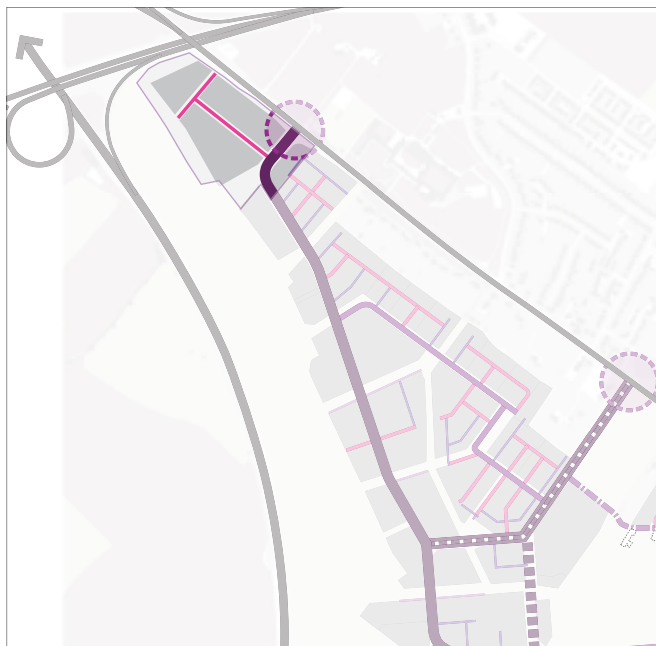


Figure 4.5.4 Street Hierarchy



Figure 4.5.5 Landscape and Key Spaces



CHARACTER AREAS

01	02	03	04	05	06	07	08	09	10	01	02	03	04	01	02	03	04	05
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

BLOCKS

STREET

LANDSCAPE

NORTH WEST CORNER

Refer to pages in Site Wide


Table 4.5.1 North West Corner Navigation Table

# Block Structure

North West Corner needs to respond to the edge conditions around it. The blocks must be designed sensitively in response to the immediate context be it the street to the East or the landscape edge to the West. Permeability needs to be created within the character area to ensure good scale urban environment.

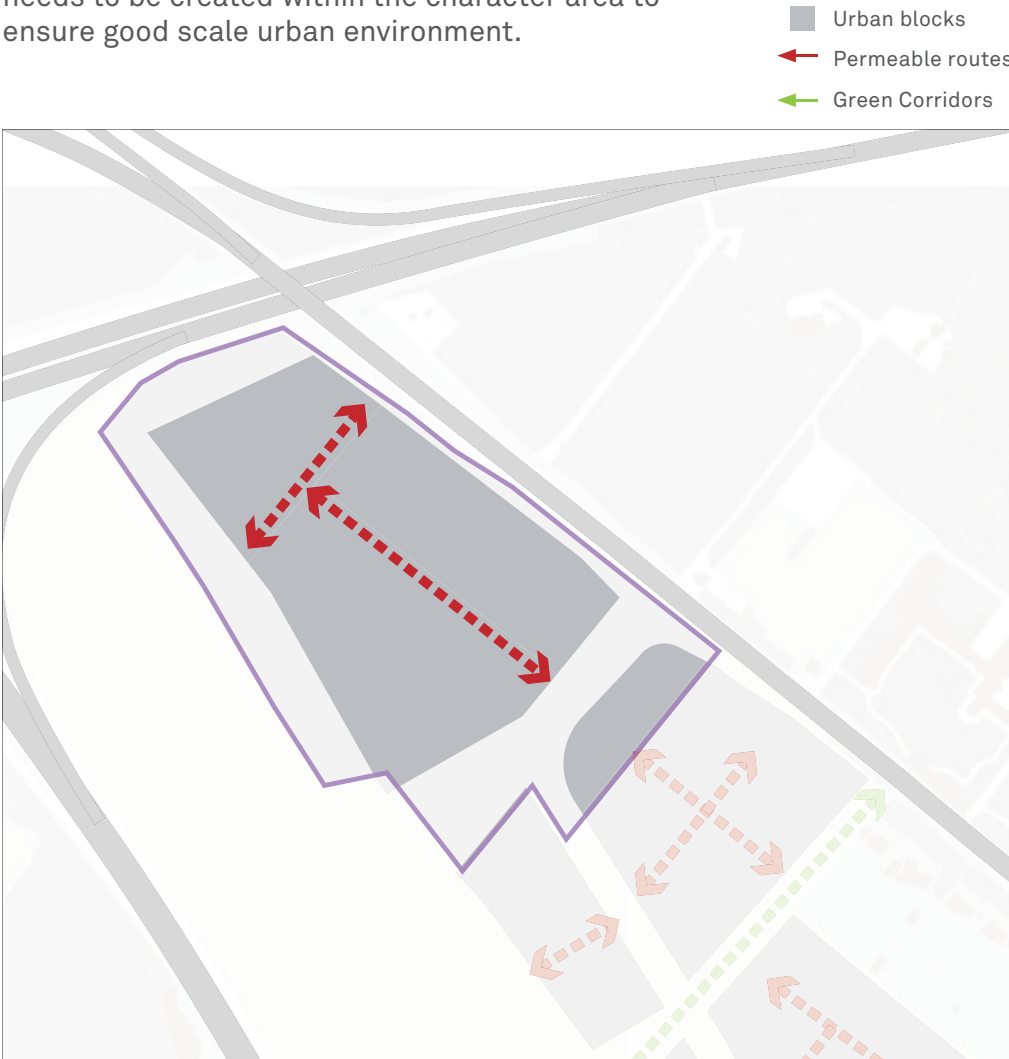


Figure 4.5.6 Block Structure

# Frontage

North West Corner frontages need to respond to the streets on the periphery - Huntington road to the North-east and key route into site and the Western edge landscape to the West.

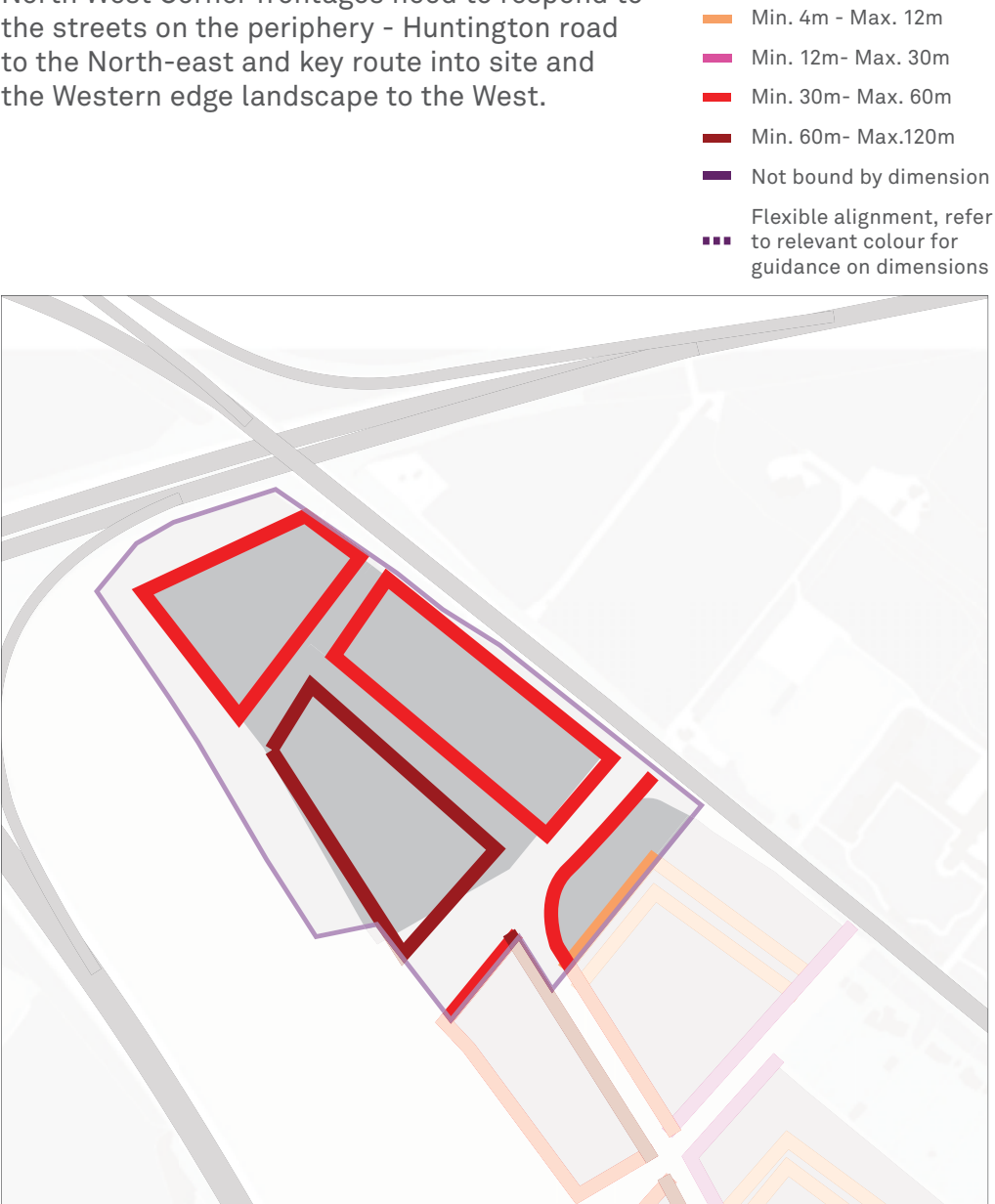


Figure 4.5.7 Frontages



## Height and Massing

North West Corner is very low lying as compared to the rest of the development. It is comprised of 1 to 2 storey large units catering to commercial research.

- 1/2 storeys generally
- 2 storeys generally
- 2/3 storeys generally
- 3 storeys generally
- 3/4 storeys generally
- 4 storeys generally
- ✱ Landmarks

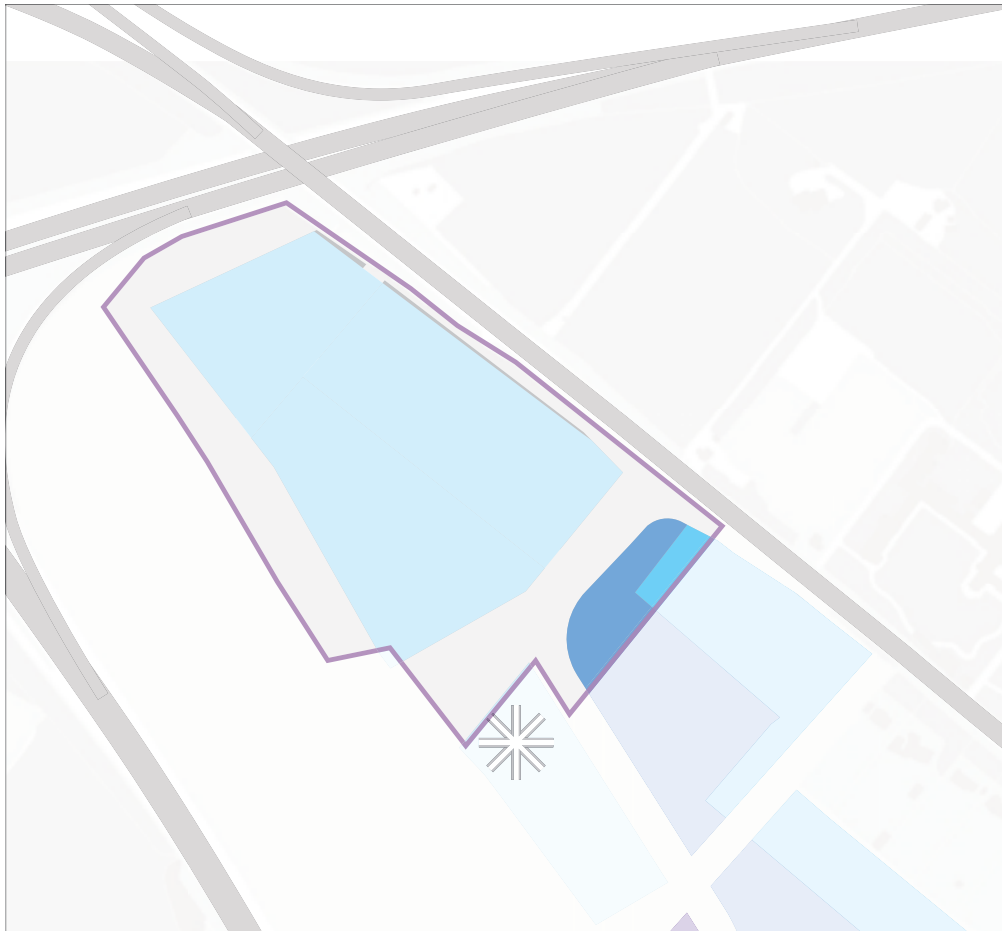


Figure 4.5.8 Massing and Landmarks

## Block Typology

North West Corner is characterized by the special block with buildings serving mostly commercial research and development. The South-west residential edge responds to the adjacent hybrid residential blocks.

- Block Type 1 - Development Edge
- Block Type 2 - Access Mews
- Block Type 3 - Central Communal Courtyard
- Block Type 4 - Back to Back Rear Garden
- Block Type 5 - Hybrids
- Block Type 6 - Residential Perimeter Block
- Block Type 7 - Non-Residential Perimeter
- Block Type 8 - Local centre Mixed Use
- Block Type 9 - Linear Block
- Block Type 10 - Special Block

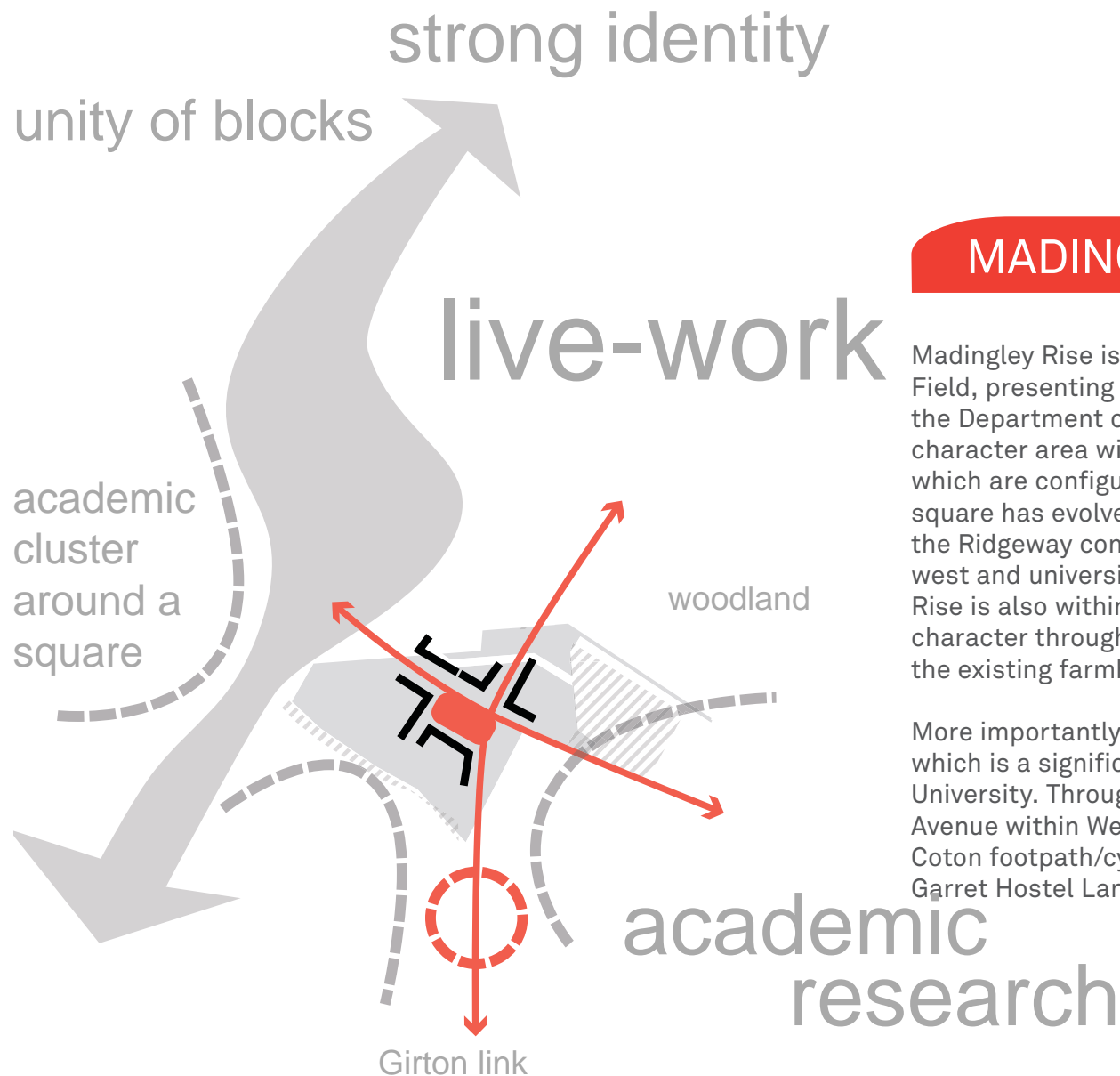


Figure 4.5.9 Block Types



North West Cambridge

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## MADINGLEY RISE

Maddingley Rise is the academic cluster immediately south of Storey's Field, presenting an urban frontage to the parkland edge. Together with the Department of Earth Sciences and the BP Institute, Maddingley Rise character area will establish a distinctive address for academic facilities which are configured around a small, formal square. The character of this square has evolved around the retained building in Gravel Hill Farm and the Ridgeway connects this square with the Local Centre to the north-west and university facilities and colleges along Storey's Way. Maddingley Rise is also within easy walking distance to the Neighbourhood Village character through the horse chestnut avenue, creating a strong vista to the existing farmhouse.

More importantly, Maddingley Rise will be connected to West Cambridge, which is a significant academic and commercial research campus for the University. Through the existing lane Maddingley Rise and J. J. Thompson Avenue within West Cambridge, cyclists and pedestrians can pick up Coton footpath/cycleway to continue their journeys to the city centre via Garret Hostel Lane.

Figure 4.6.1 Concept of Maddingley Rise



Convenient access to adjacent academic research



Break-out spaces for meeting and exchange of ideas



Vibrant work and research environment



Attractive work and research environment - blending of old and new



High quality modern architecture and public realm



Recreational spaces



Work, research and student life



Young post-doctorate family living



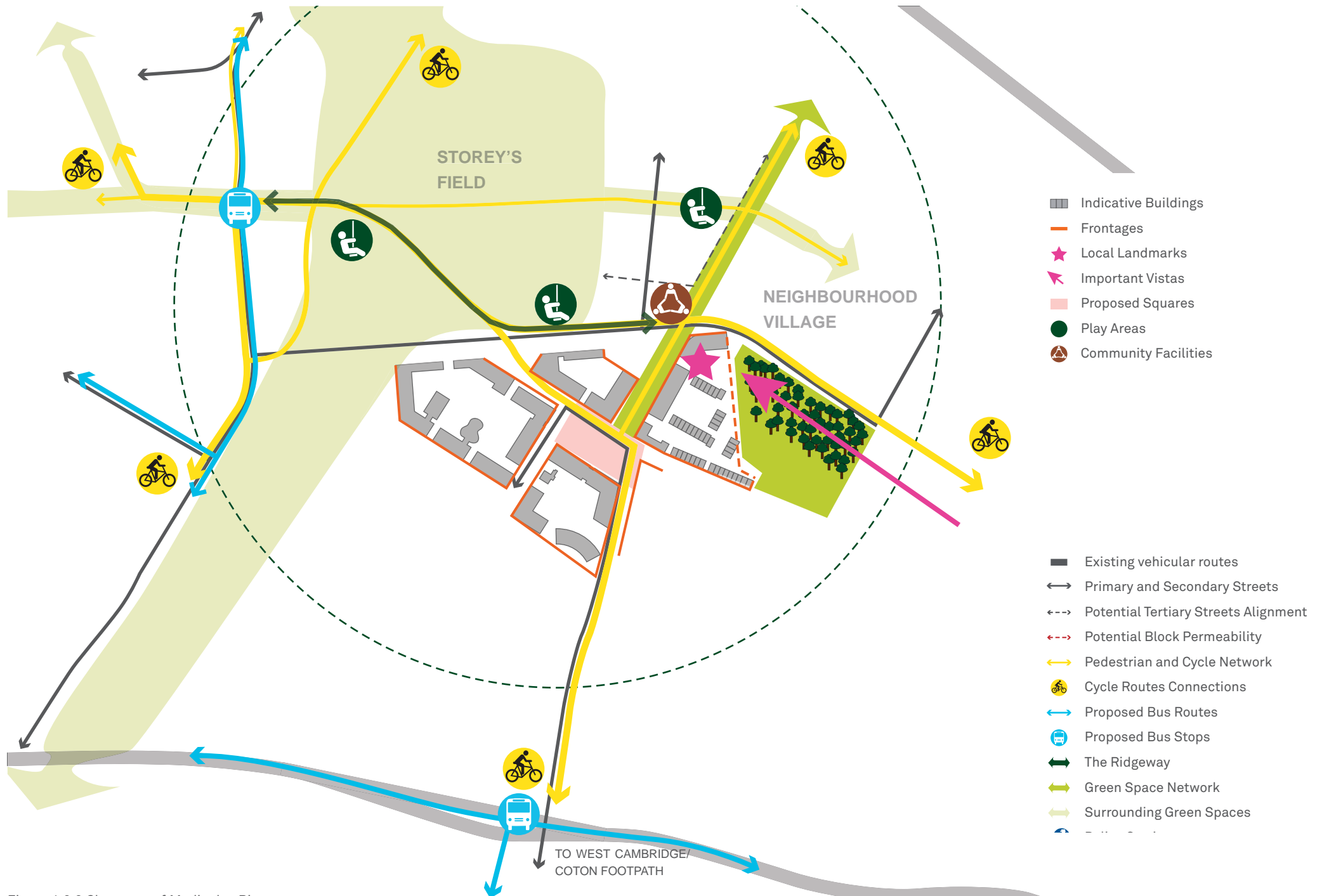


Figure 4.6.2 Character of Madingley Rise

# PLACE-MAKING PRINCIPLES

For the Land Use, Infrastructure and Sustainability layers, the designers must refer to Site Wide Design Codes as set out in Chapter 3. For Urban Structure, Access & Movement and Landscape layers, designers should follow the site wide design codes for the generic principles and the specific intentions set out below within the character area chapter. For relevant character areas, landscape layer has been further detailed to set out the principles for Key Spaces. These form the MANDATORY aspects of the design codes.

## Urban Structure

Given its development context, Madingley Rise comprises of two block types, form and frontage to:

- perimeter blocks form the academic research clusters
- Hybrid blocks respond to the woodland to the East and form the residential component of the character area.

Please continue to page 210-211 for more details. Also refer to Table 4.6.1 opposite for block typologies reference from Chapter 3.



Figure 4.6.3 Urban Structure

## Access and Movement

Madingley Rise is a key gateway into the site from the South via two routes from Madingley Rise and from Madingley Road West Junction. It is very close to Neighbourhood Village and Storey's Field.

Refer to Table 4.6.1 opposite for street typologies reference from Chapter 3.

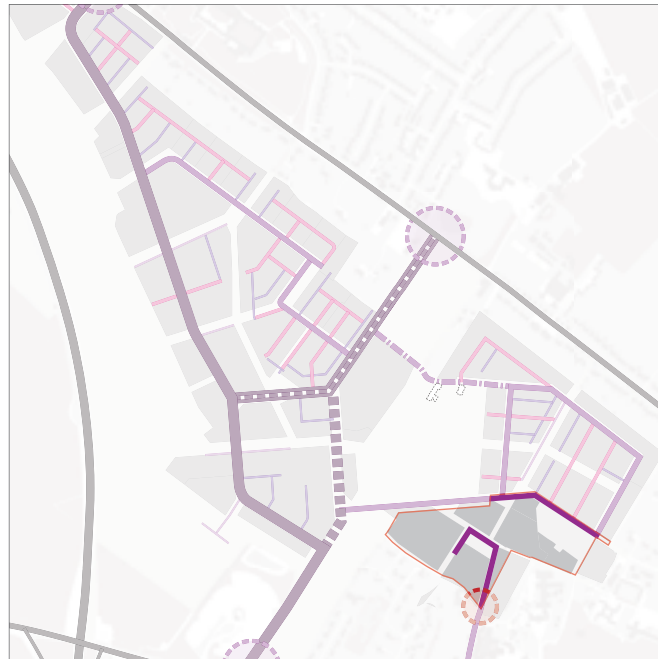


Figure 4.6.4 Street Hierarchy

## Landscape

A woodland sits in the Eastern part of the character area which is to be retained. The Academic Square (page 213) forms the heart of this character area with academic research perimeter blocks fronting on all sides.

Refer to Table 4.6.1 opposite for landscape typologies reference from Chapter 3.



Figure 4.6.5 Landscape and Key Spaces

Table 4.6.1 Madingley Rise Navigation Table

# Block Structure

Madingley Rise blocks are structured around a key open space, the academic square and also respond to the streets around this character area. The blocks that front the Academic Square will form a unified, consistent enclosure.



Figure 4.6.6 Block Structure

# Frontage

Characterized by two block types varying in scale, the frontages within Madingley rise relate to those. The frontages also respond to the low density residential area to the North as compared to the mid-density commercial/ academic research blocks to the South.

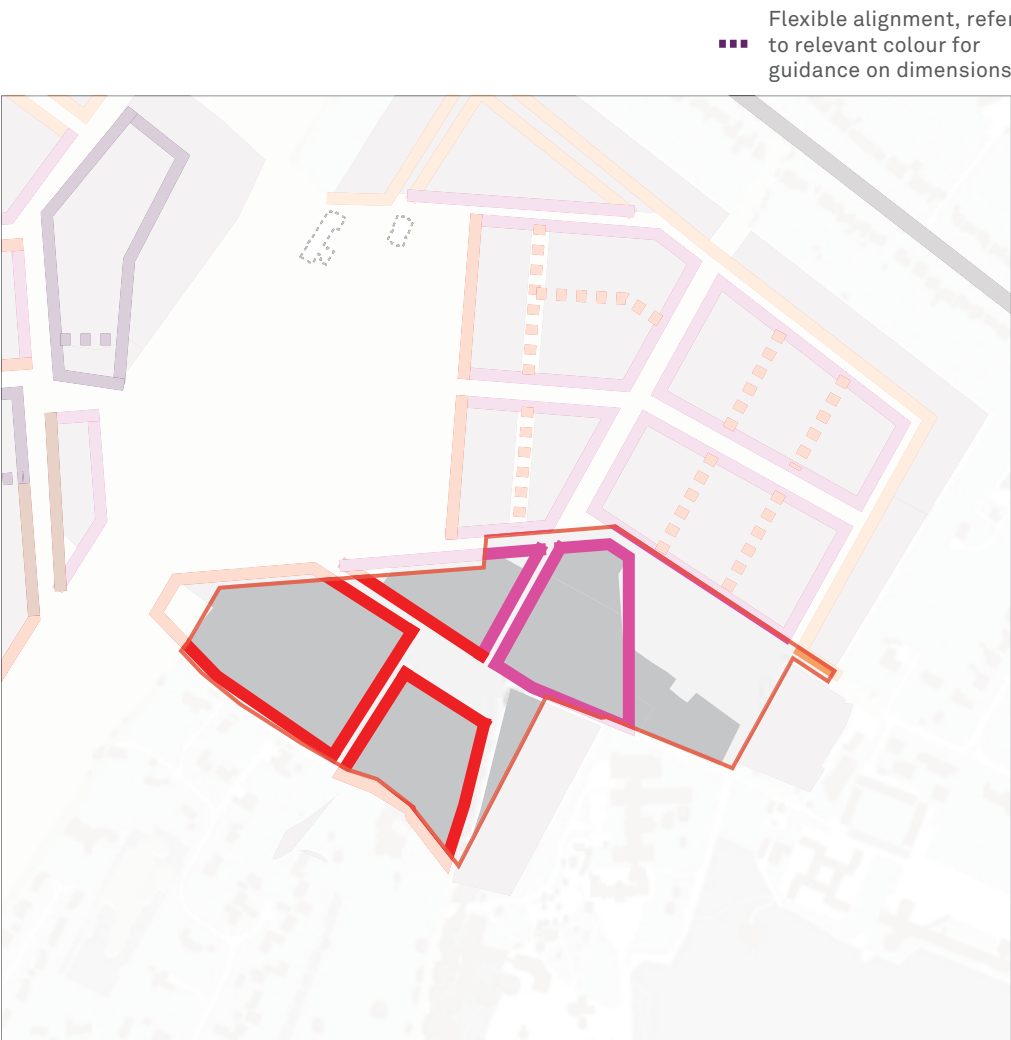


Figure 4.6.7 Frontages



## Height and Massing

Maddingley Rise is generally low-rise, with 3 storey blocks forming most part of this character area. The Northern part of this area fronts onto a key entry into development and has higher 4 storey frontages on this secondary street. The vista from Churchill College along Maddingley Road towards the site culminates into a landmark.

- 1/2 storeys generally
- 2 storeys generally
- 2/3 storeys generally
- 3 storeys generally
- 3/4 storeys generally
- 4 storeys generally
- Landmarks

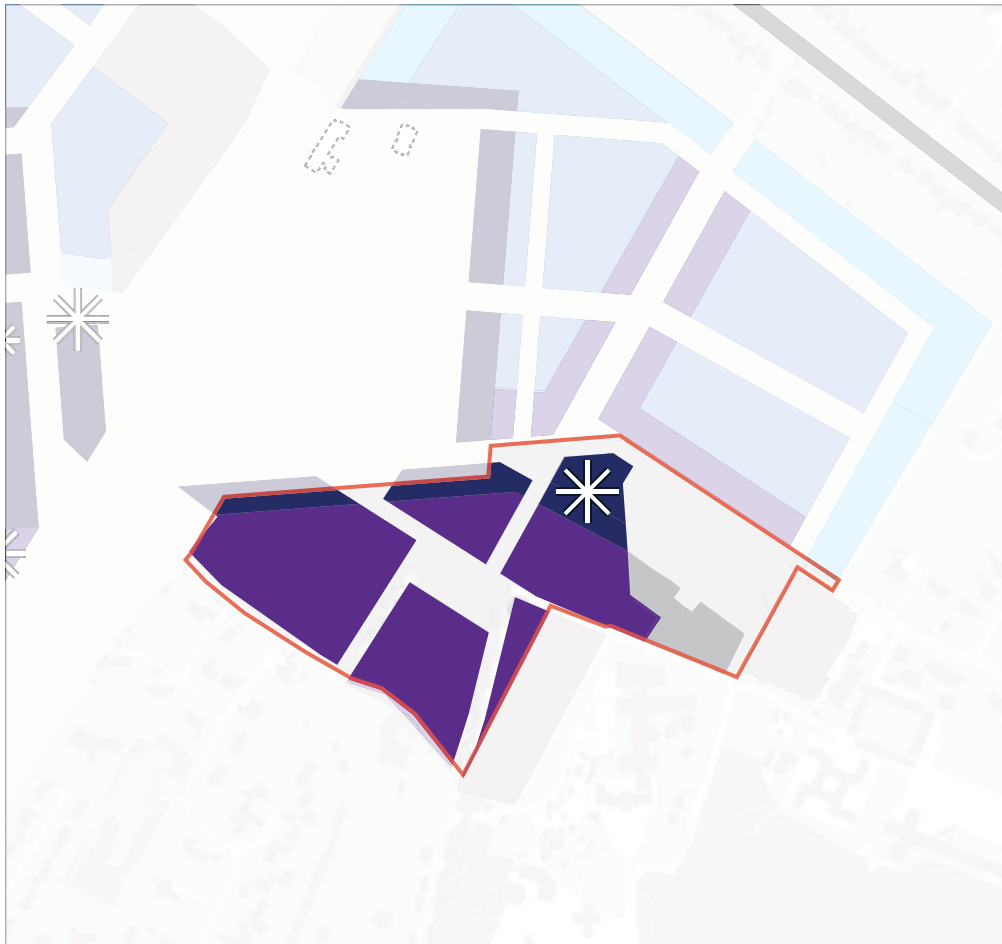


Figure 4.6.8 Massing and Landmarks

## Block Typology

Owing to its character of being essentially an academic research district within North West Cambridge, Maddingley Rise is composed of Non-residential perimeter blocks mostly. The Northeastern part of this area is mostly residential with Hybrid blocks, responding to the woodland edge.

- Block Type 1 - Development Edge
- Block Type 2 - Access Mews
- Block Type 3 - Central Communal Courtyard
- Block Type 4 - Back to Back Rear Garden
- Block Type 5 - Hybrids
- Block Type 6 - Residential Perimeter Block
- Block Type 7 - Non-Residential Perimeter
- Block Type 8 - Local centre Mixed Use
- Block Type 9 - Linear Block
- Block Type 10 - Special Block

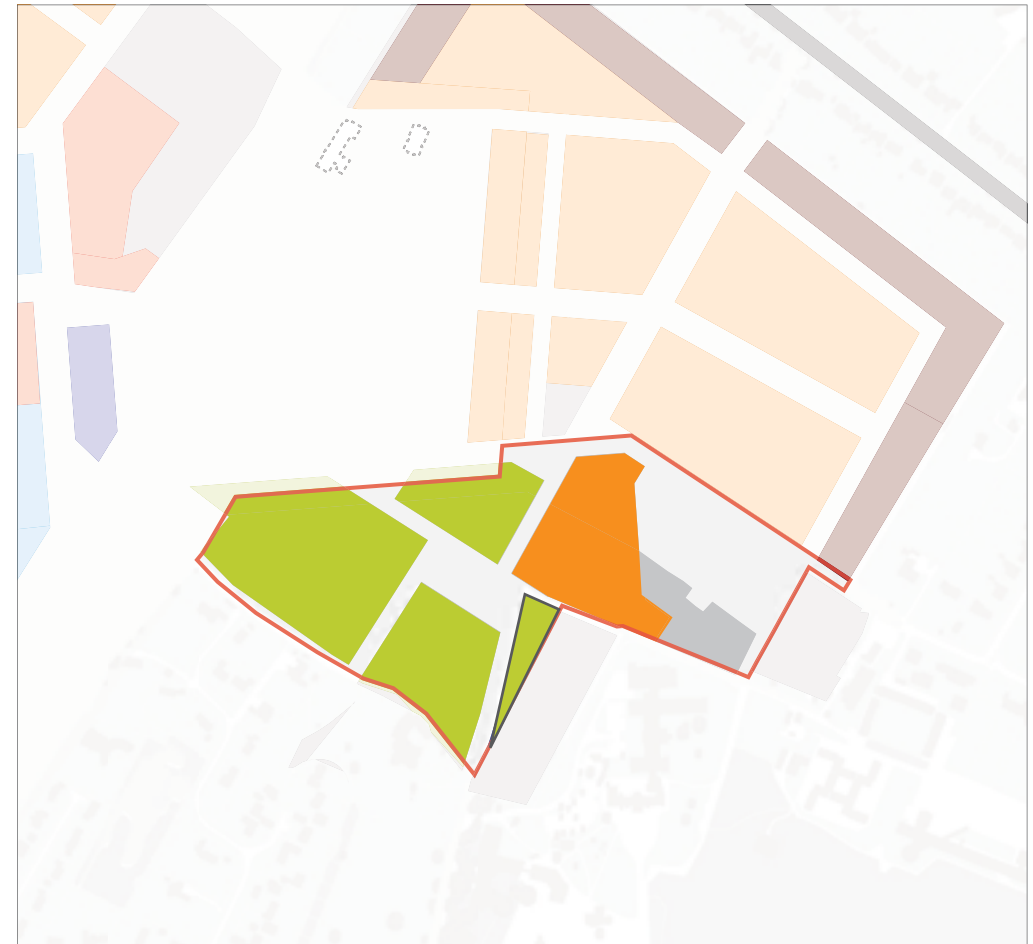


Figure 4.6.9 Block Types

## Landscape Typology

There are two key landscape features within Madingley Rise - The Academic Square and a retained woodland on the Eastern edge.

Please refer to Chapter 3, Section 3.4 Landscape for the site wide landscape aspiration, within that Table 3.14 Landscape Design Consideration Table - Key Spaces on page 82 and Youth Facilities and Children's Play on page 116.

Further parameters are set out in Parameter Plan 03, See Chapter 7, Appendix B, Figure 7.31 Open Land and Landscape Areas Parameter Plan on page 281. Please also refer to Contextual Plan: Tree Preservation Order (Chapter 7, Appendix B, Figure 7.25 on page 275) in the *Description of Development*.

- Primary open space
- Secondary open space
- Existing open space, woodland and tree cover retained
- Allotments
- Key spaces
- Play Areas
- Neighbourhood Play Area

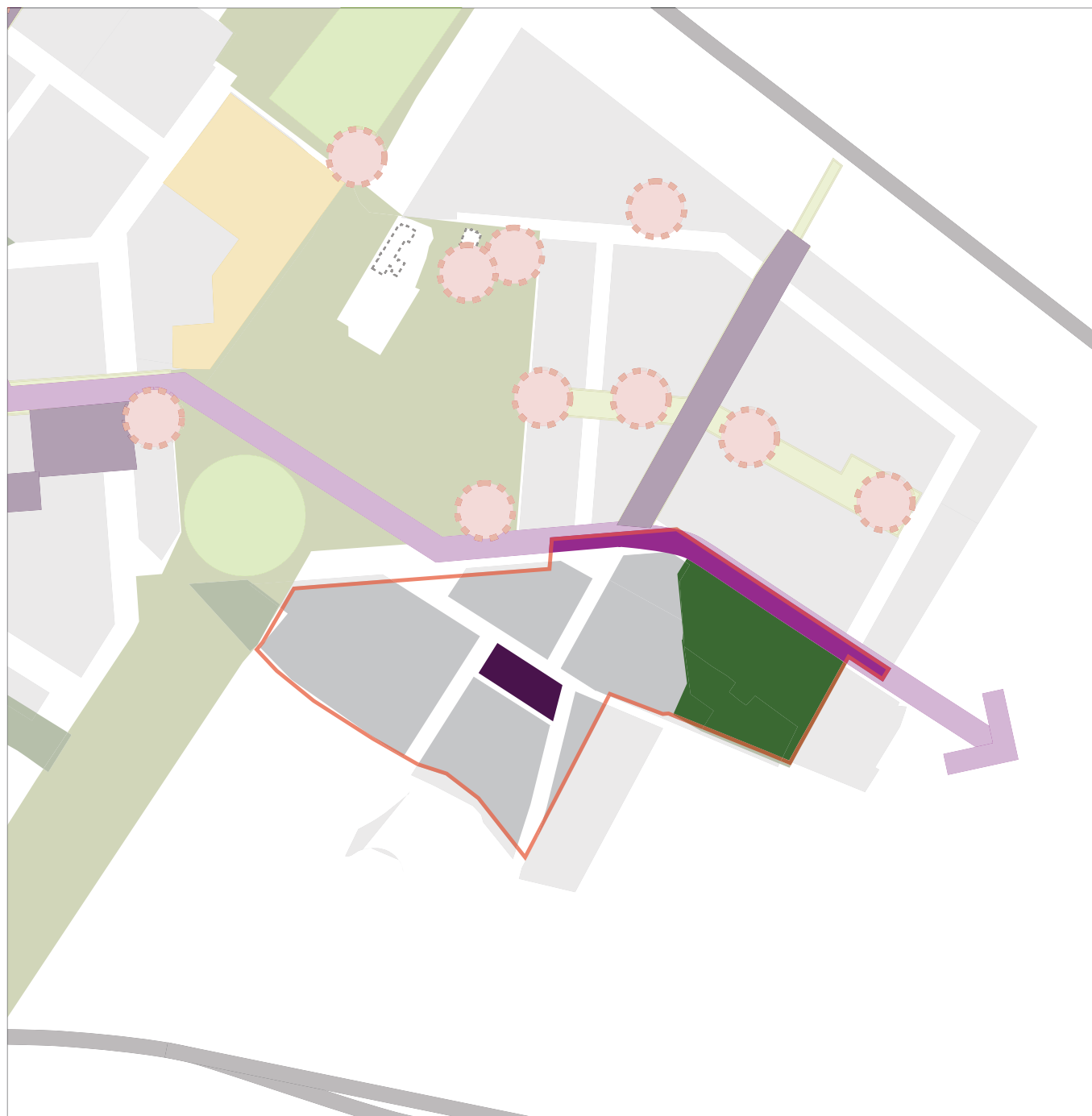


Figure 4.6.10 Landscape and Key Spaces in Madingley Rise

## Key Spaces - Academic Square

Academic Square is located to the south of Horse Chestnut Avenue and will primarily serve the Science and Academic student community as well as the residents of the nearby housing. Pedestrian connections will be provided to three sides of the square, most notably from Madingley Rise to the south and Horse Chestnut Avenue to the north.

Academic Square is to be treated as a generous “green courtyard” offering unobstructed views and a quiet, relaxed character similar to that of a traditional village green. Large areas of open lawn will create a multi-functional space primarily supporting informal gatherings whilst offering the opportunity to host more formal events.

Sculptural elevated edges to the open lawns will provide necessary opportunities for casual social interaction whilst providing a distinctive and unique character.

Key Principles include:

- Large grassed courtyard providing long views, similar to that of a traditional village green.
- Occasional native or specimen trees within the green. Maximum group of 3, to create focal elements as well as a natural wayfinding feature between spaces.
- Long seating / contemporary benches for student and academic use along key paths

between academic facilities.

- Contemporary street furniture with a collegiate character to compliment the courtyard green.
- Formal parkland tree planting along key routes which compliment the seating and street furniture. Reinforcing connections.
- Provide sufficient cycle parking in accordance with planning, building requirements, and to the ‘*Cycle Parking Guide-For New Residential Developments*’ by Cambridge City Council. Paying attention to dimensions, siting and location

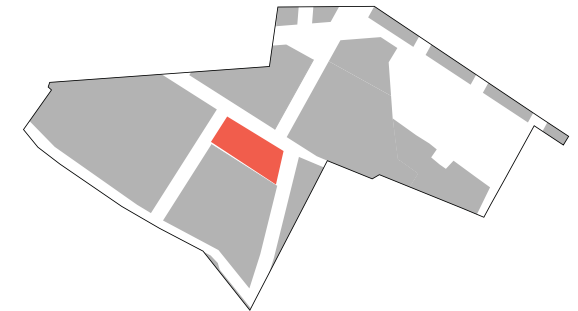


Figure 4.6.11 Location of Academic Square



Integrated seating elements



Expansive open lawn



Expressive integrated seating



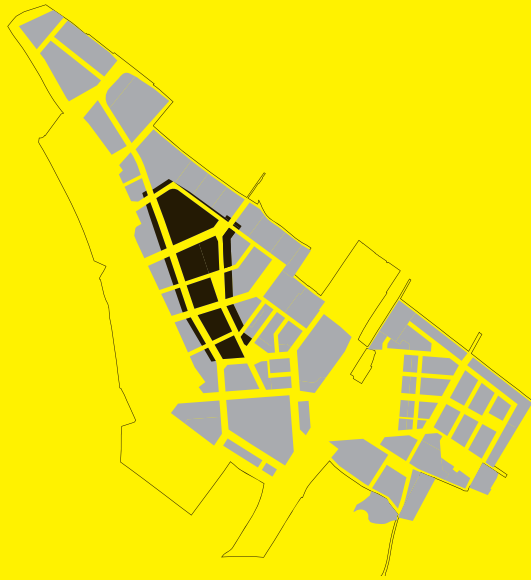
Open views over village green



Long benches frame and encourage social exchange



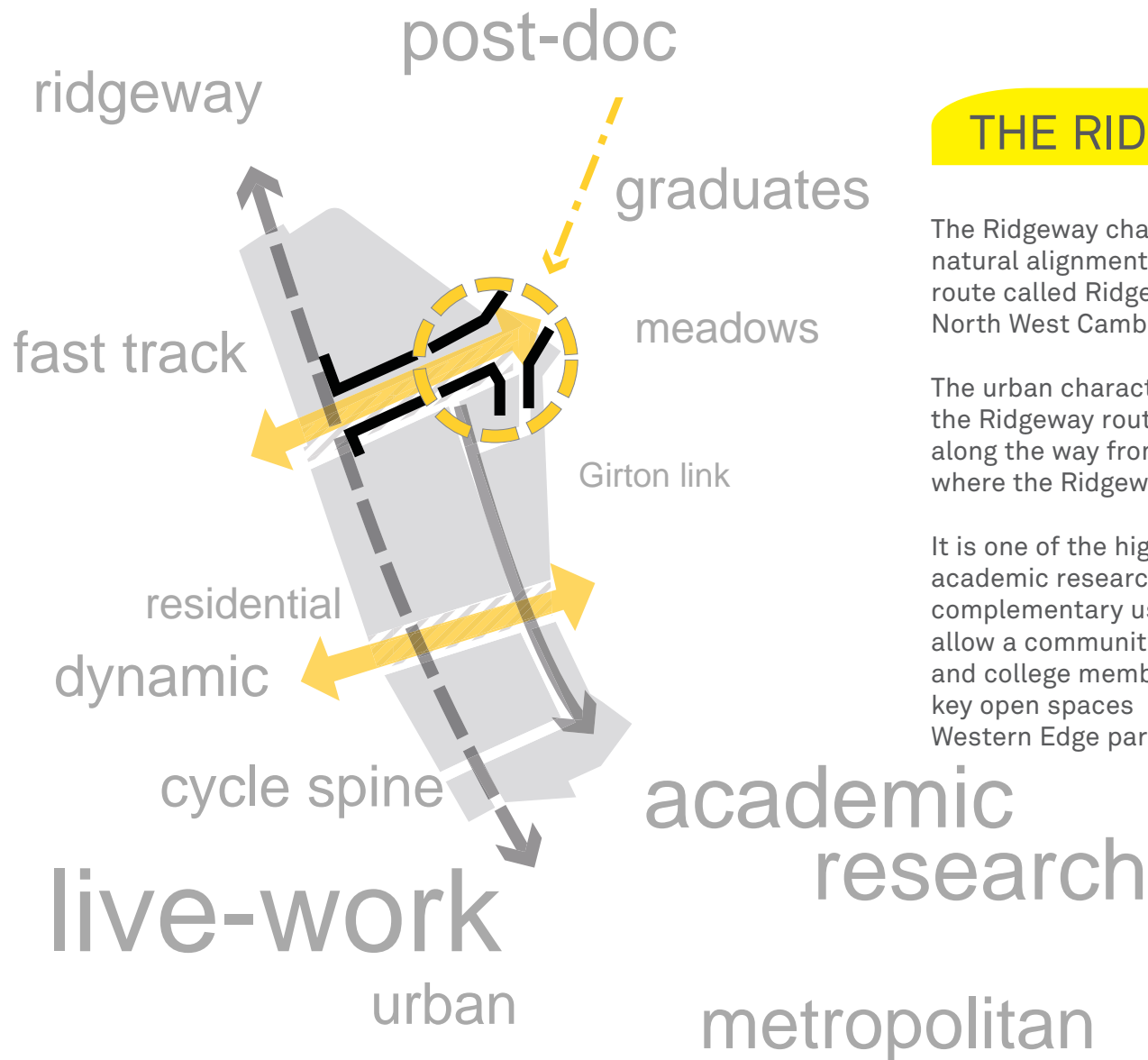
High quality hardscape materials



North West Cambridge

4





## THE RIDGEWAY

The Ridgeway character area sits on the natural ridgeline of the site. This natural alignment is reinforced by the design of a pedestrian and cycle route called Ridgeway. Ridgeway is the key route that links Girton with North West Cambridge and through to Cambridge City Centre.

The urban character is set up by medium rise buildings on both sides of the Ridgeway route. The gentle curve of the route creates serial vision along the way from Girton and the view is terminated at the Local Centre where the Ridgeway route changes direction to run across Storey's Field.

It is one of the higher density quarters with a mixture of residential uses, academic research facilities, collegiate housing and a small element of complementary uses in the form of a local nursery. This mix of use will allow a community of residents, academic researchers and their families and college members to emerge through day-to-day interactions around key open spaces and Green Corridors that connects Ridgeway with the Western Edge parklands.

Figure 4.7.1 Concept of The Ridgeway



Ridgeway as cycling spine



Sustainable lifestyle



Academic research urban environment



Urban living on Ridgeway neighbourhood spine



Work, research and university life



Young post-doctorate family living



Meadows landscape along Ridgeway to encourage local biodiversity and connection to nature within the residential neighbourhood



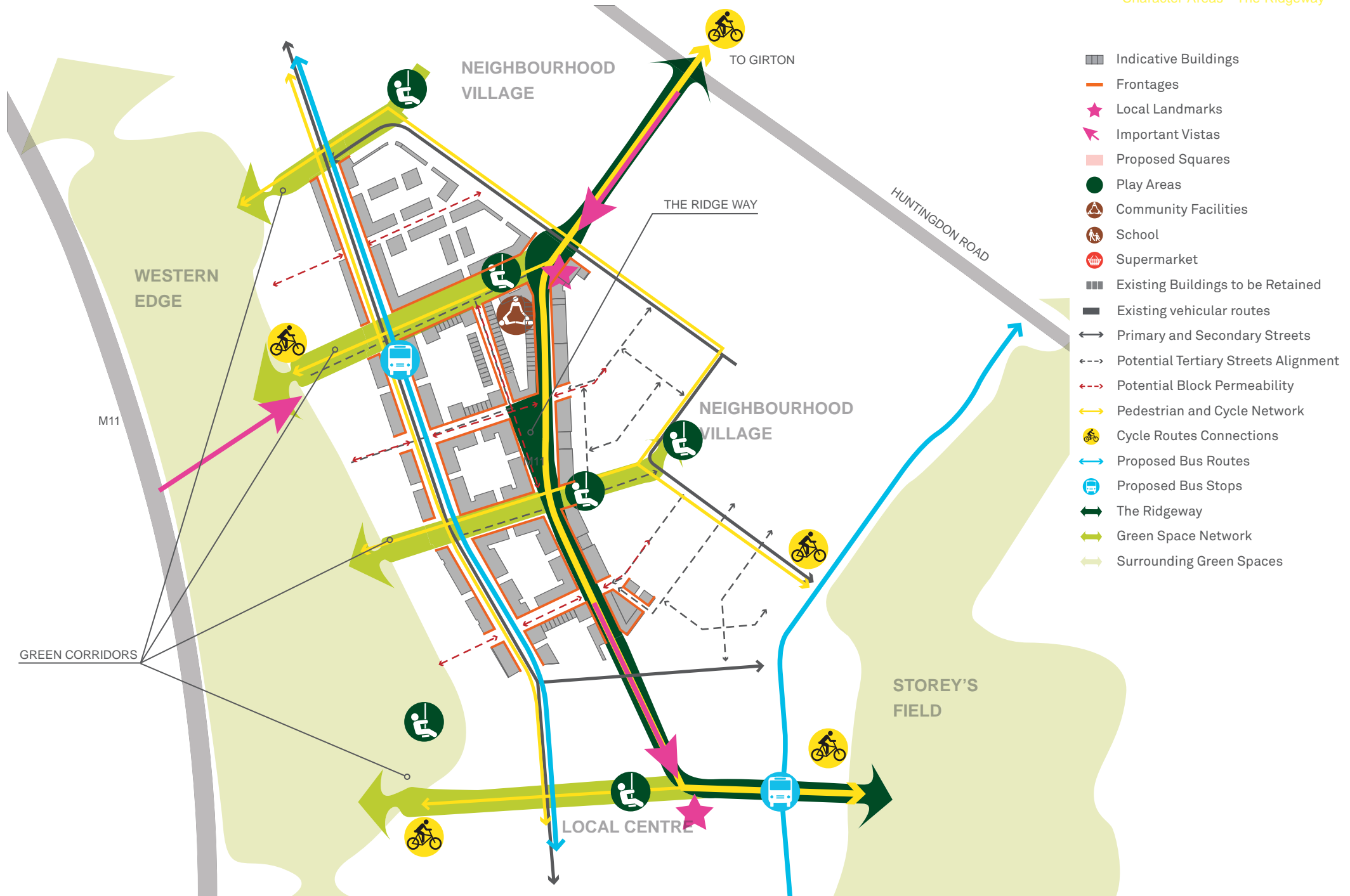


Figure 4.7.2 Character of The Ridgeway

## PLACE-MAKING PRINCIPLES

For the Land Use, Infrastructure and Sustainability layers, the designers must refer to Site Wide Design Codes as set out in Chapter 3. For Urban Structure, Access & Movement and Landscape layers, designers should follow the site wide design codes for the generic principles and the specific intentions set out below within the character area chapter. For relevant character areas, landscape layer has been further detailed to set out the principles for Key Spaces. These form the MANDATORY aspects of the design codes.

### Urban Structure

Given its development context, Ridgeway comprises a range of block types, form and frontage to:

- manage the transition from Local Centre to Neighbourhood Village
- create good scale urban forms around key spaces
- set up clear distinction between public and private domain through the use of a variety of perimeter blocks.

Please continue to page 220-221 for more details. Also refer to Table 4.7.1 opposite for block typologies reference from Chapter 3.

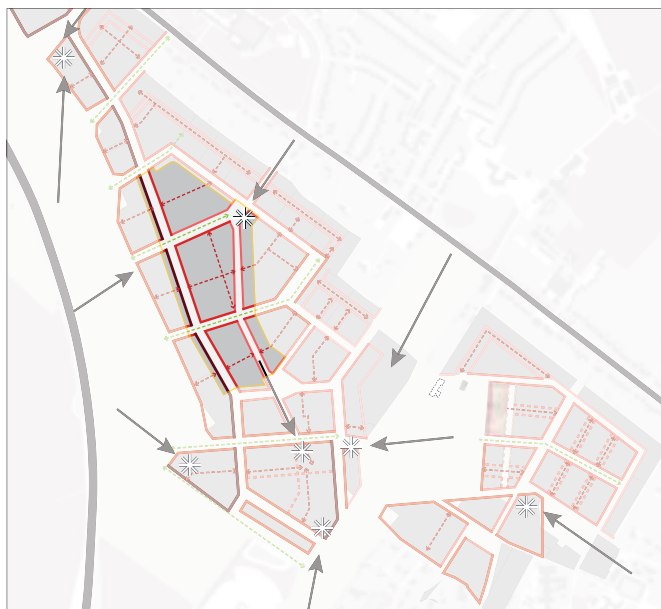


Figure 4.7.3 Urban Structure

### Access and Movement

Each of the neighbourhood is well connected with the vehicular network through a series of primary, secondary and tertiary streets. Equally strong is a network of pedestrian and cycle routes that connects Ridgeway with adjacent character areas. The Primary street runs along the Western perimeter of Ridgeway connecting it North South with Local centre and North-West Corner.

Refer to Table 4.7.1 opposite for street typologies reference from Chapter 3. Also see The Ridgeway on page 68 within Section 3.3 Access and Movement.

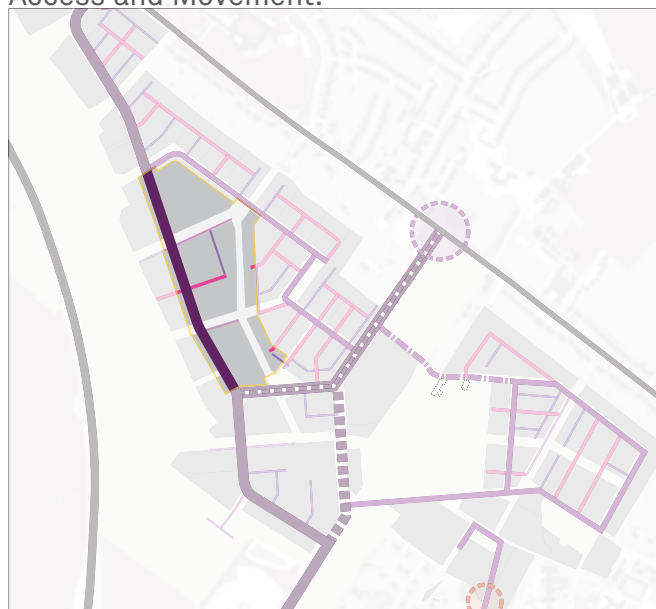


Figure 4.7.4 Street Hierarchy

### Landscape

In addition to strong streetscape design, special landscape features in the form of Green Corridors and Play areas are part of this character area.

The Ridgeway runs along the length of it connecting the pedestrians and cyclists from the Local Centre to Neighbourhood Village in the North and Madingley Rise to the South.

Refer to Table 4.7.1 opposite for landscape typologies reference from Chapter 3. Also see

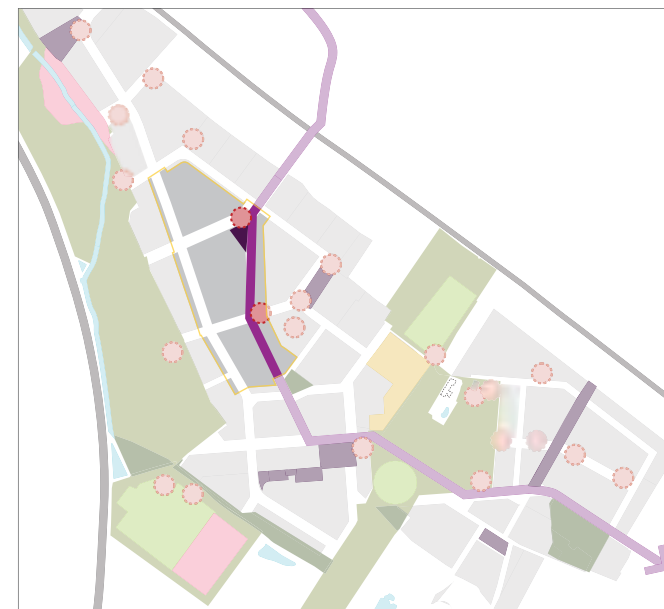
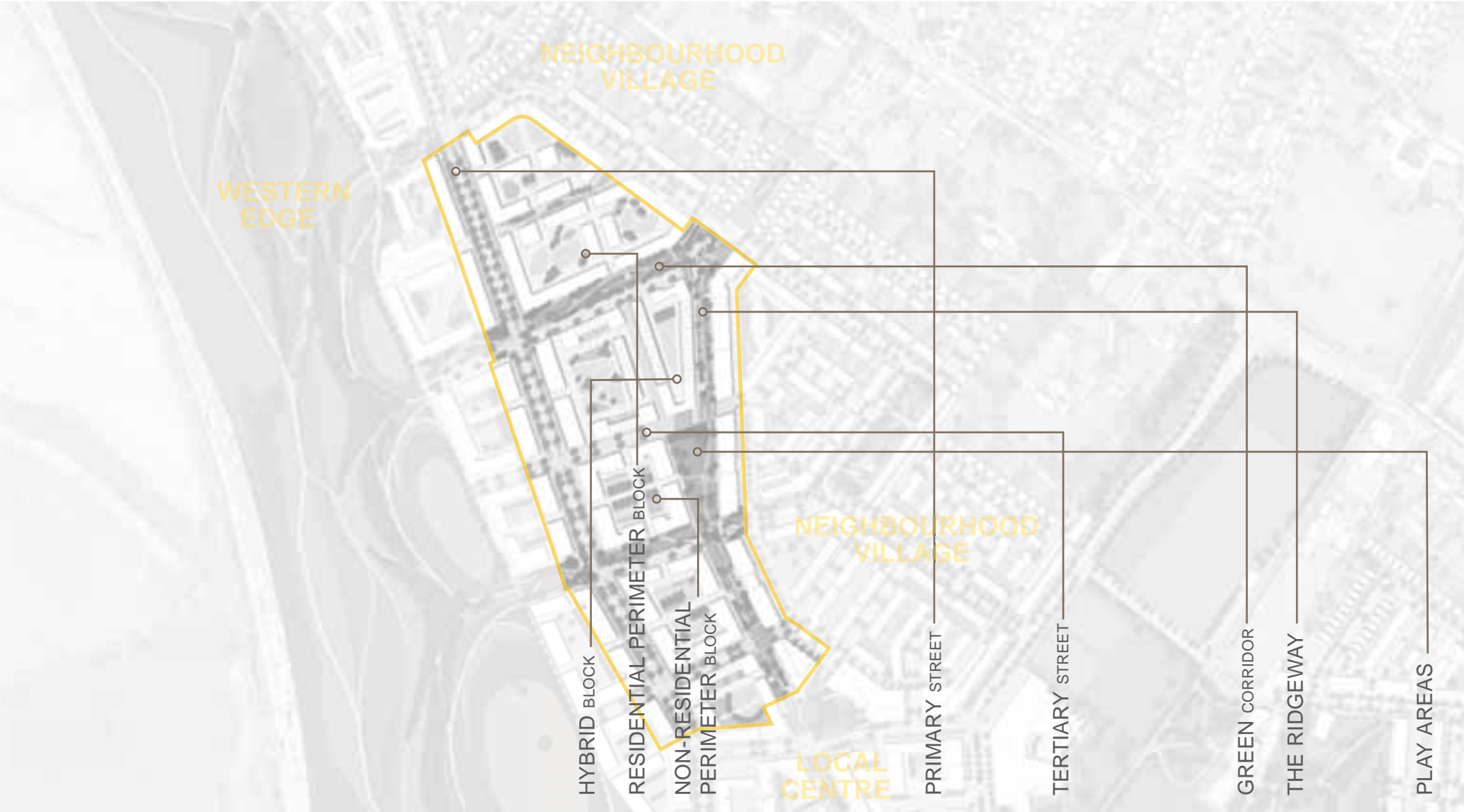


Figure 4.7.5 Landscape and Key spaces





CHARACTER AREAS	BLOCKS										STREET				LANDSCAPE				
	01	02	03	04	05	06	07	08	09	10	01	02	03	04	01	02	03	04	05
THE RIDGEWAY					●	●	●				●		●			●	●		●
Refer to pages in Site Wide					p40	p41	p42		p44		p56		p60			p92	p68, p102		p116

Table 4.7.1 The Ridgeway Navigation Table

# Block Structure

Within Ridgeway character area, the urban blocks are defined by primary street to the West, the Ridgeway to the East and the Green Corridors running East-West and intersecting these streets. Further permeability should be achieved to maintain appropriate grain and scale as indicated by red arrows below.



Figure 4.7.6 Block Structure

# Frontage

The frontages respond to the use, street hierarchy and surrounding context. To the West, the frontages on primary street form the street with perimeter blocks. Towards the East the house typologies dictate the frontage are more flexible towards achieving a looser grain in response to Neighbourhood Village

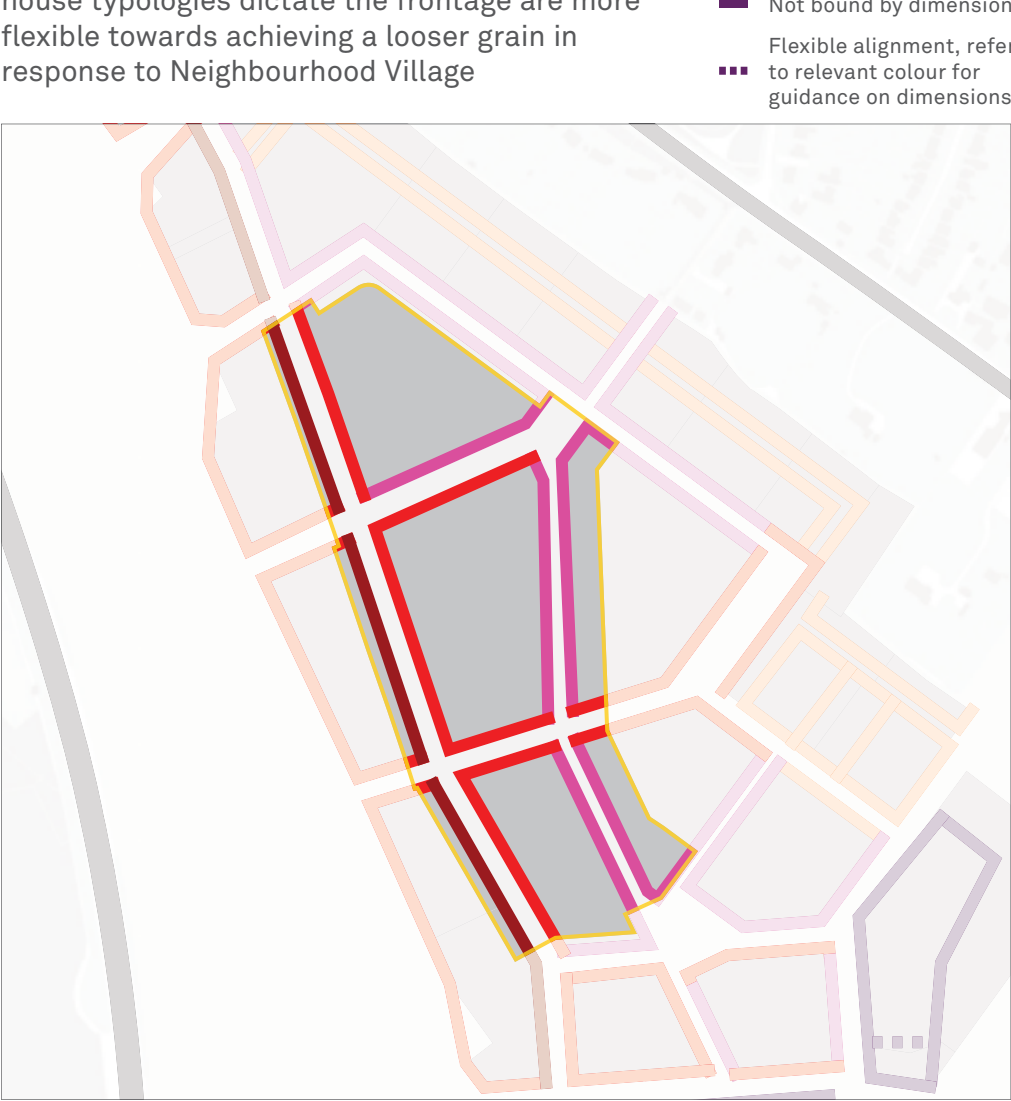


Figure 4.7.7 Frontages

## Height and Massing

Building heights respond to the street type and surrounding context. In the case of Ridgeway, taller buildings are fronting the Primary street and Ridgeway and are also clustered to the South towards Local Centre whereas the heights decrease towards the North.

- 1/2 storeys generally
- 2 storeys generally
- 2/3 storeys generally
- 3 storeys generally
- 3/4 storeys generally
- 4 storeys generally
- ✱ Landmarks

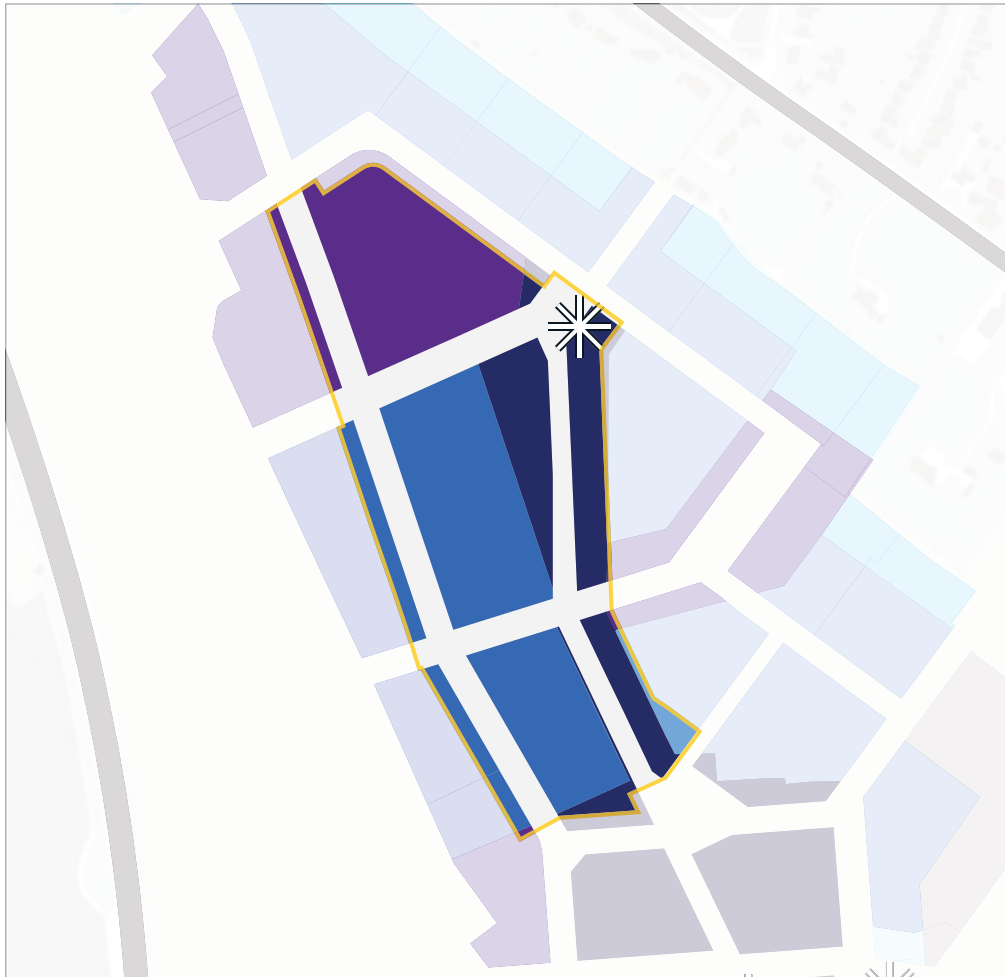


Figure 4.7.8 Massing and Landmarks

## Block Typology

Ridgeway character area is urban and closest to the Local Centre in terms of density with all blocks as perimeter blocks, some residential use, some non-residential and others hybrids with varied house typologies.

- Block Type 1 - Development Edge
- Block Type 2 - Access Mews
- Block Type 3 - Central Communal Courtyard
- Block Type 4 - Back to Back Rear Garden
- Block Type 5 - Hybrids
- Block Type 6 - Residential Perimeter Block
- Block Type 7 - Non-Residential Perimeter
- Block Type 8 - Local centre Mixed Use
- Block Type 9 - Linear Block
- Block Type 10 - Special Block



Figure 4.7.9 Block Types







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North West Cambridge  
**Bringing It All Together**



## 5.1 INTRODUCTION

In Chapters 3 and 4, design codes are structured around thematic layers of land use, urban structure, access & movement, landscape and infrastructure. Typologies for urban components are set out in terms of:

- Street Types (page 51)
- Block Types (page 32)
- Parking Types (page 75)

The Site Wide and Character Areas Matrix (Table 5.1) illustrates at a glance how site wide typologies are applied locally.

This chapter focuses on bringing all these components together and demonstrates:

- the resulting urban form and urban environment scenarios and
- the relationship between character areas along their edge conditions.

CHARACTER AREAS	BLOCKS										STREETS				LANDSCAPE				
	Development Edge	Access Mews	Communal Courtyard	Back to Back Rear Gardens	Hybrid Block	Residential Perimeter	Non-Residential Perimeter	Local centre Mix Use	Linear Block	Special Block	Primary Street	Busgate Street	Secondary Street	Tertiary Street	Western Edge, Gilton Gap (Primary Open Land)	Green Corridors (Secondary Open Land)	Ridgeway	Key Spaces (Secondary Open Land)	Community Infrastructure (Play Spaces)
	01	02	03	04	05	06	07	08	09	10	01	02	03	04	01	02	03	04	05
STOREY'S FIELD					●				●	●	●		●		●		●		●
NEIGHBOURHOOD VILLAGE	●	●	●	●	●								●	●		●	●	●	●
LOCAL CENTRE						●		●	●	●	●	●	●	●		●	●	●	●
WESTERN EDGE						●	●		●		●				●	●			●
NORTH-WEST CORNER										●	●			●		●			
MADINGLEY RISE					●		●						●					●	
THE RIDGEWAY					●	●	●				●		●			●	●		●

Table 5.1 Site Wide and Character Areas Matrix

## 5.2 SAMPLE SCENARIO

### Bringing It All Together - The Block - Navigation Scenario

This example demonstrates how one could navigate across the document, between chapters to get to relevant and important information easily.

The site wide chapter includes tables setting out typologies for streets, blocks, landscape, parking etc. in a comprehensive manner for ease of reference.

Once, the particular block to be designed is located within the character area, the character area navigation matrix gives a snapshot of which block types, street types and landscape types figure within that character area.

The site wide typology tables set out the principles for designing these spaces, followed by detail design guidance within the site wide section related to strategies for car parking, cycling, waste management, SuDS etc.

More details and exceptions can be found in the character area section which sets out the unique features of any particular area within the masterplan.

More guidance on putting together a block in detail is provided on the following pages.

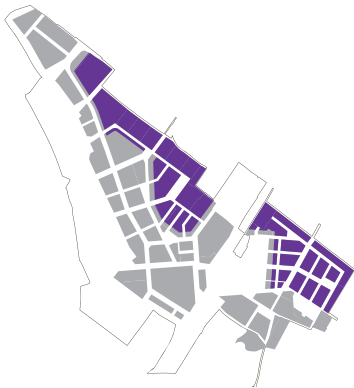


Figure 5.1 Neighbourhood Village

### Street Typology Table - Site Wide

Table 3.3

--

### Block Typology Table - Site Wide

Table 3.1

--

### Parking Typology Table - Site Wide

Table 3.11

--



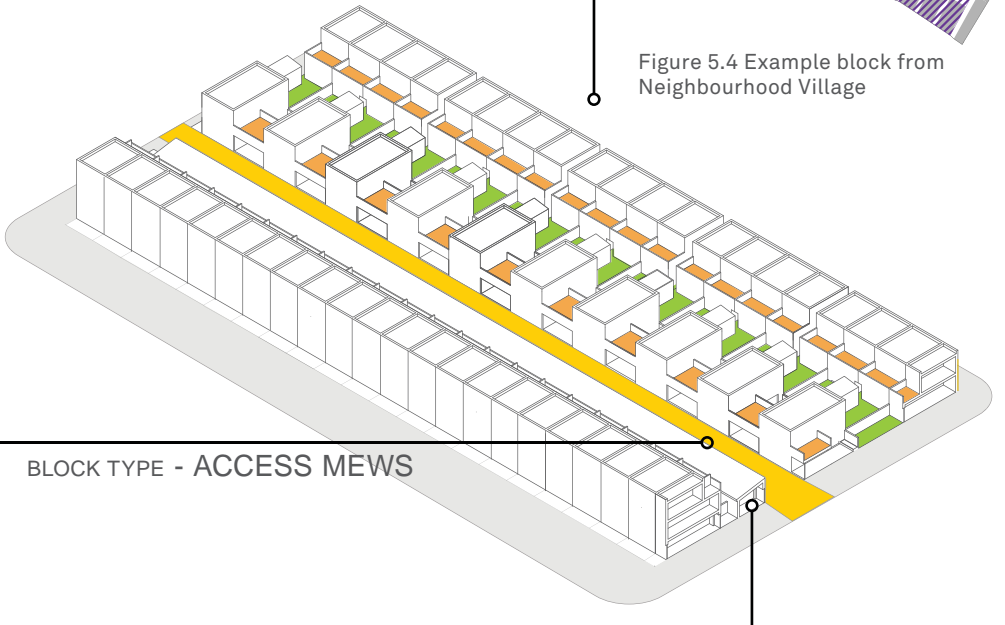
	Street Typology	Street Dimensions										Access & Parking				Vehicle Requirements																																																																																																																																																																																																																																																																																																																																																																																																																																			
		Primary Street Width	Secondary Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street Width	Access Street 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SECONDARY STREET

Figure 5.4 Example block from Neighbourhood Village

		Perimeter Blocks		Central Perimeter Blocks		Back to Back Perimeter Blocks		Hybrids		Central Perimeter Blocks		Team/Neighbourhood Perimeter Blocks		Local Centre Mixed Use		Linear Block		Special Block	
Block Typology	Development Edge	2 Access Streets	Central Perimeter Blocks	Central Perimeter Blocks	Back to Back Perimeter Blocks	Hybrids	Central Perimeter Blocks	Team/Neighbourhood Perimeter Blocks	Local Centre Mixed Use	Linear Block	Special Block								
Plan																			
Character Area																			
Neighbourhood																			
Local Centre																			
Neighbourhood																			
Neighbourhood																			
Design Details																			
Building Typology	Detached, Semi-detached, Terrace houses, apartments	Terrace houses and Duplex, Semi-detached	Office houses, Duplex and Apartments	Semi-detached, Terrace houses, Duplex and Apartments	Terrace houses, Duplex, Mews and Apartments	Duplex, Apartments, Student Housing, Colleges, Senior Care	Academic / Commercial Research	Local Centre Mixed Use	Local Centre Mixed Use	Community, School, Energy Centre, Supermarket									
Continuous, Street Frontage	Fragmented frontage with occasional breaks	Continuous frontage with occasional breaks, which also provide mews access points. Along mews, frontage is continuous as possible.	Continuous frontage with minimum breaks, length range 10-15m	Continuous frontage with occasional breaks	Continuous frontage with occasional breaks, which also provide mews access points. Along mews, frontage is continuous as possible.	Continuous frontage with occasional breaks	Continuous frontage with occasional breaks	Continuous frontage with minimum breaks	Continuous frontage with minimum breaks	Continuous frontage with minimum breaks									
Height of Building	Generally low lying with buildings height about 3-5 storeys high	Generally low lying with buildings along mews (flat 3 storeys tall, perimeter buildings may be 3-5 storeys)	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard									
Layout (Design Note)	Houses along streets and private back garden extend the edge of development	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.									

		Perimeter Blocks		Central Perimeter Blocks		Back to Back Perimeter Blocks		Hybrids		Central Perimeter Blocks		Team/Neighbourhood Perimeter Blocks		Local Centre Mixed Use		Linear Block		Special Block	
Block Typology	Development Edge	2 Access Streets	Central Perimeter Blocks	Central Perimeter Blocks	Back to Back Perimeter Blocks	Hybrids	Central Perimeter Blocks	Team/Neighbourhood Perimeter Blocks	Local Centre Mixed Use	Linear Block	Special Block								
Plan																			
Character Area																			
Neighbourhood																			
Local Centre																			
Neighbourhood																			
Neighbourhood																			
Design Details																			
Building Typology	Detached, Semi-detached, Terrace houses, apartments	Terrace houses and Duplex, Semi-detached	Office houses, Duplex and Apartments	Semi-detached, Terrace houses, Duplex and Apartments	Terrace houses, Duplex, Mews and Apartments	Duplex, Apartments, Student Housing, Colleges, Senior Care	Academic / Commercial Research	Local Centre Mixed Use	Local Centre Mixed Use	Community, School, Energy Centre, Supermarket									
Continuous, Street Frontage	Fragmented frontage with occasional breaks	Continuous frontage with occasional breaks, which also provide mews access points. Along mews, frontage is continuous as possible.	Continuous frontage with minimum breaks, length range 10-15m	Continuous frontage with occasional breaks	Continuous frontage with occasional breaks, which also provide mews access points. Along mews, frontage is continuous as possible.	Continuous frontage with occasional breaks	Continuous frontage with occasional breaks	Continuous frontage with minimum breaks	Continuous frontage with minimum breaks	Continuous frontage with minimum breaks									
Height of Building	Generally low lying with buildings height about 3-5 storeys high	Generally low lying with buildings along mews (flat 3 storeys tall, perimeter buildings may be 3-5 storeys)	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard	Generally low lying, maximum 3 storeys from streets, internal commercial courtyard									
Layout (Design Note)	Houses along streets and private back garden extend the edge of development	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.	Buildings along perimeter with mews running into the block providing access to internal building.									



BLOCK TYPE - ACCESS MEWS

PARKING TYPE - INTEGRAL GARAGES

Figure 5.2 Extract of Typology Tables from Site Wide Chapter

Figure 5.3 Application of Assigned Typology in Design

# Understanding the Code and Design Intent

## 1 Understanding the Development and Site



Figure 5.5 Aerial photo with Site Boundary



Figure 5.6 Illustrative Masterplan view



Figure 5.7 North West Cambridge Design Code

Please refer to Chapter 1 Introduction from page 1.

## 2 Locating the block at site wide level and character area

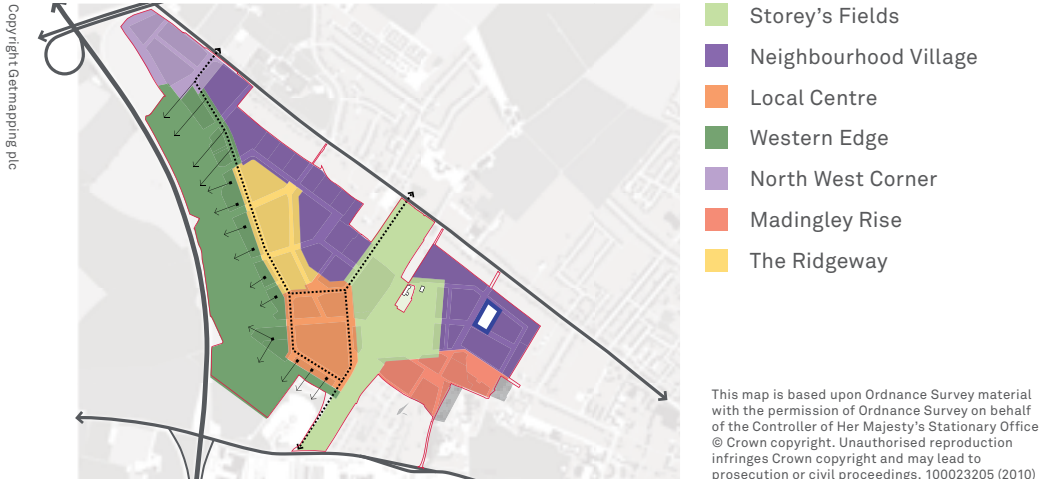


Figure 5.8 Character Areas



Figure 5.9 Extract of the Character of Neighbourhood Village

Please refer to Chapter 4 Character Areas from page 147.

### 3 Understanding the block in context

Context from Chapter 4  
Character Areas

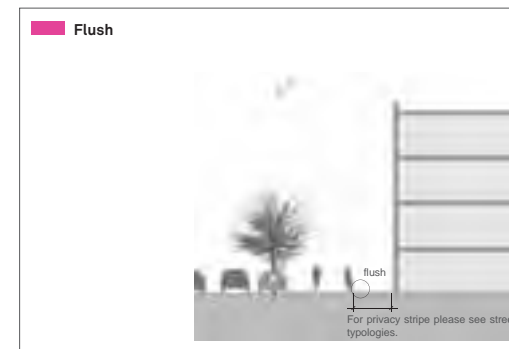
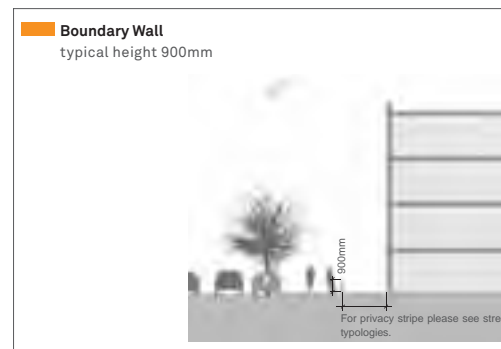
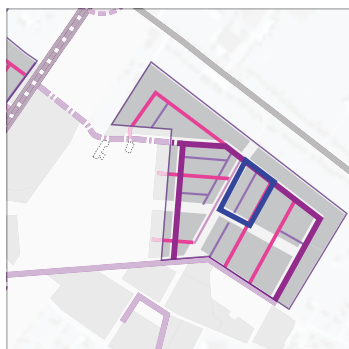
Navigation Table from  
Chapter 4 Character Areas

Typologies of different  
elements from Chapter 3  
Site Wide Design Code



Please refer to Chapter 4 Character Areas from page 147 & Chapter 3 Site Wide Design Code from page 23.

## 4 Detail Design Guidenace, Opportunities and Constraints



### Street

#### Access & Movement

#### → Street Hierarchy & Typology

#### → Pedestrian & Cycling

#### → Parking

### Infrastructure

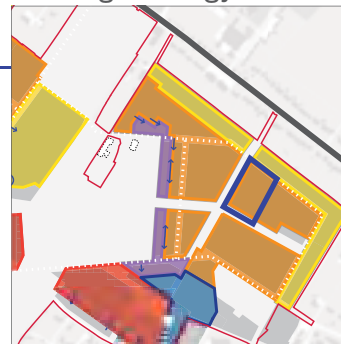
#### → SuDS Strategy

#### → Waste & Bin Strategy

### Interface

#### → Boundary Treatment

### Parking strategy



- Primary Street Waste Storage Location
- Tertiary Street Waste Storage Location
- Assumed collection direct from "Development Edge" properties
- ➔ Through plot travel route

Understanding how site wide strategies may impact design decisions within the block, the constraints and opportunities these may bring.

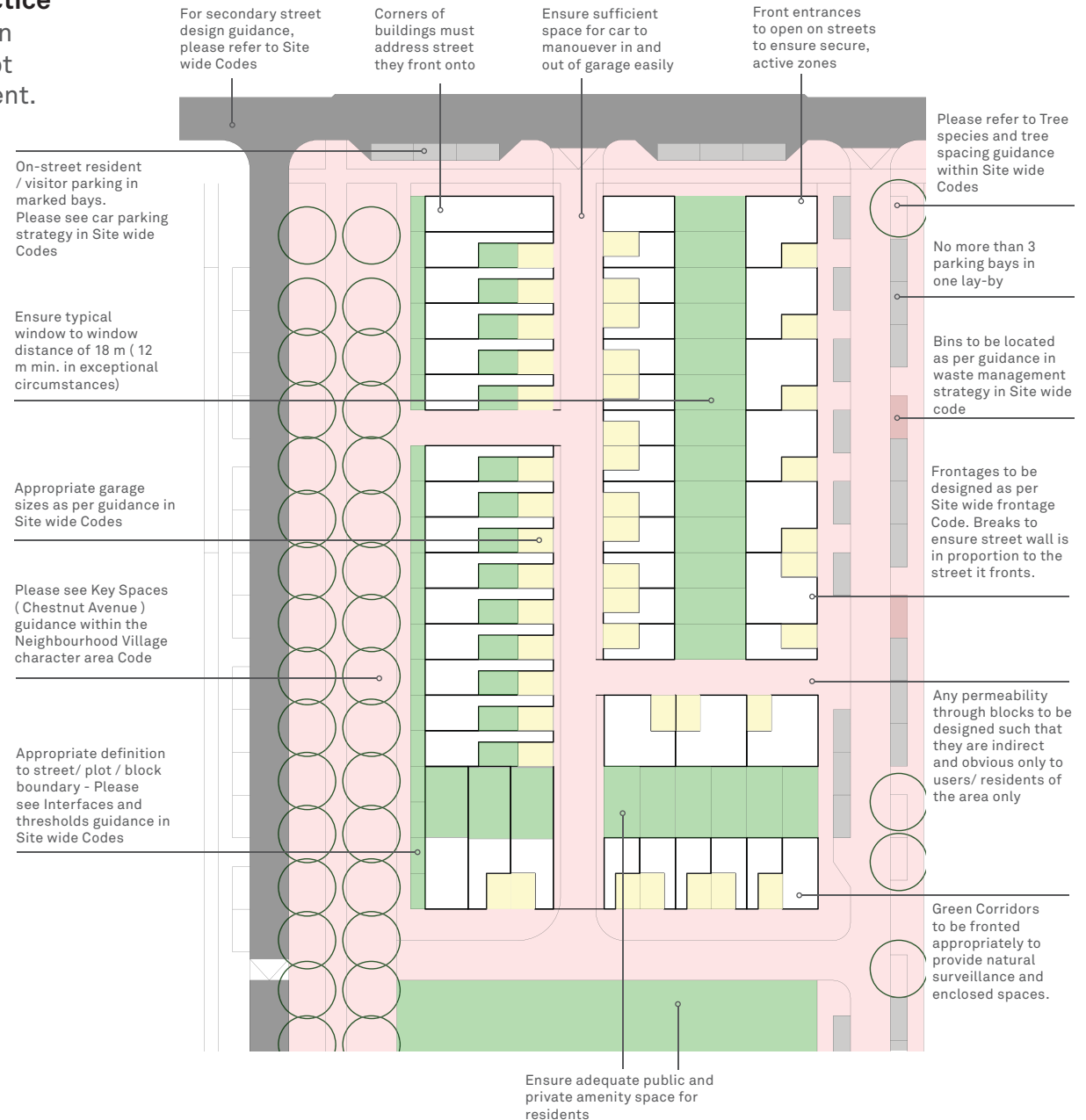
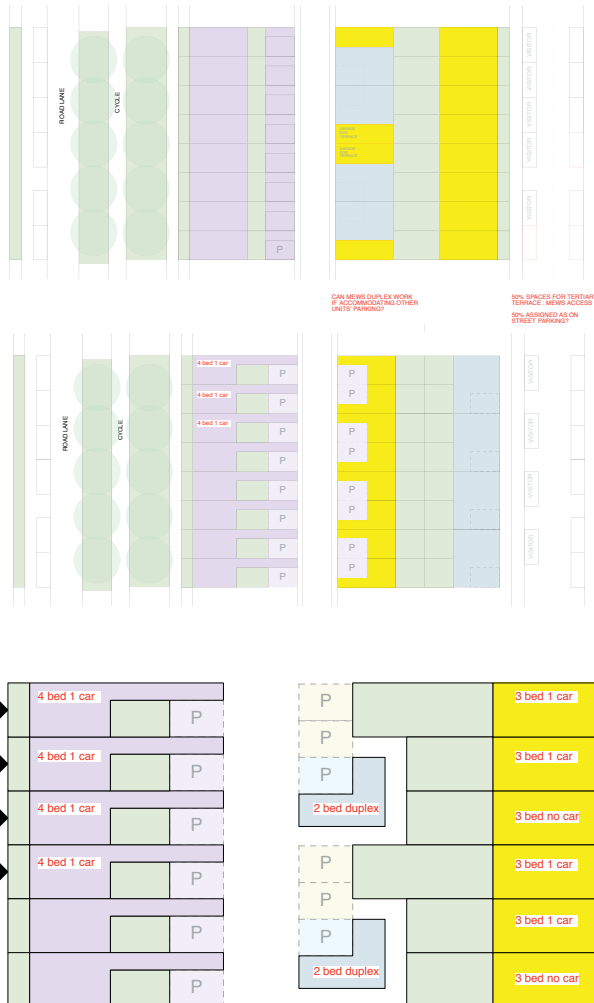
- "Development Edge" dwellings have on-plot parking provision at required standard
- Access Mews typologies accommodate parking options

Please refer to Chapter 3 Site Wide Design Codes from page 23.



## 5 Options Development and block layout as per best practice

Shown below are attempts to resolve the parking provision in an Access Mews block situation and a best practice plot assembly with cross-references to the rest of the document.



Please refer to Chapter 3 Site Wide Design Codes from page 23.

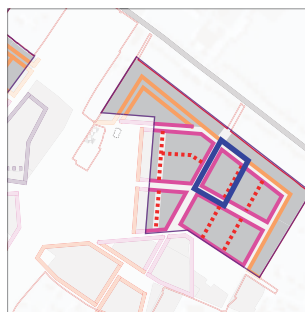
## Bringing It All Together - The Block - Detail Scenario

This example demonstrates how urban blocks are put together and how the design codes are used as context for scheme designs to emerge. It is anticipated that the potential for infinite permutations will be limited by *Design Briefs* in terms of dwelling numbers and development quantum.

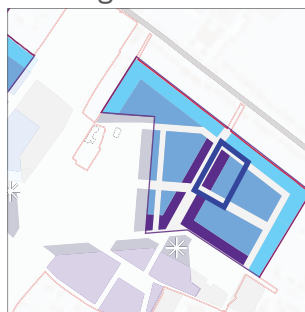
In this scenario, An urban perimeter block is used in Neighbourhood Village character area to illustrate how urban blocks can be put together by applying the site wide typologies. The logic of setting up an urban block is set out below in sequential order:

1. The development and **site context**, sustainability goals are understood from Chapter 1.
2. The block is located and studied within the **character area** - in this instance Neighbourhood Village.
3. Secondary **Street** and Mews define the widths of the highway corridors and therefore block dimensions are set in conjunction with parameters set within the *Description of Development*.  
**Block** Types and Principles provides further block definitions in terms of block subdivision, height & massing, block types, frontage and block servicing.
4. Detail design guidance is referred to from the site wide **parking** typologies applied in relation to the relevant street types, the **waste** collection system, the **SuDS** strategy.
5. Detail **options** can be developed with above constraints and design guidance and a block put together to best practice standards.  
**Thresholds and interfaces** are applied in relation to the relevant street types.
6. Potential design refinement could consider **massing**, **roofline**, **streetscape** resolution
7. Responding to immediate surroundings results in design refinement.

## 6 Potential design interpretation and refinement



Frontage



Building Height



- Regular rhythm of front doors
- Integral parking to Mews
- Continuous block frontage (30-60m)
- Private amenity for Mews Houses
- Use of private amenity opportunities at roof level

Please refer to Chapter 3 Site Wide Design Codes from page 23.

## 7 Responding to Immediate Context - response to adjacent blocks and character areas where applicable

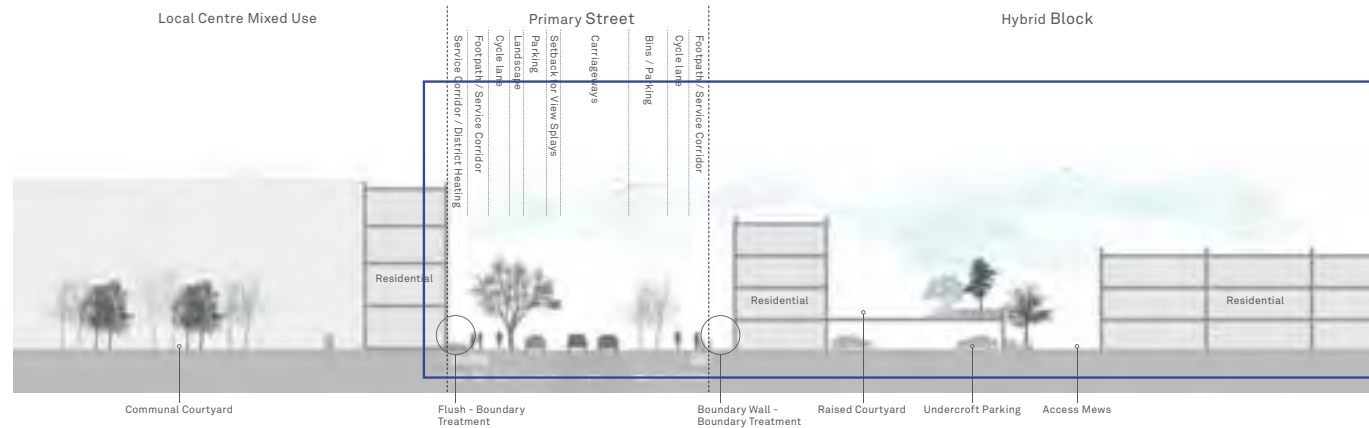


Figure 5.10 Design Code section from Chapter 5 Bringing it All Together, Section 5.3 Development Edge on page 234



Figure 5.11 Architect's Section Responding to Immediate Context



Figure 5.12 Sketches of the surrounding context

Please refer to Chapter 3 Site Wide Design Codes from page 23 & Chapter 5 Bringing It All Together from page 223.

## 5.3 DEVELOPMENT EDGE

The intent in running the boundaries of Character Areas within urban blocks is to ensure that streets are well co-ordinated and avoid the change in urban characters being expressed on two sides of a street.

In addition, it is important to cut across Character Areas to ensure that the transition between private and public domains are well-defined. This sections, therefore, comprise 10 cross-sections which express the typical relationships across Character Areas and draws out specific design codes that need to be observed when difference development phases are implemented. Annotations on these cross-sections form the mandatory requirements.

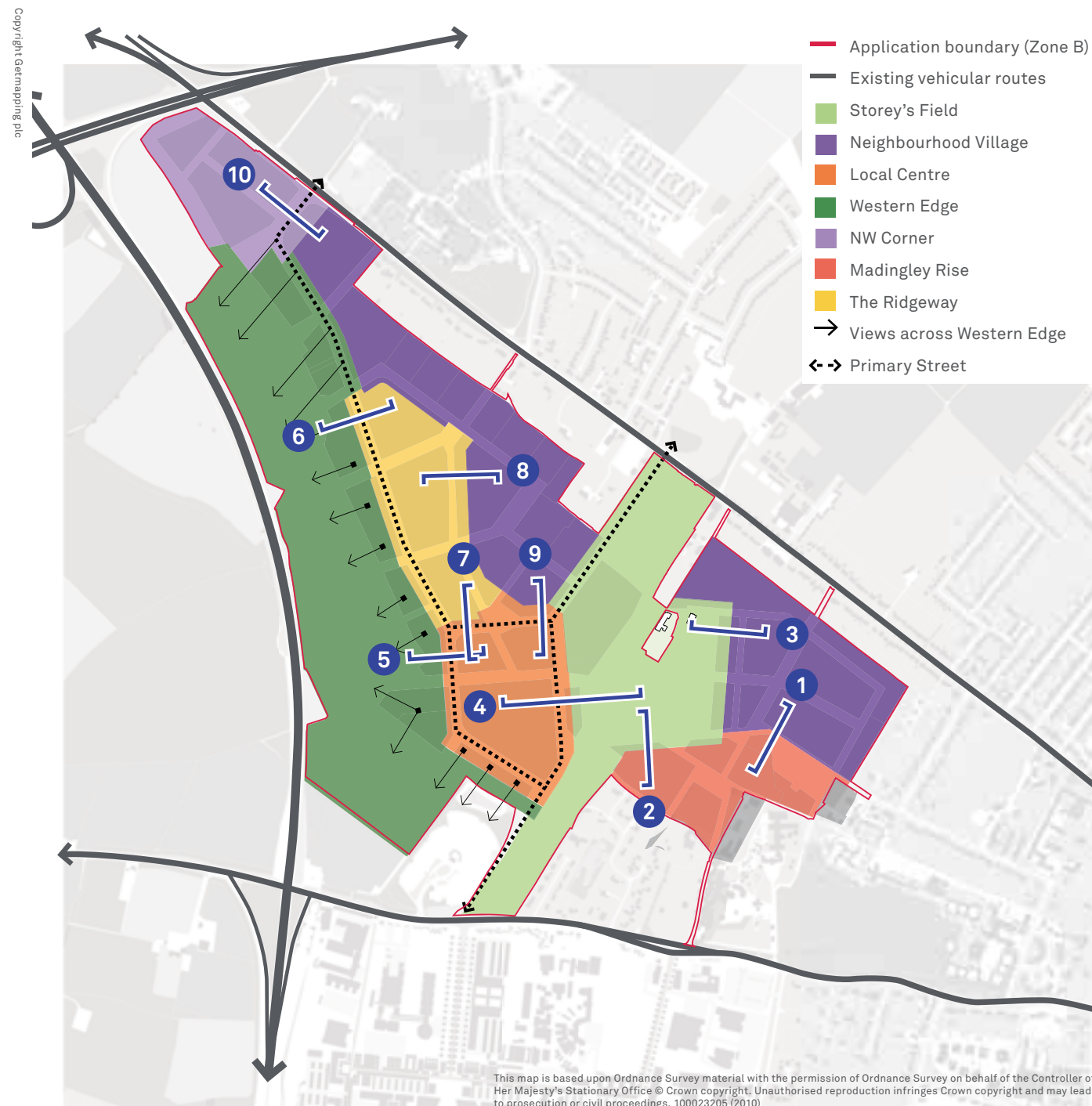


Figure 5.13 Character Areas



# 1. Neighbourhood Village & Maddingley Rise

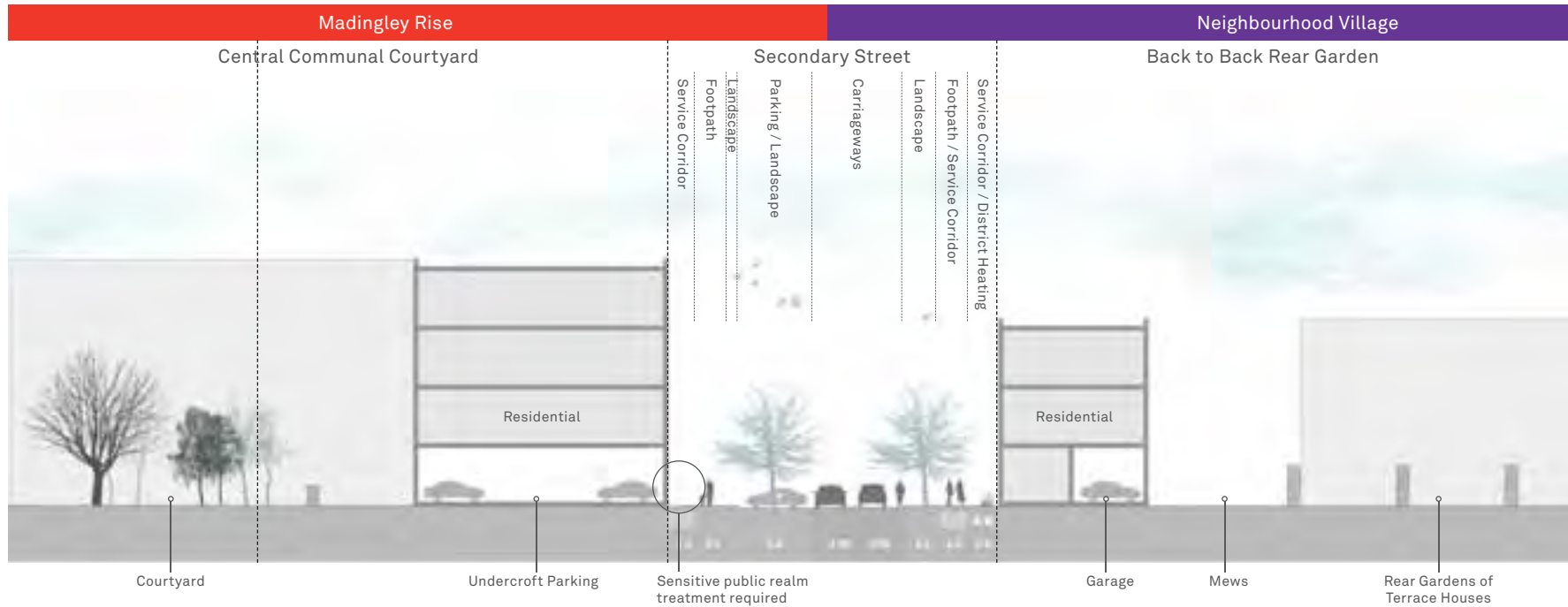


Figure 5.14 Section through Neighbourhood Village and Maddingley Rise

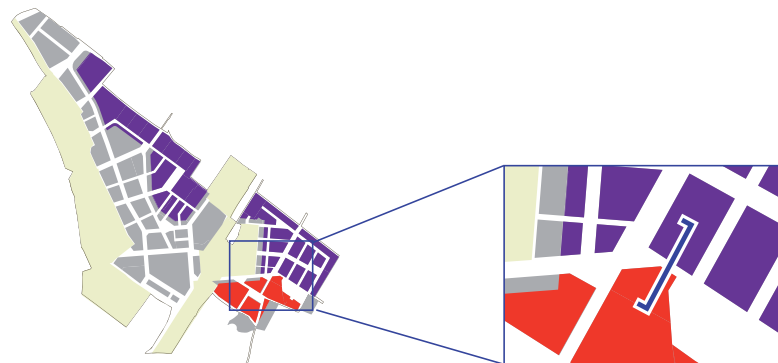


Figure 5.15 Key Plan

## 2. Madingley Rise & Storey's Field

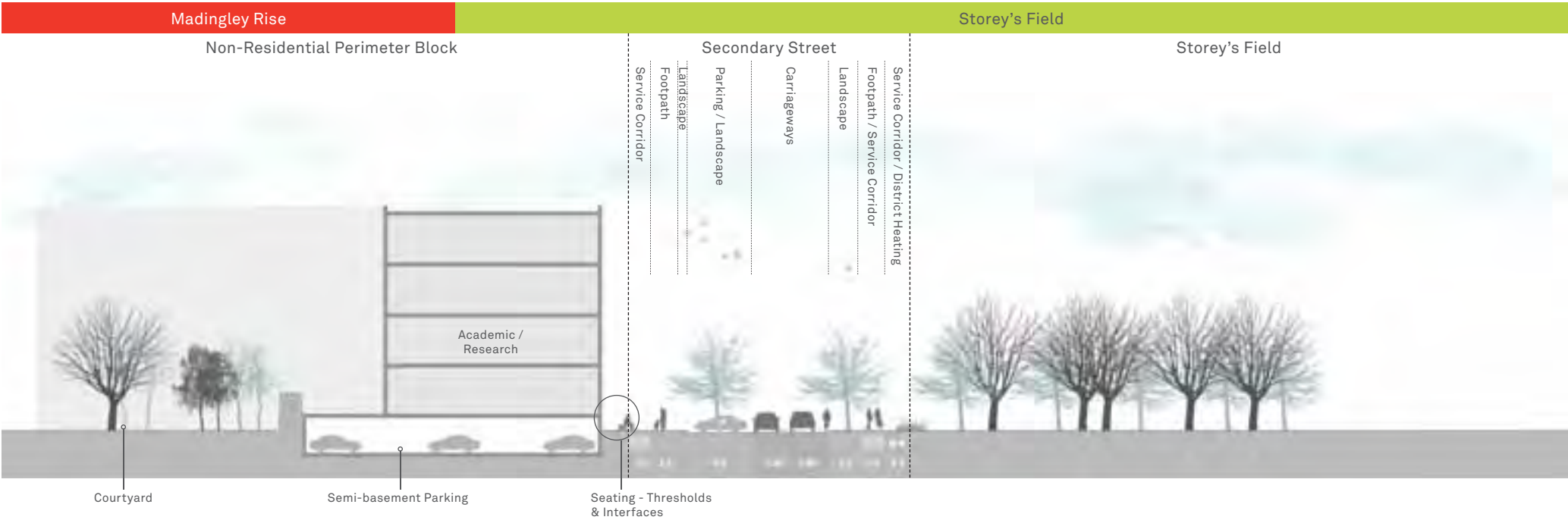


Figure 5.16 Section through Madingley Rise and Storey's Field

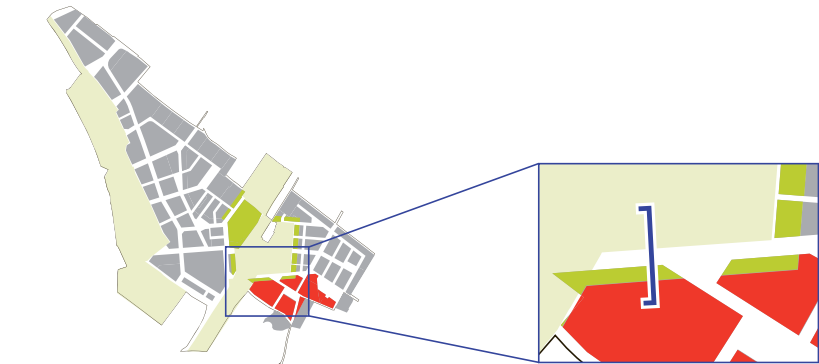


Figure 5.17 Key Plan

### 3. Storey's Field & Neighbourhood Village

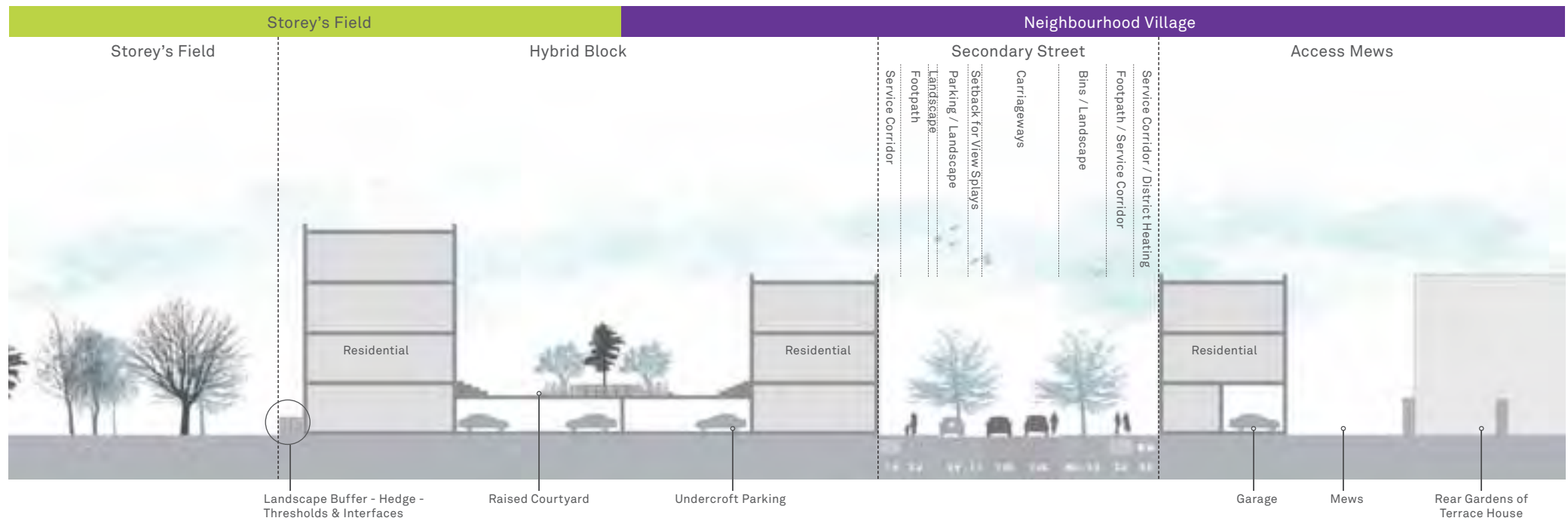


Figure 5.18 Section through Storey's Field and Neighbourhood Village

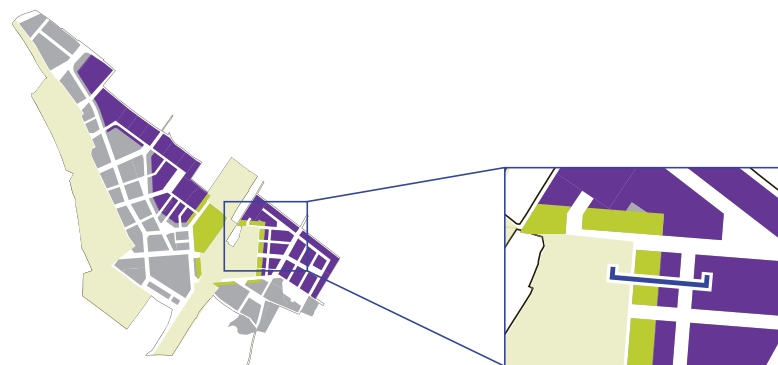


Figure 5.19 Key Plan

# 4. Storey's Field & Local Centre

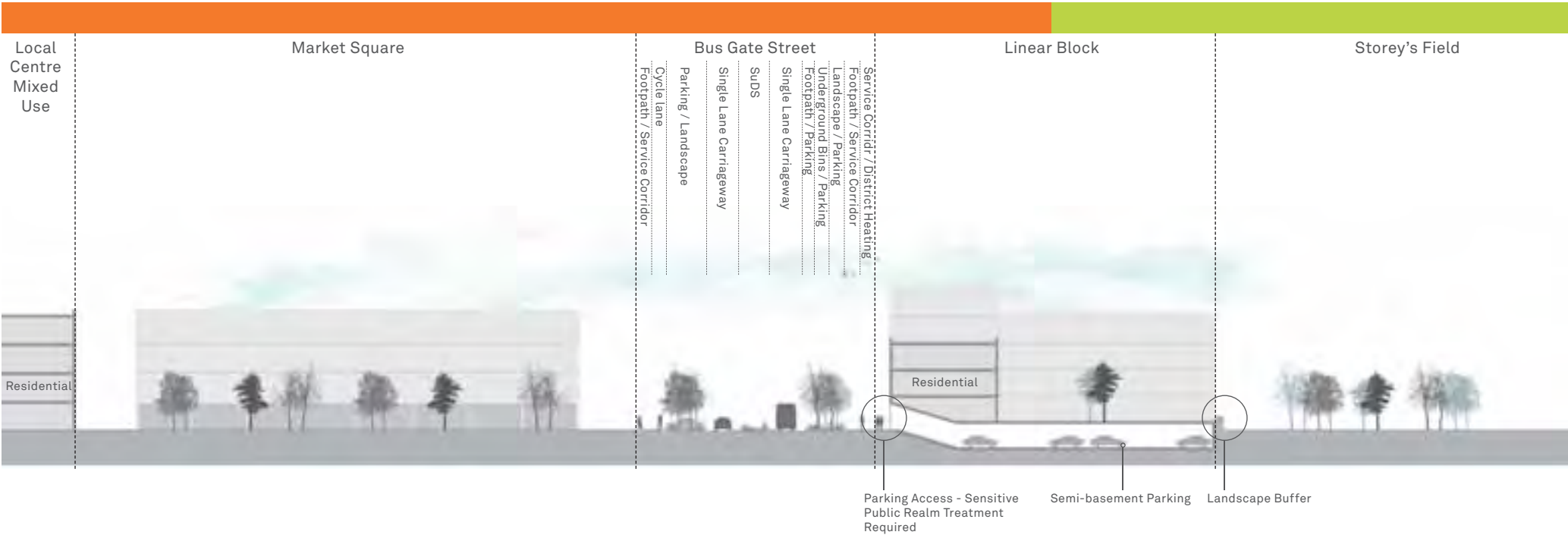


Figure 5.20 Section through Storey's Field and Local Centre

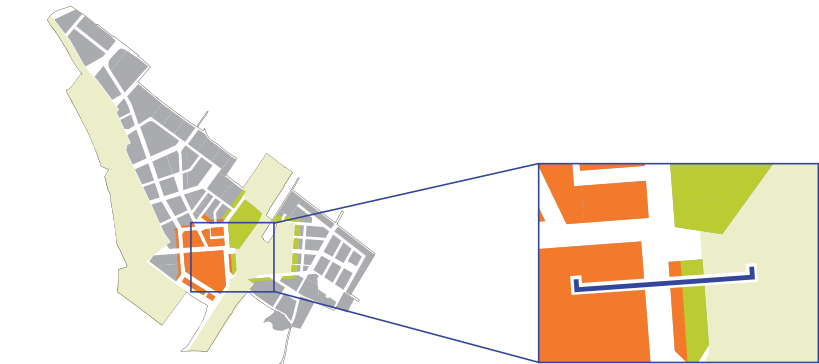


Figure 5.21 Key Plan



## 5. Local Centre & Western Edge

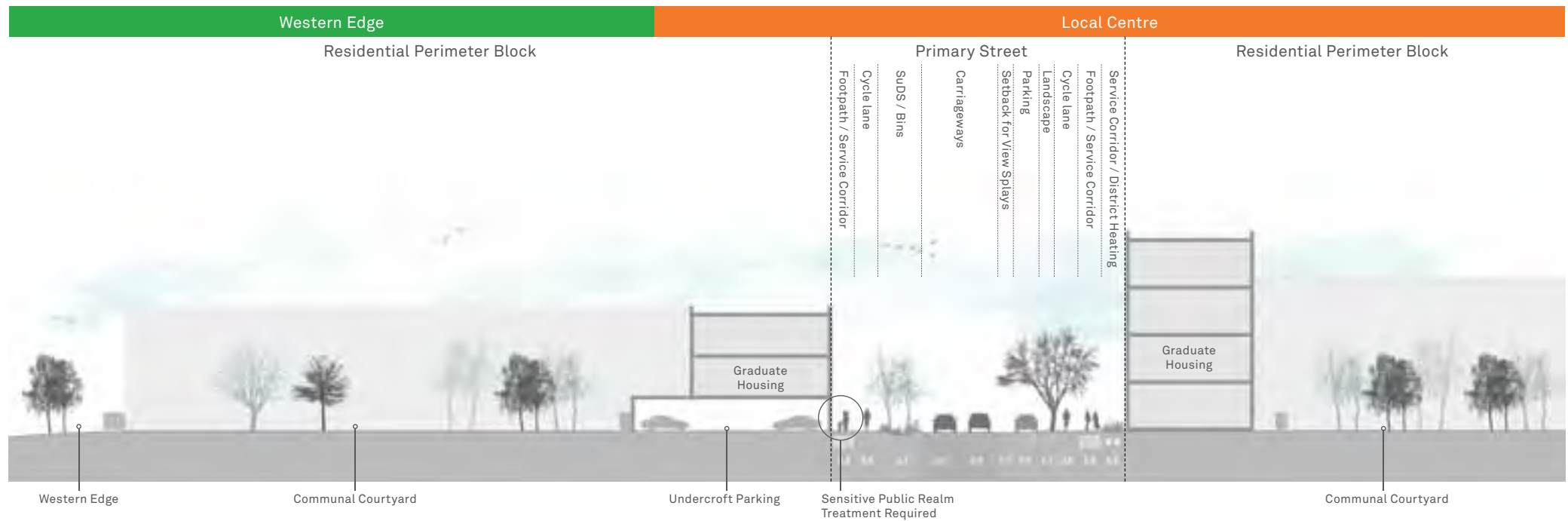


Figure 5.22 Section through Local Centre and Western Edge

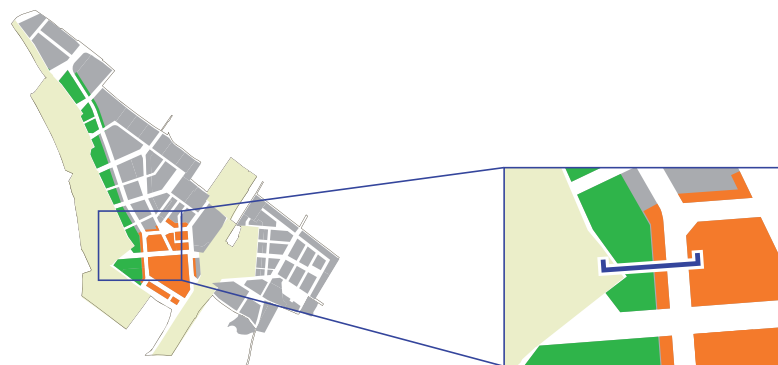


Figure 5.23 Key Plan

## 6. Western Edge & The Ridgeway

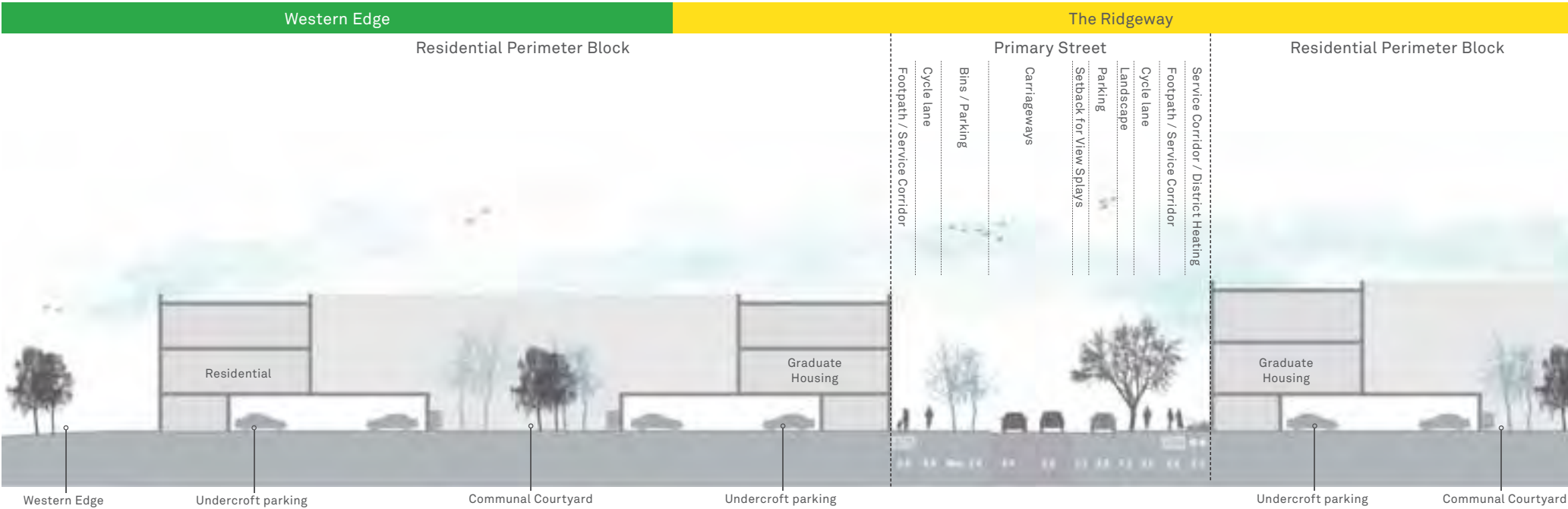


Figure 5.24 Section through Western Edge and The Ridgeway

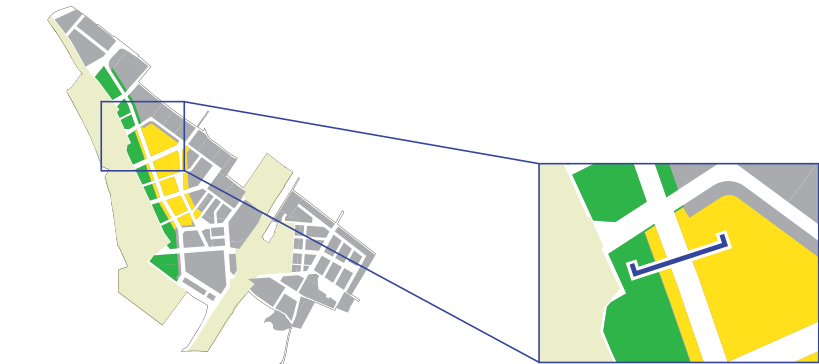


Figure 5.25 Key Plan

## 7. The Ridgeway & Local Centre

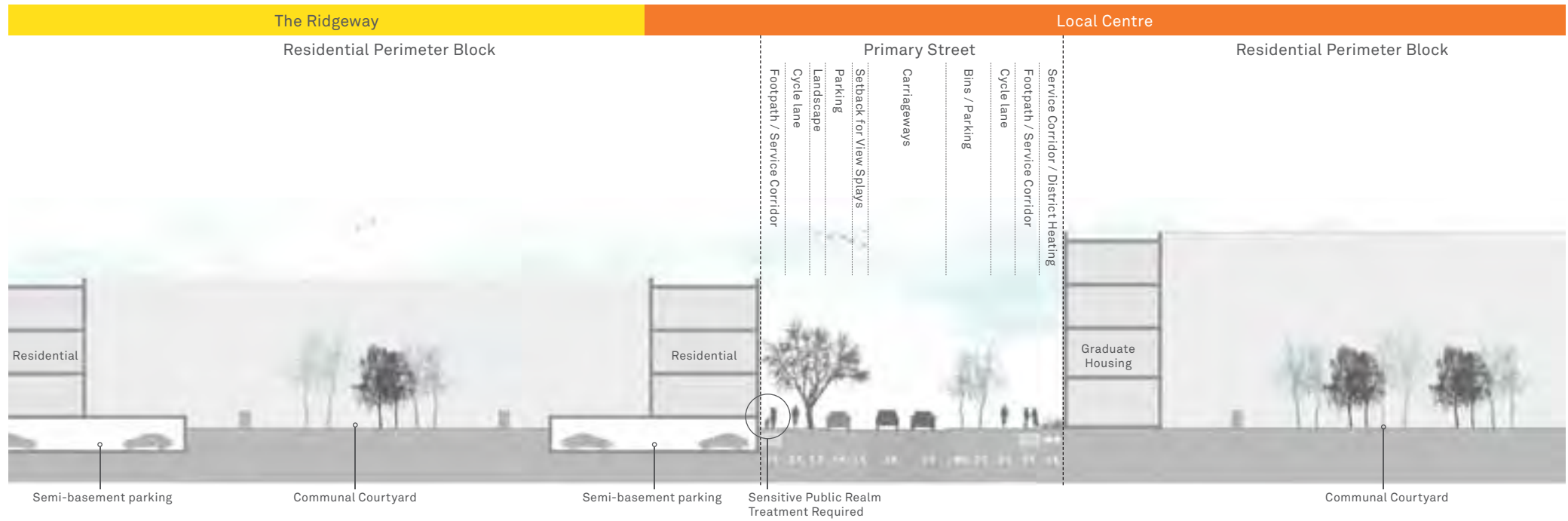


Figure 5.26 Section through The Ridgeway and Local Centre

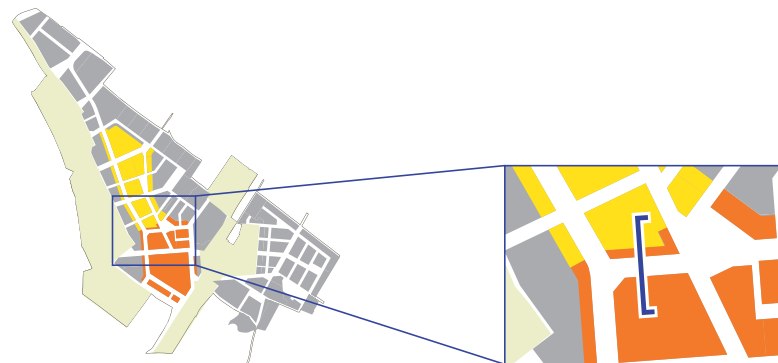


Figure 5.27 Key Plan

# 8. The Ridgeway & Neighbourhood Village

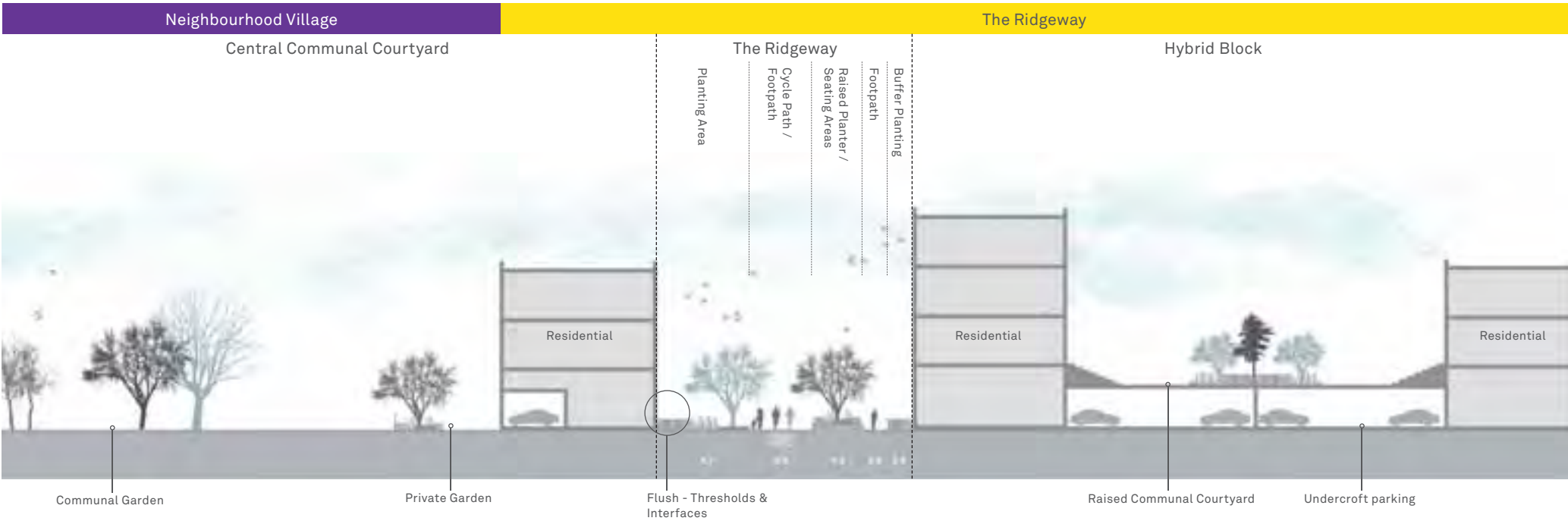


Figure 5.28 Section through The Ridgeway and Neighbourhood Village

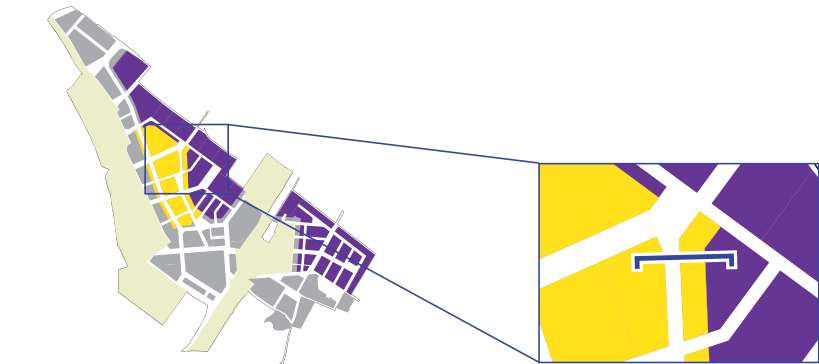


Figure 5.29 Key Plan



## 9. Neighbourhood Village & Local Centre

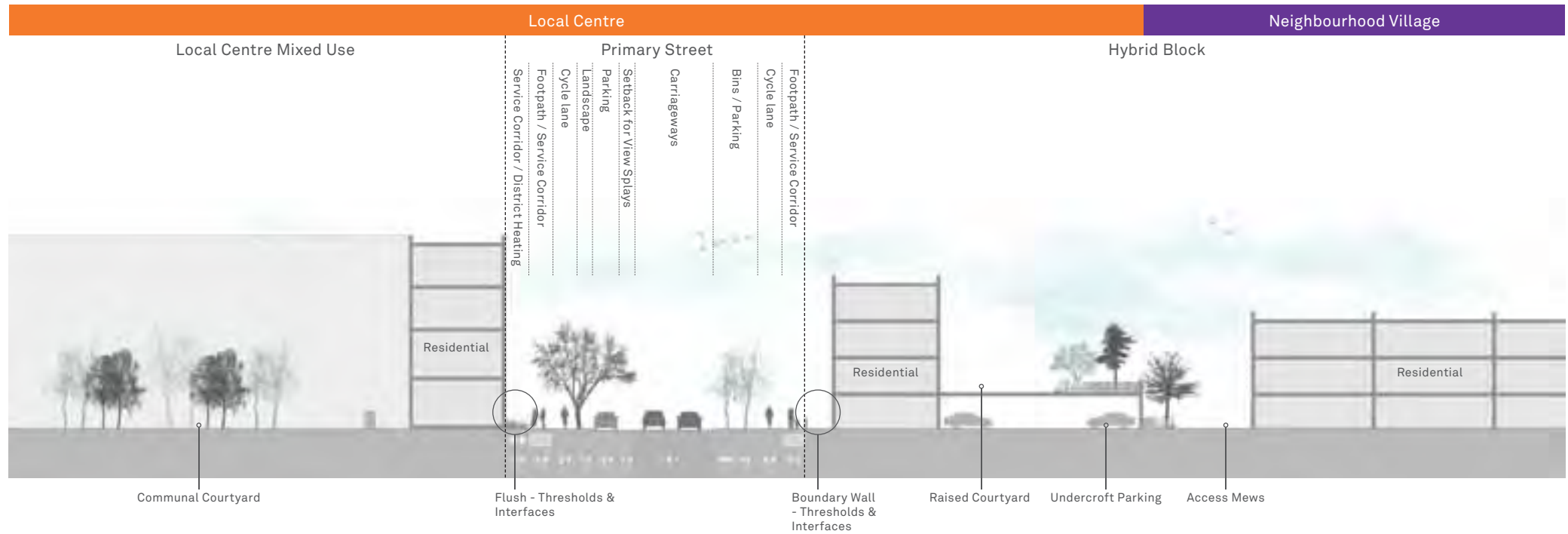


Figure 5.30 Section through Neighbourhood Village and Local Centre

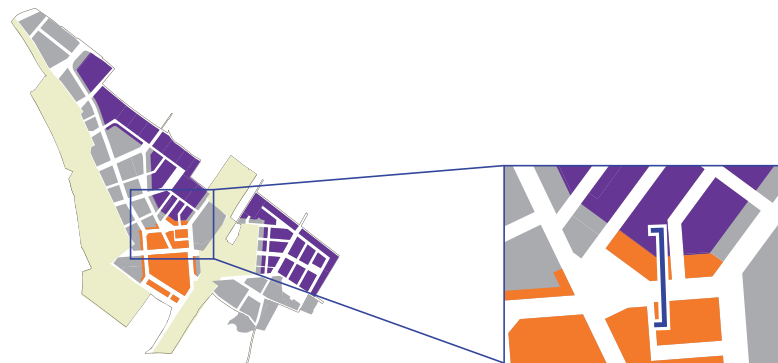


Figure 5.31 Key Plan

10. North West Corner & Neighbourhood Village

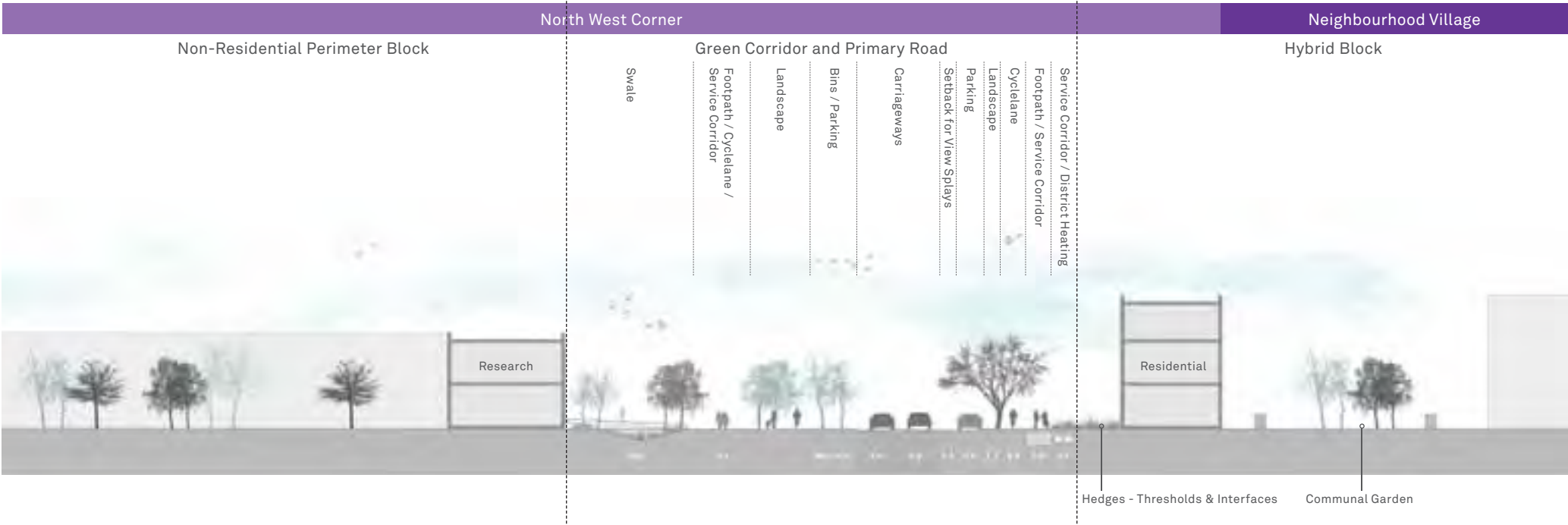


Figure 5.32 Section through North West Corner and Neighbourhood Village



Figure 5.33 Key Plan









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## 6.1 INTRODUCTION

North West Cambridge will be a new high quality extension to the City of Cambridge. It will function as a part of the city, with connections to and through the new development to existing adjacent communities.

The University, as the current landowner and the long term majority landowner across the site, will be providing for the delivery of the enabling infrastructure, management and maintenance of the main open spaces, and the streets that will not be adopted.

## 6.2 PHASING

A detailed phasing plan is in the process of development and will be submitted to and approved by the JDCC in advance of development works on site (in accordance with *Condition 5* of the *Outline Planning Permission*). This phasing plan will establish the general sequence of development across the site, taking into account S106 triggers and infrastructure thresholds, as well as other delivery requirements to mitigate the effects of the development.

## 6.3 MANAGEMENT AND ADOPTION

The University is proposing to offer the two main routes connecting Huntingdon Road and Madingley Road for adoption. This includes all routes from the main vehicle access points into the site (Huntingdon Road West, Huntingdon Road East, and Madingley Road West), due primarily to the nature of through traffic on these routes. The routes proposed for adoption are shown on Figure 3.38 Street Hierarchy on page 51 as “Primary Streets” in purple. Also refer to Chapter 7, Appendix B, Figure 7.30 NWC/OPA/ PAR/02/A - Access Parameter Plan: Zone B on page 280.

All other streets on the site will be retained within the University’s ownership and managed, maintained and repaired by the Estate Management Company (established by the University). Public rights of access will be secured on agreed non-adopted routes. The

University’s objective in retaining these routes is to:

- ensure high maintenance standards are established and maintained for the roads and associated infrastructure.
- Retain the flexibility to incorporate alternative designs/specifications, whilst avoiding the obligation to provide up front commuted sums.
- simplify delivery of the district heating network, as the distribution network can be installed under retained street corridors, whereas the Highway Authority has indicated that it will not accept private installations beneath the adopted primary routes where there are alternatives.
- Retain the flexibility to ensure the high quality environment created at North West Cambridge is not only provided on completion of the development, but retained over the long term.

This approach is set out the *S106*. The following table sets out the proposed strategy for the management and adoption of those items that do not directly relate to residential use.

Facility or land use	Delivery of facilities	Management by	Ownership by
Primary and Secondary Open Land (excl. Jointly Managed Open Land and sports pitches)	University	Estate Management Company	University
Jointly Managed Open Land	University	Joint Venture Management Entity	University
Sports Pitches	University	University Sports Syndicate	University
Adoptable Primary Road	University	Cambridgeshire County Council	Offered for adoption to Cambridgeshire County Council
Strategic Cycleway	University	Cambridgeshire County Council	University, with Dedication Agreement with Cambridgeshire County Council
Public Open Spaces including streets, footpaths and cycleways	University/ Developer	Estate Management Company / Developer	University/ Developer
Primary School	Cambridgeshire County Council, with Steering Group Oversight	Operator (TBC)	University, with long lease to Operator
Community Centre	University	Joint Venture Management Entity	University
Energy Centre	University	Management company to be contracted by the University (TBC)	University
Pumping Station	Anglian Water	Anglian Water	Anglian Water
Sub stations	University/ Developer	Utility Provider	Utility Provider
Gas pressure reducing station	National Grid Gas	National Grid Gas	National Grid Gas
Water attenuation/SuDS	University/ Developer	TBC	TBC
Primary Care Facility	University	Estate Management Company	University with commercial lease
Police offices	University	Estate Management Company	University with commercial lease

Table 6.1 Management and Adoption Table



## 6.4 CODE REVIEW

Due to the long-term and mixed-use nature of development at North West Cambridge, it is anticipated that there may be a need to review the Design Code at some point in the future. The University, City Council, or South Cambridgeshire District Council can request a review of the Design Code after two years from commencement of the first Reserved Matters Application for residential development. When a request is made, the matters to be reviewed must be specified, and other parties will have a 28 day period to respond to the request.

Any Design Code review must consider issues of detail and interpretation, still be considered in the context of the parameters set out in the outline planning approval, and must be agreed between the University and the Local Planning Authorities. A review must be completed within three months of commencement of the review and would not delay any concurrent reserved matters applications.



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## APPENDIX A - DEVELOPMENT CONTEXT

The Application Site is an approximately 150 hectare site bounded by the M11, the A14, Huntingdon Road (A1307) and Madingley Road (A1303).

On the northern boundary of the Application Site are the existing residential properties along Huntingdon Road. A Park & Ride facility, accessed from Madingley Road, is located on the southern boundary of the Application Site, and to the south east, University uses are located in addition to further residential uses. At the eastern boundary is the Chapel of the Ascension and its burial ground. The western boundary is formed by the M11, a finite edge to the City.

A suburban townscape exists to the north and east of the Application Site, while a predominantly rural landscape exists to the west and south, past the developing West Cambridge campus. The Application Site therefore sits at the juxtaposition of the urban/rural edge to Cambridge and this special condition will assist in establishing a unique 'University edge' to the North West of Cambridge.





Figure 7.1 Aerial Photograph of Cambridge with NWC Site Boundary Highlighted



## A.1 EXISTING CONDITIONS

The Application Site is currently used for agriculture and agricultural research. At present the Application Site accommodates the University farm and out buildings, other University research facilities and arable farmland.

The existing landscape of the Application Site is characterised by a strong rural landscape pattern, with the Application Site divided into large open fields, some bound by hedgerows and/or drainage ditches. These hedgerow or ditch field boundaries clearly demarcate the historic field patterns. Other elements of mature planting and woodland characterise the Application Site: both the northern and southern parts of the M11 are wooded which restricts views into the Application Site. To the west, the Application Site is predominantly in agricultural use, but still contains a significant number of stands of trees, including a mature Oak tree. To the east of the Application Site is an important mature avenue of Chestnut trees, which runs north south through the Application Site and links to Huntingdon Road. A number of pockets or clusters of remnant /ancient woodland can be found on the Application Site and a number of significant mammal and reptile habitats have been identified.



Figure 7.2 Existing Aerial Photography



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In the centre of the Application Site is a geological Site of Special Scientific Interest (SSSI). This is known as the Travellers Rest Pit SSSI, and is a geological landform, important to the unique character of the Application Site. This has been highlighted by Natural England, who recently issued notification which amends the boundaries of the SSSI.

The potential for protected species on the Application Site and the fauna and flora is contained as part of the *Environmental Statement*.



Figure 7.3 The Proposed Development - Application Site boundary (Zone B) with key to views



## A.2 EXISTING TOPOGRAPHY

The Application Site lies within a low plateau valley area that is typically characteristic of the Western Claylands character. The topography of the area is of a gently undulating, lowland landscape intersected with highways and urban settlements.

The topography is varied across the Application Site, consisting of a gently undulating plateau which decreases in height from north to south. To the east, a ridgeline follows the Huntingdon Road (24m AOD) and runs along the north eastern boundary of the Application Site. The ridgeline gradually falls away to the west across the Application Site toward the motorway, eventually levelling out to a low plateau at approximately 14m AOD. The slope from Huntingdon Road to the Washpit Brook in the west of the Application Site is both gradual and gentle. At the northern end of the Application Site, the slope is more pronounced.

This slope assists the natural drainage of the Application Site to the Washpit Brook which meanders along the western boundary of the Application Site.



Figure 7.4 Existing topography

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Figure 7.5 Existing topography on Application Site



Figure 7.6 Existing topography on Application Site



Figure 7.7 Existing topography on the Application Site

## A.3 EXISTING LANDSCAPE & ECOLOGY

A full report on the fauna and flora is contained in the *Environmental Statement*, including site surveys undertaken.

The diagram opposite summarises and locates the historic landscape and ecological features described more fully elsewhere.

Due to the current and historical agricultural use of the landscape, the ecological value of the Application Site is limited to a number of key locations:

- In and around the Travellers' Rest Pit SSSI. The embankments offer wildlife habitats and a well established wildlife pond and garden support a range of wildlife species, habitats and vegetation;
- Within the mature hedgerows, wooded plantation areas, ponds and water bodies;
- Possible nesting sites for bats within the existing farm building and mature trees;



Figure 7.8 Existing landscape and ecology

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## KEY

























-  Existing vehicular routes
-  Application Boundary (Zone B)
-  Retained buildings
-  Existing woodland/ copse/ orchard
-  Girton Gap
-  Arable Land
-  Improved Grassland
-  Species-rich semi-improved neutral grassland
-  Notable Mature Tree
-  Trees under TPO (CCC)
-  Species rich hedgerow
-  Species poor hedgerow
-  Stream/ watercourse/ pond
-  Washpit Brook easement (5m)
-  Flood Risk Zone 2 (EA)
-  Great Crested Newt Habitat
-  GCN Protection Zones: 50m & 250m
-  GCN environmental enhancements
-  Watervole Habitats along Washpit Brook
-  Travellers Rest: Area of National Geological Interest & easement (10m)
-  Oak tree
-  Existing woodland areas outside site area
-  Contour Lines
-  Nature Conservation Area



Figure 7.9 Existing new pond



Figure 7.10 Existing hedgerow within the Application Site



Figure 7.11 Existing woodland within the Application Site

## A.4 KEY VIEWS

North West Cambridge is a rural edge to the city of Cambridge. Due to the topography of the landscape, the existing vegetation and the existing development surrounding the site, views into the site are generally short distance and primarily offered at close proximity to the site boundary. However, a limited number of longer distance views are possible:

- Viewpoint from the northern entrance to the American Cemetery and Memorial at Madingley Wood;
- Through gaps in the woodland blocks running along the side of Madingley Road when approaching Cambridge from the west;
- Glimpses of the site from The Avenue road running from Madingley to the M11;
- Intermittent views into the site from the footpath running between Cambridge Road and Huntingdon Road via Wrangling Corner and the M11 underpass.

The close distance views over the site are offered from the M11 motorway due to its elevated position. The views from the motorway are oblique and fleeting, but would be experienced by vehicle users.

A number of key views into and within the site are reinforced by the built form, assisting integration with existing landforms and the wider urban fabric.

Long views are experienced from within the site, principally from along the higher ground at the ridgeline. These provide views across the wider landscape that lies west of the M11.

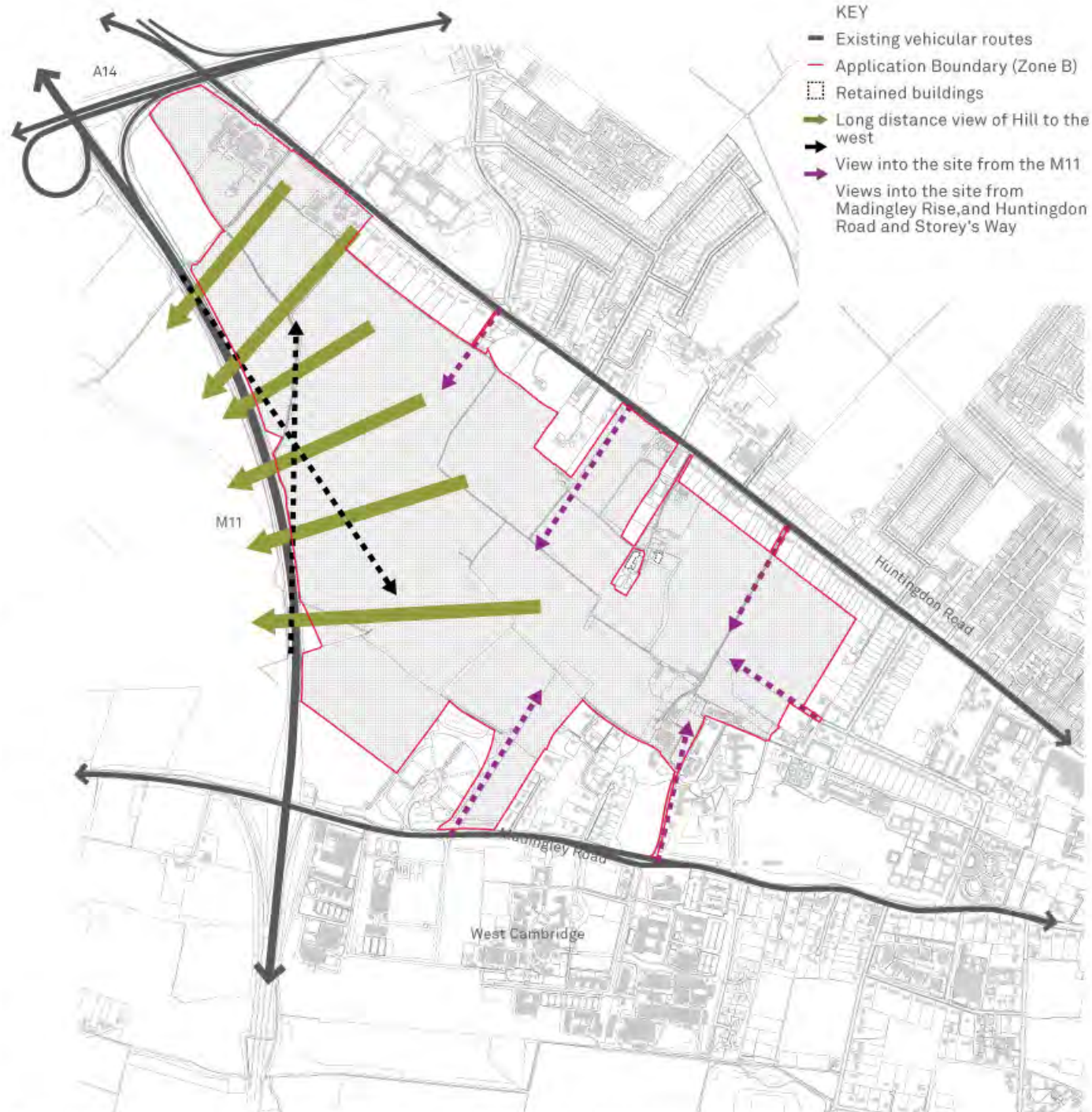


Figure 7.12 Views into and out of the Application Site

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## A.5 EXISTING AND ADJOINING LAND USES

The Application Site is currently used predominantly for agricultural research uses by the University Farm. Additional University research and Traffic International also exist on the Application Site.

The northern boundary of the Application Site along Huntingdon Road is characterised by a substantial number of large houses, which have significant sized gardens backing onto the Application Site. There are also a number of commercial premises, including the Travellers Rest pub and hotel. Access from Huntingdon Road is also provided to the Agronomy Centre and the University farm (Howe Farm) which are located within the Application Site at the northern boundary. Access is also provided to the World Conservation Monitoring Centre, which is excluded from the Application Site boundary.

To the north of Huntingdon Road are the NIAB sites which will be developed for residential use, forming a new development frontage to the north of Huntingdon Road. The eastern boundary of the Application Site is principally residential, with the Chapel of the Ascension and its burial ground. The spire of the chapel forms a local landmark in the landscape.

The southern boundary to the Application Site is defined by the various uses along Madingley Road, which include University and residential uses and the Park & Ride facility. Part of the southern boundary reaches Madingley Road and the West Cambridge campus - providing an opportunity to connect these two major University development areas. The Madingley Road Park & Ride is located further to the west, whilst West Cambridge is located on the south side of Madingley Road.

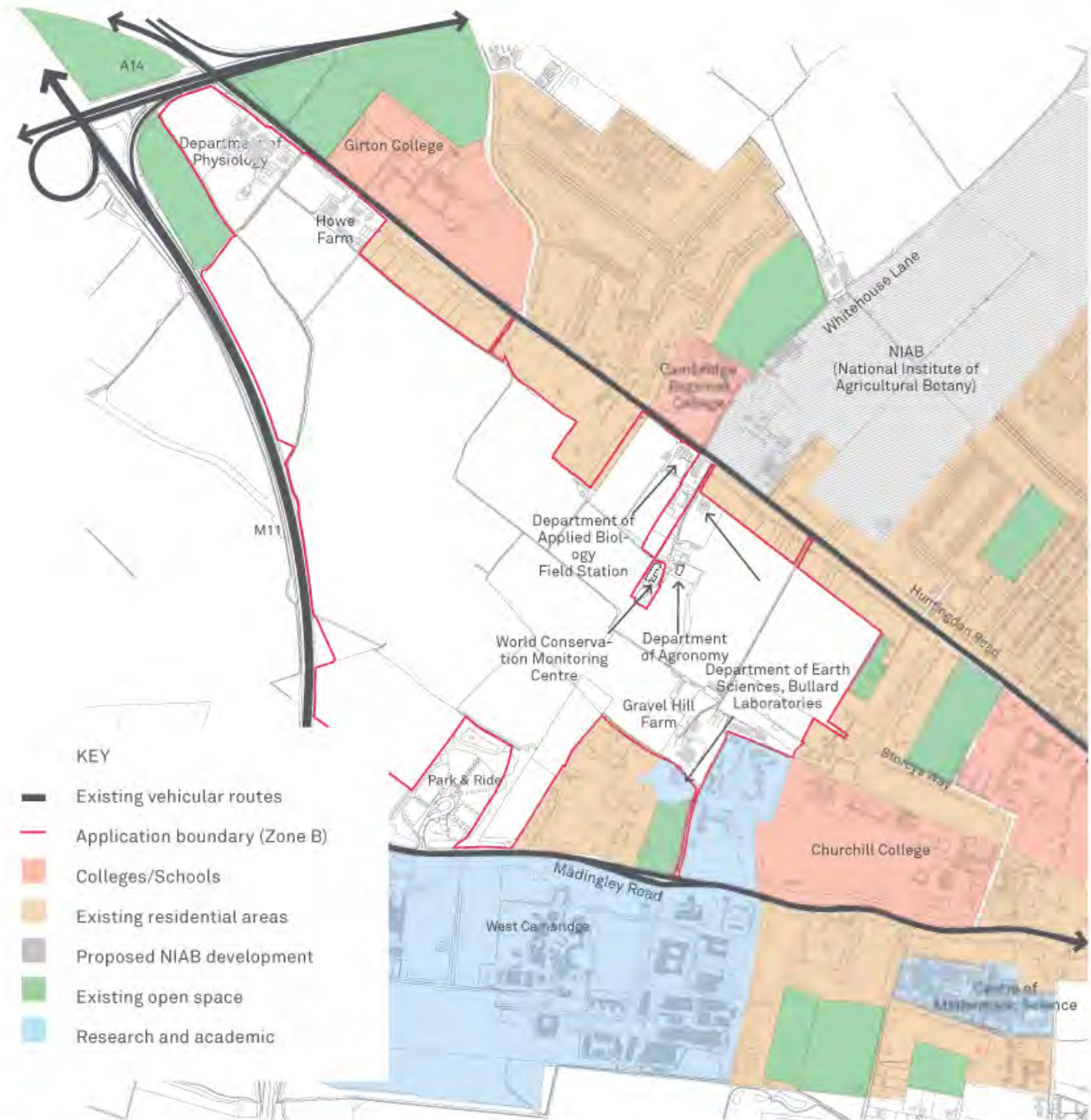


Figure 7.13 Existing land use

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## A.6 EXISTING NOISE CONDITIONS

The noise climate across the Application Site is influenced by road traffic noise from the M11, with minor contributions from traffic on Huntingdon Road and Madingley Road.

Extensive noise monitoring, in conjunction with detailed computer modelling of the Application Site and surrounding roads, has been employed to quantify the noise levels across the Application Site. This has enabled the classification of the Application Site in terms of Noise Exposure Categories (NEC) as defined in PPG24, and is set out in the accompanying *Environmental Statement*.

### Air Quality

Air quality is generally of a good standard in Cambridge. Cambridge City Council have an *Air Quality Action Plan* in place that is intended to deliver reductions in pollutant concentrations in future years, so that the air quality objectives are achieved.

The *Cambridge City Centre Air Quality Management Area (AQMA)* is located close to the Application Site at the junction of the ring road (A1134) with Huntingdon Road (A1307) and Histon Road (B1049). Histon Road provides an alternative route between the A14 and the city centre, to the A1307; therefore a key node that is important to monitor given the number of residents that are sensitive to local air quality in this area.

A full report on the noise environment is contained in chapter 13 of the *Environmental Statement*.

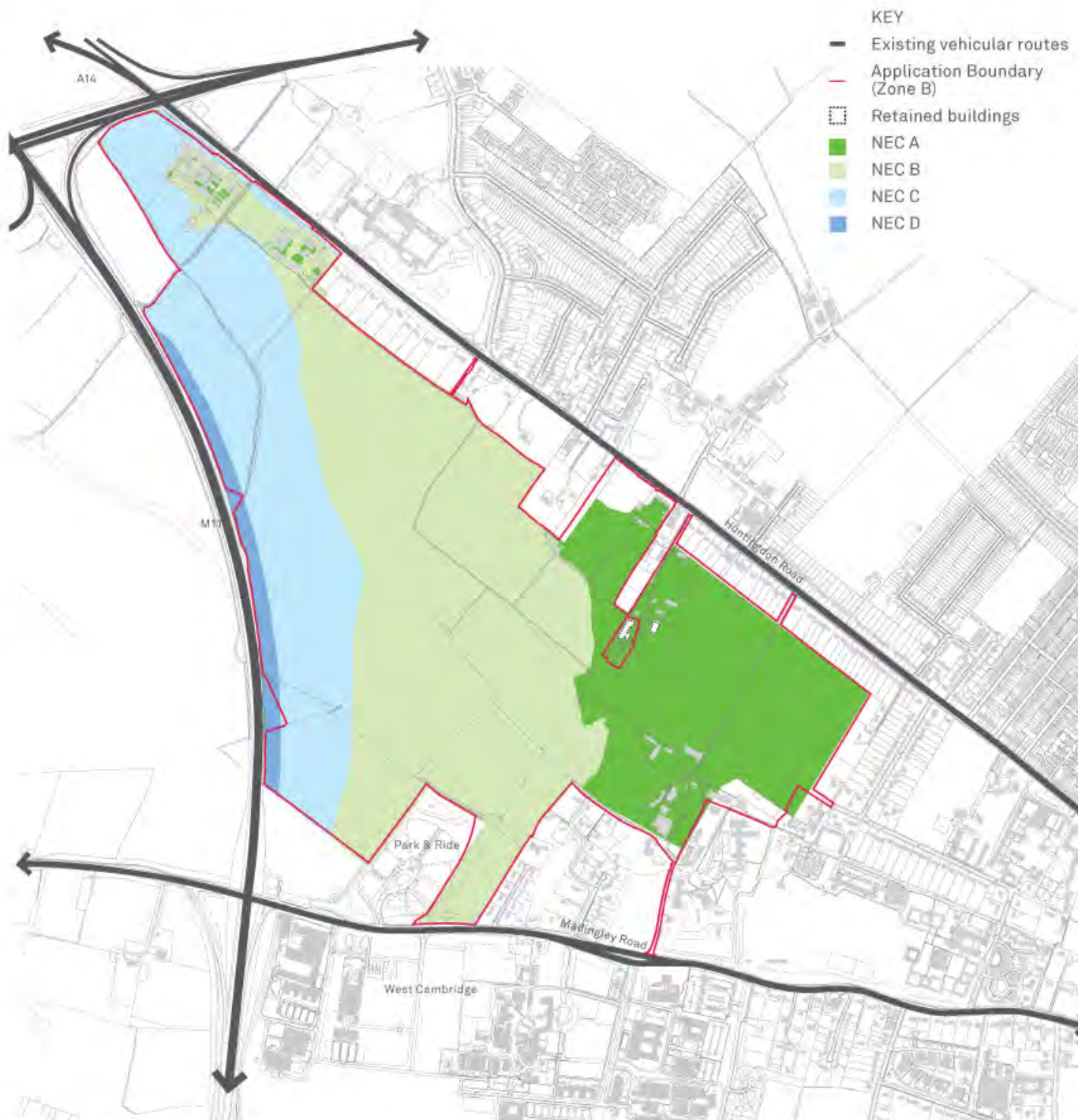


Figure 7.14 Existing noise conditions

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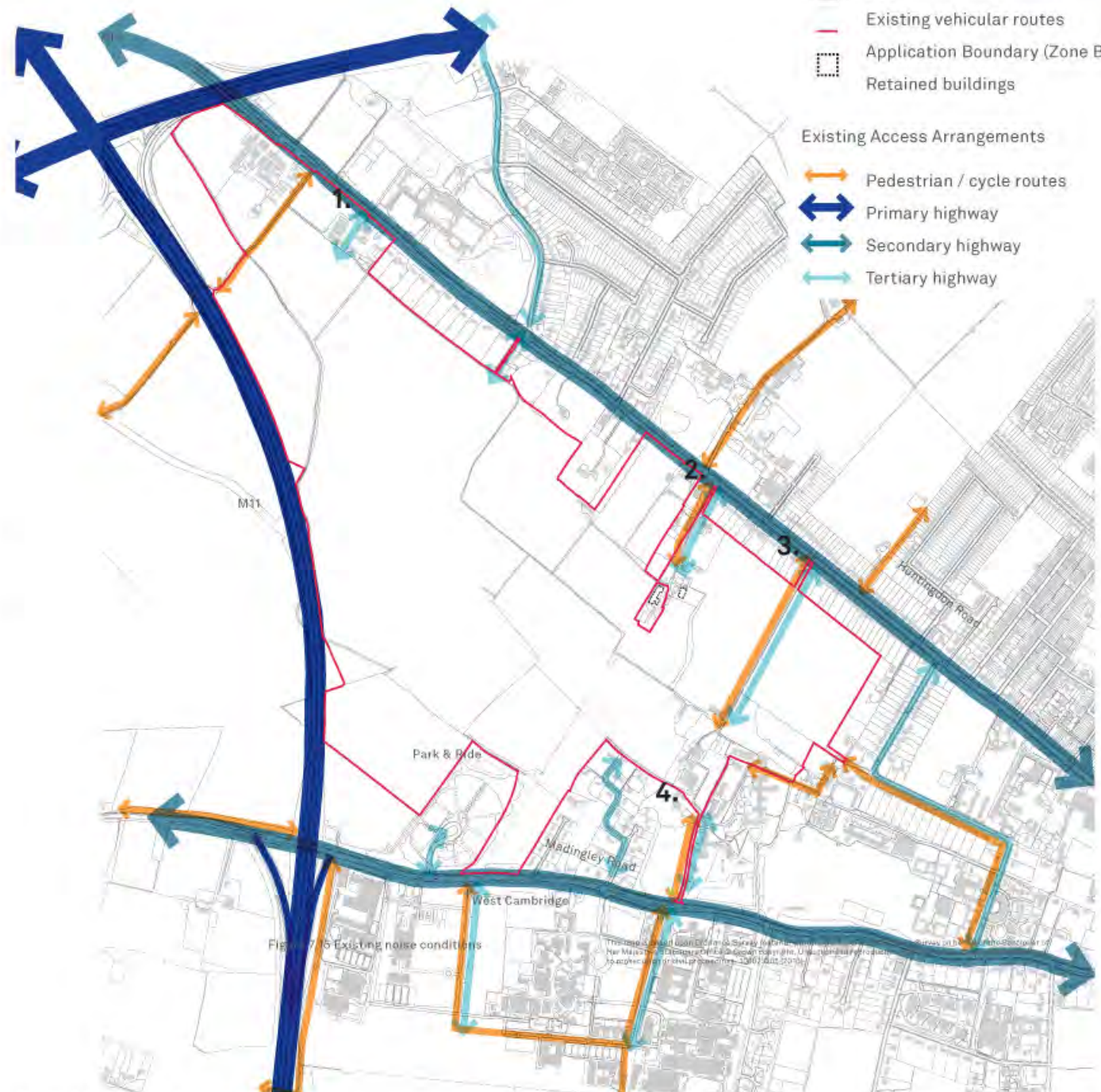
## A.7 EXISTING ACCESS POINTS

Existing vehicular access to the Application Site is restricted to serving specific users located in the periphery. These include:

1. Access from Huntingdon Road to the University farm;
2. Access from Huntingdon Road leading to the World Conservation Monitoring Centre;
3. Access from Huntingdon Road along a tree lined route to the former Gravel Hill Farm;
4. Access from Madingley Road to University uses at Madingley Rise, residential areas and Madingley Road Park & Ride.

Currently, there is no public access to the Application Site with the exception of the public right of way close to the farm buildings in the north west corner of the Application Site, which runs in a westerly direction under the M11 towards Madingley. There are, however, a number of possible new non-vehicular linkages including some along the eastern boundary of the Application Site which could provide a direct link with the adjacent colleges and the centre of Cambridge.

A full report on traffic and transport is contained in chapter 12 of the *Environmental Statement* and set out in the *Transport Assessment and Travel Plan*.



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## A.8 EXISTING UTILITIES

The locations of existing services and utilities supplies have been surveyed as follows:

- A 200mm high pressure gas main runs through the Application Site parallel to the M11 motorway, approximately 30m from the top of the supporting embankment;
- The private Cambridge University Fibre Network, Granta, runs through the central area of the Application Site and generally follows the route of existing tracks, hedgelines and field boundaries;
- An existing 33kV electricity cable runs in a northerly direction through the eastern portion of the Application Site from the existing Madingley Road substation to serve the properties adjoining Huntingdon Road. There are also several existing overhead electricity lines that serve existing buildings within the Application Site; and
- BT Openreach, Virgin Media and EDF Energy have apparatus running along Madingley Road and Huntingdon Road.

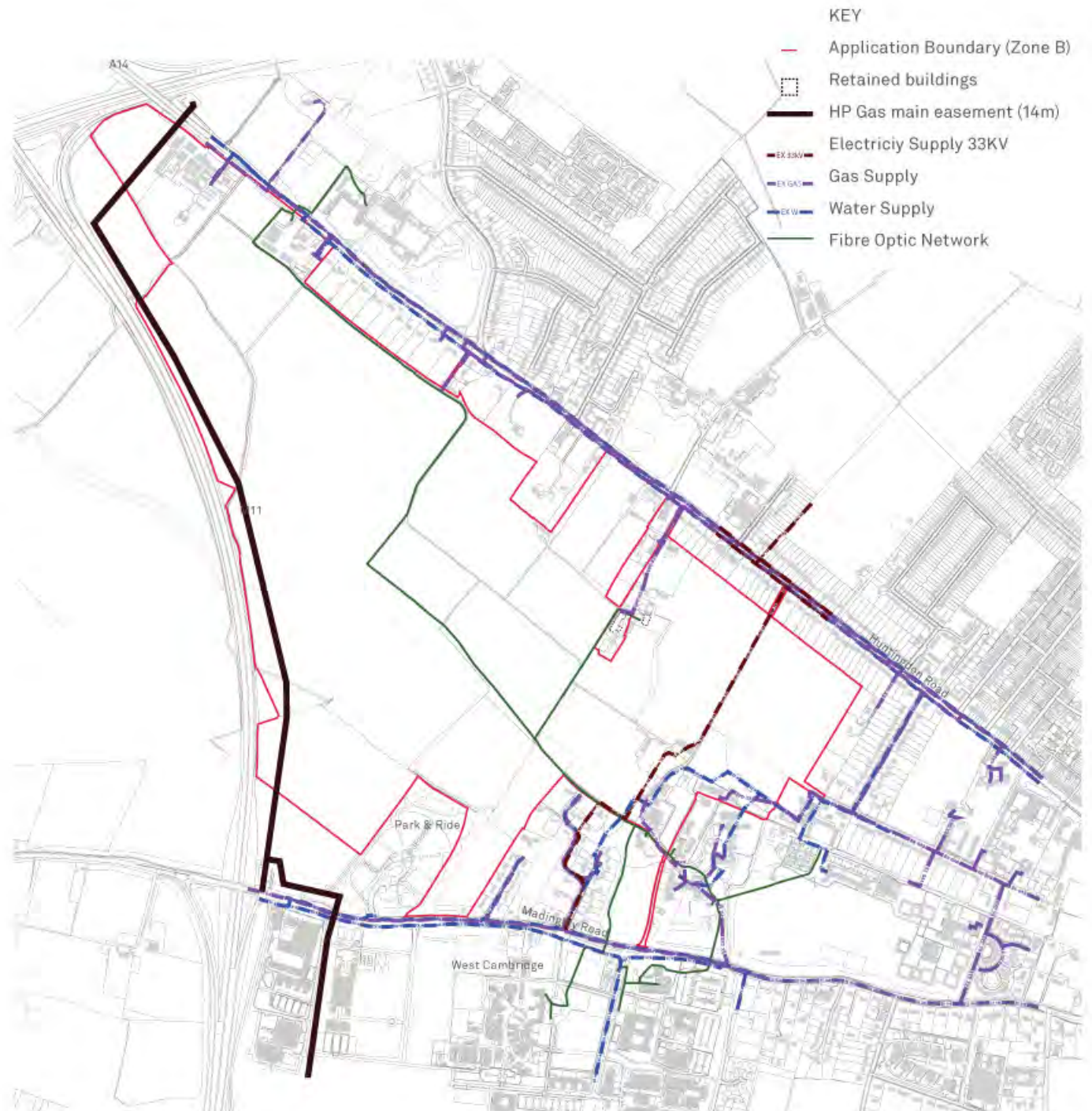


Figure 7.17 Existing utilities

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## A.9 ARCHAEOLOGY

Comprehensive archaeological surveys have been conducted and thorough consideration given to the potential effect upon heritage assets from the Proposed Development. This has been undertaken with an appreciation of the wider landscape and has been subject to intensive study over the last few years. Spanning from the Paleolithic through to Medieval times, the evaluation results clearly convey the area's long land-use history.

As the sites were only discovered as a result of the evaluation programme, all rank as undesignated heritage assets and generally, their preservation is 'moderate' to 'poor' as the area's long history of arable usage and quarrying has meant that they are severely affected and cannot be considered 'pristine'.

Further detail regarding the archaeological assets are included within the *Environmental Statement*.

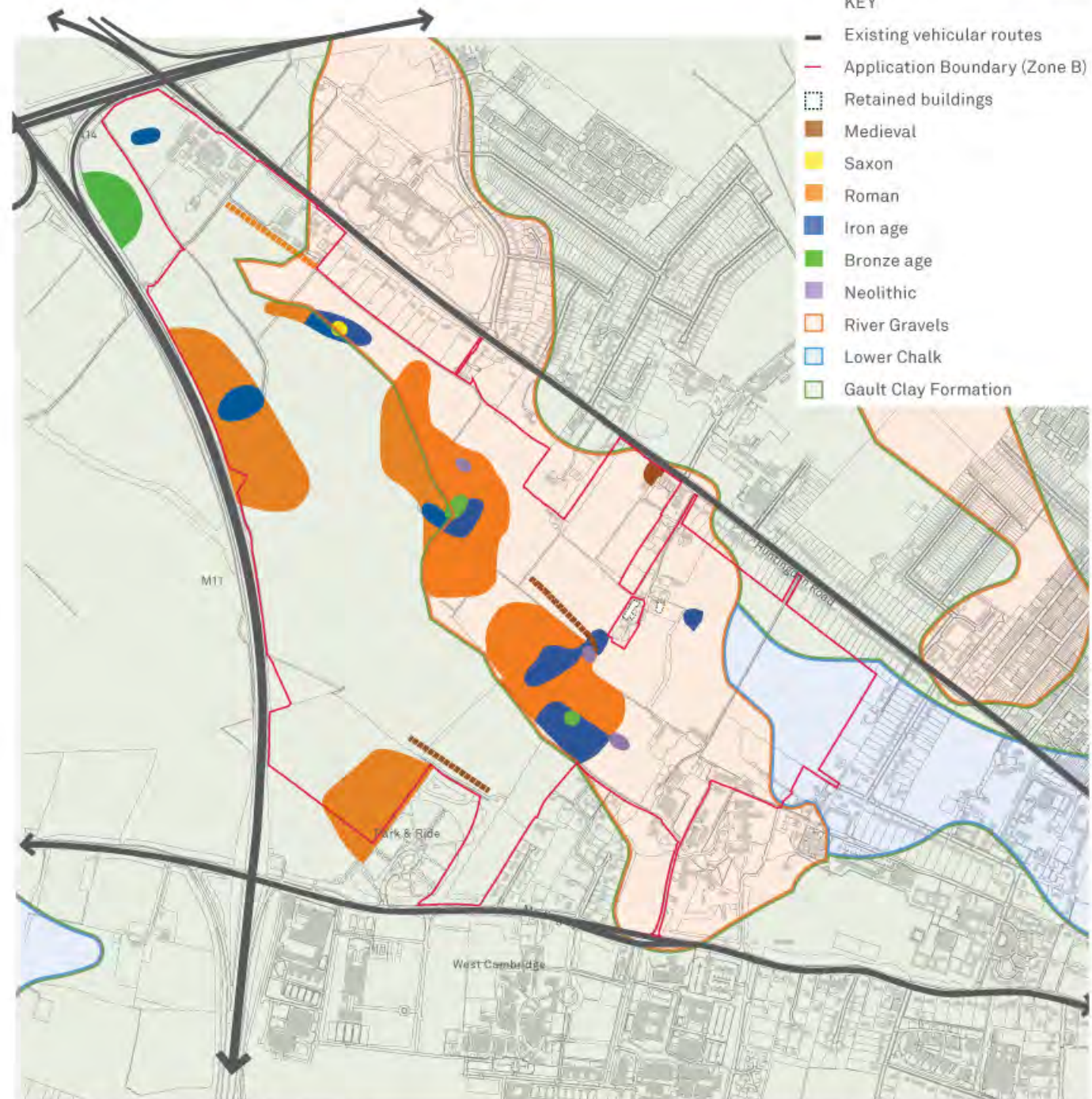


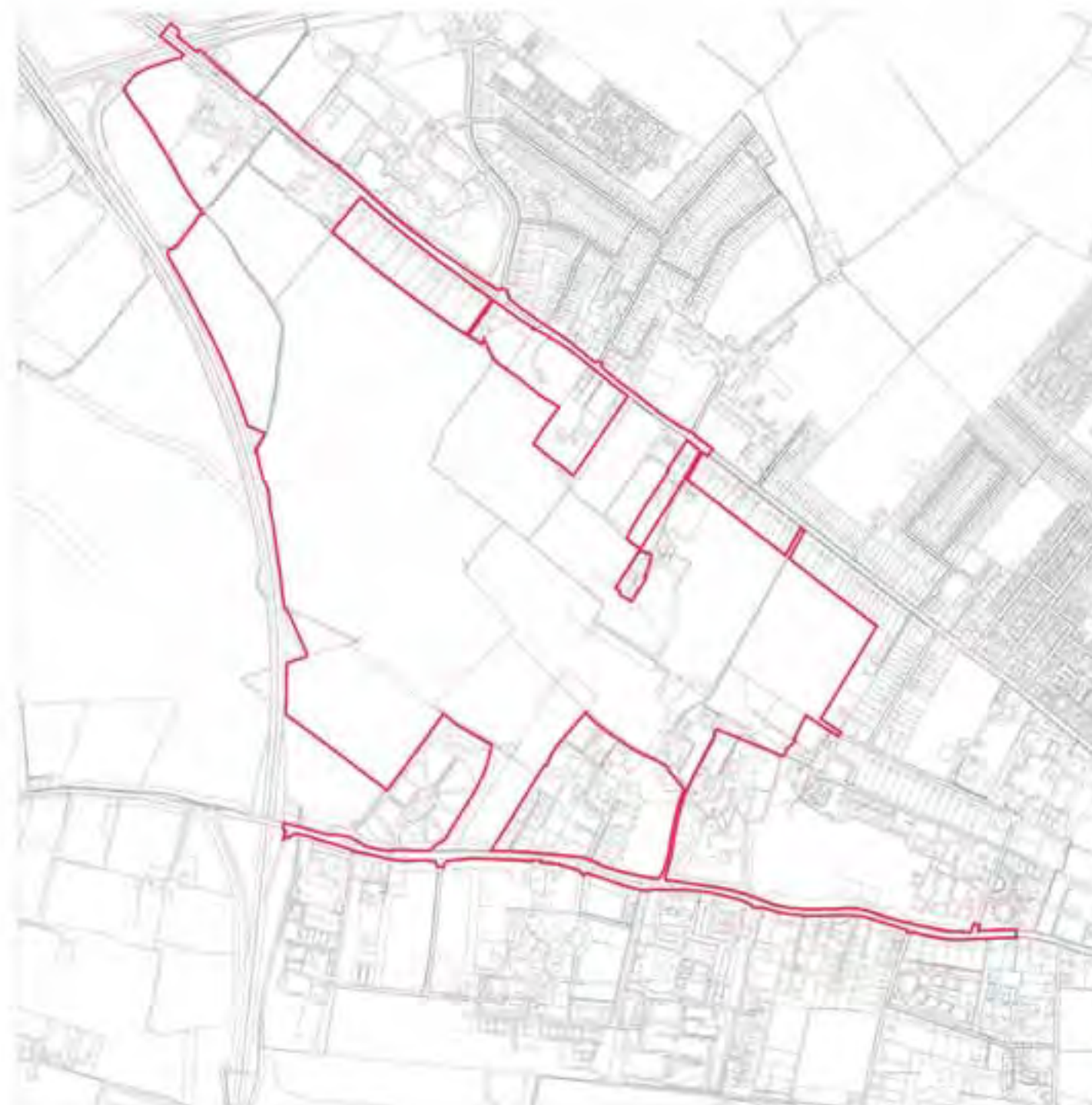
Figure 7.18 Existing geology and archaeology

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## APPENDIX B - APPLICATION DRAWINGS, PARAMETER PLANS AND STATEMENTS

Please refer to *Description of Document* and *Parameter Plans* for further detail for the drawings in this section.





#### KEY

For Approval:

— Application site boundary

All information other than that identified as being for approval is shown for contextual purposes only.

### North West Cambridge

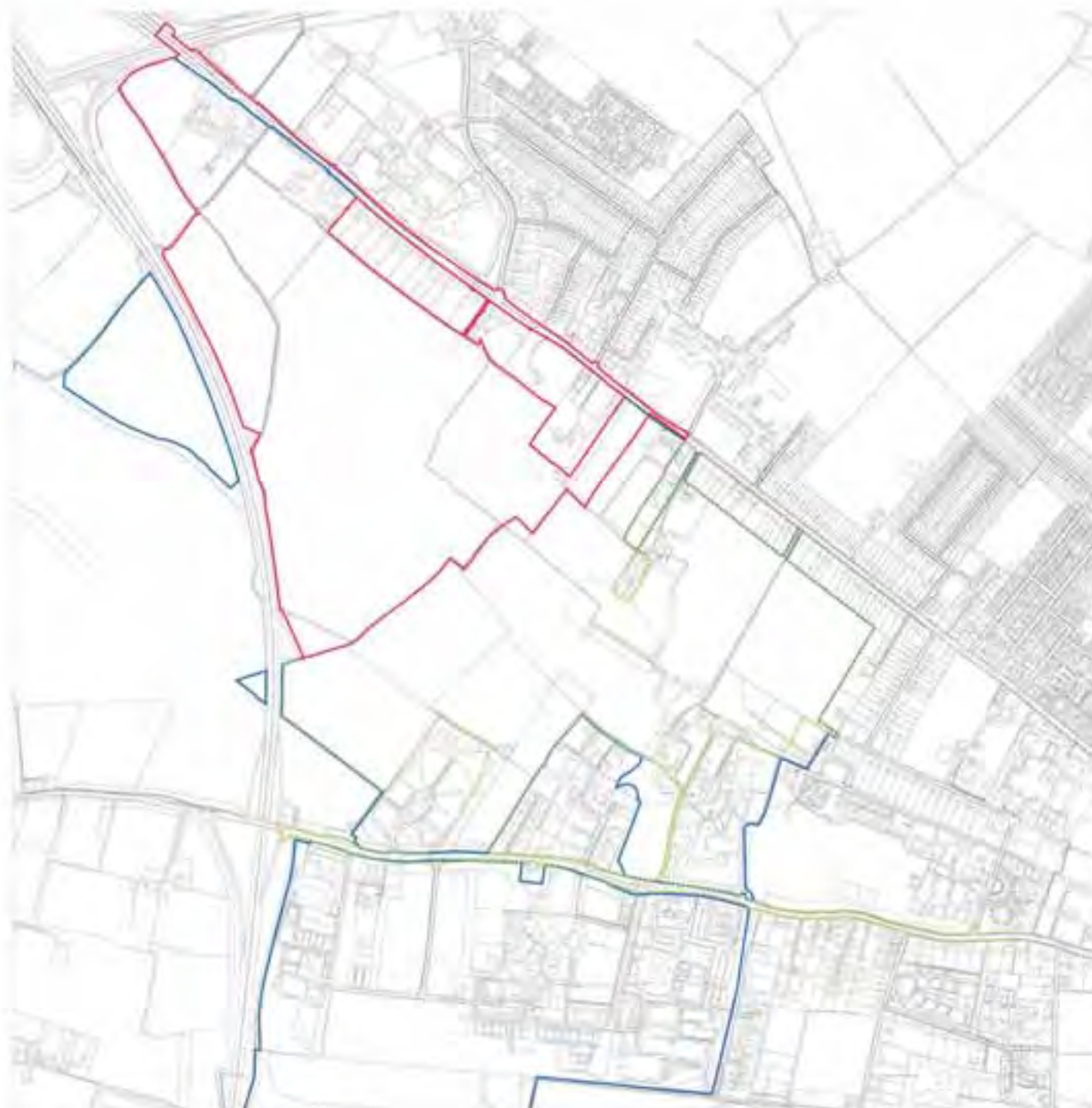
**NWC/OPA/APP/01 - Plan for Approval: Application Site Boundary**

September 2011



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Figure 7.19 NWC/OPA/APP/01 - Plan for Approval: Application Site Boundary



#### KEY

##### Contextual Information:

- Application site boundary Cambridge City Council
- University ownership boundary

##### For Approval:

- Application site boundary South Cambridgeshire District Council

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

**NWC/OPA/APP/01A - Plan for Approval: Application Site Boundary South Cambridgeshire District Council**

September 2011



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Figure 7.20 NWC/OPA/APP/01A - Plan for Approval: Application Site Boundary South Cambridgeshire District Council



— Application site boundary South Cambridgeshire District Council  
— University ownership boundary

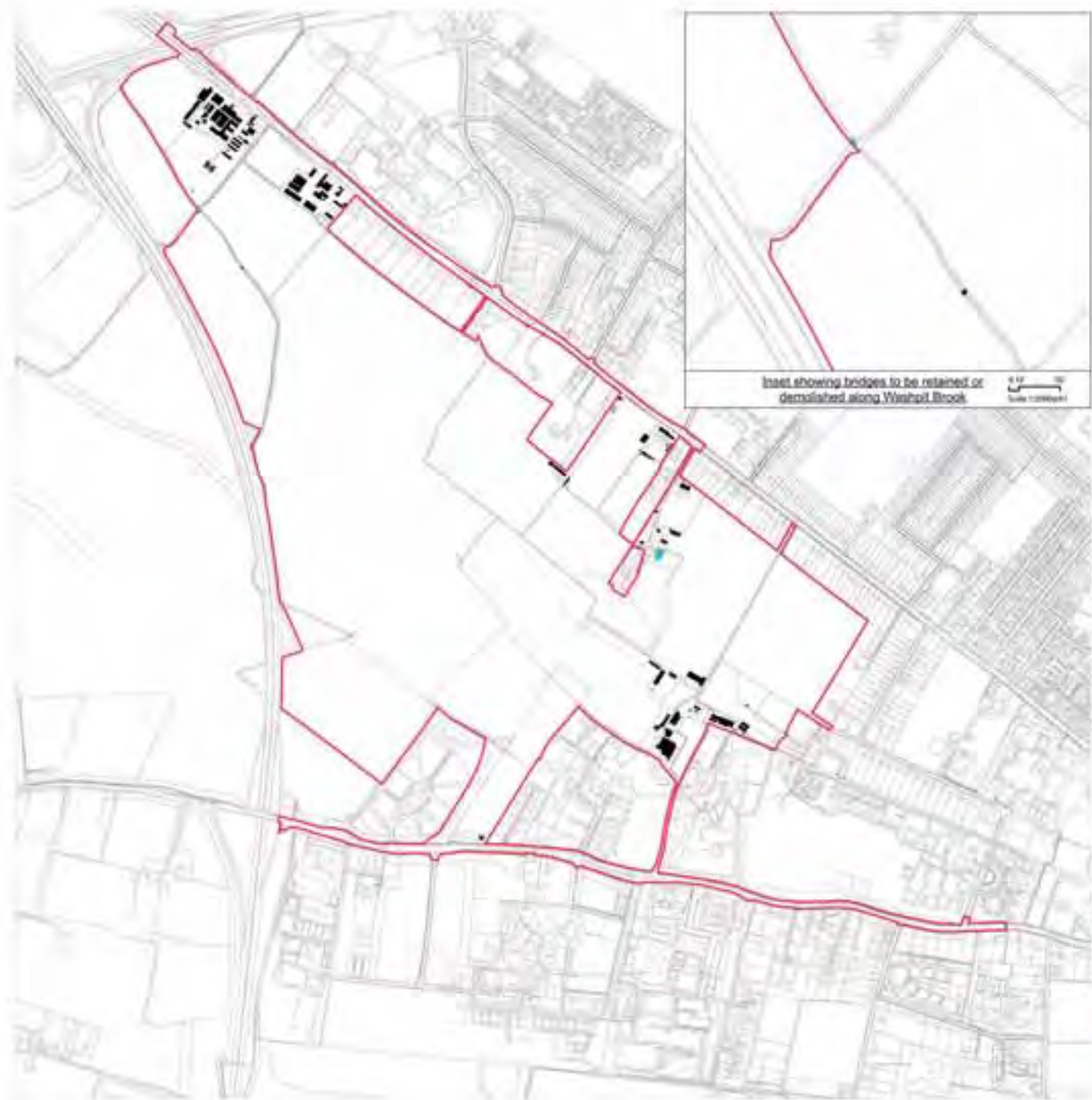
Application site boundary Cambridge City Council

 UNIVERSITY OF  
CAMBRIDGE

0 15 30 mins  
Scale is constant

© 2004 Blackwell Publishing Ltd, *Journal of Internal Medicine* 255: 105–112

271



#### KEY

##### For Approval:

- Application site boundary
- Buildings and bridges to be demolished
- Buildings and bridges to be retained

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

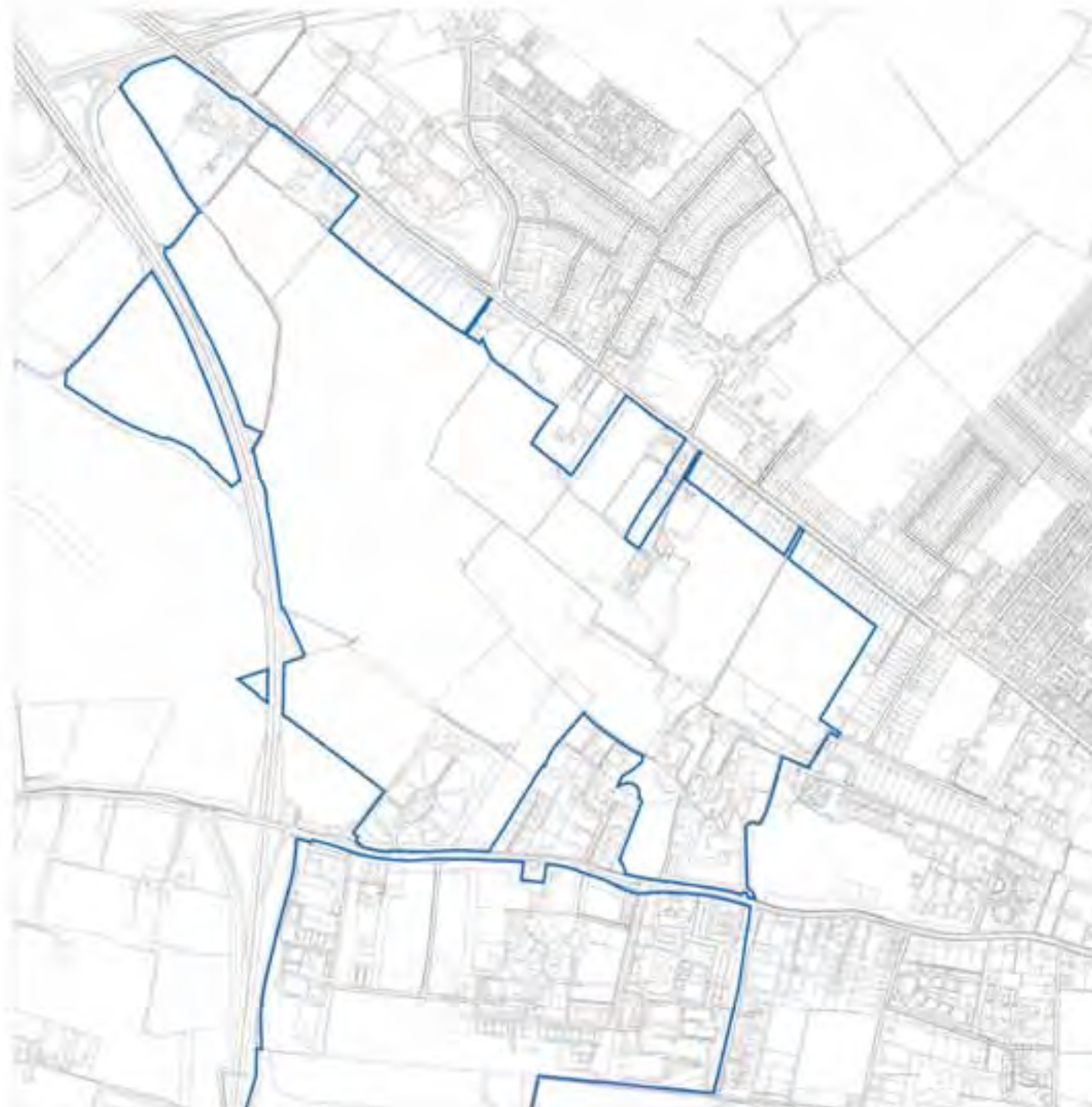
### NWC/OPA/APP/02/A - Plan for Approval: Demolition Plan

February 2012



Figure 7.22 NWC/OPA/APP/02/A - Plan for Approval: Demolition Plan





# KEY

## Contextual Information:

— University ownership boundary\*

Note: \*Boundaries drawn to back of footpath, this does not compromise the presumption of ownership to the midpoint of highways.

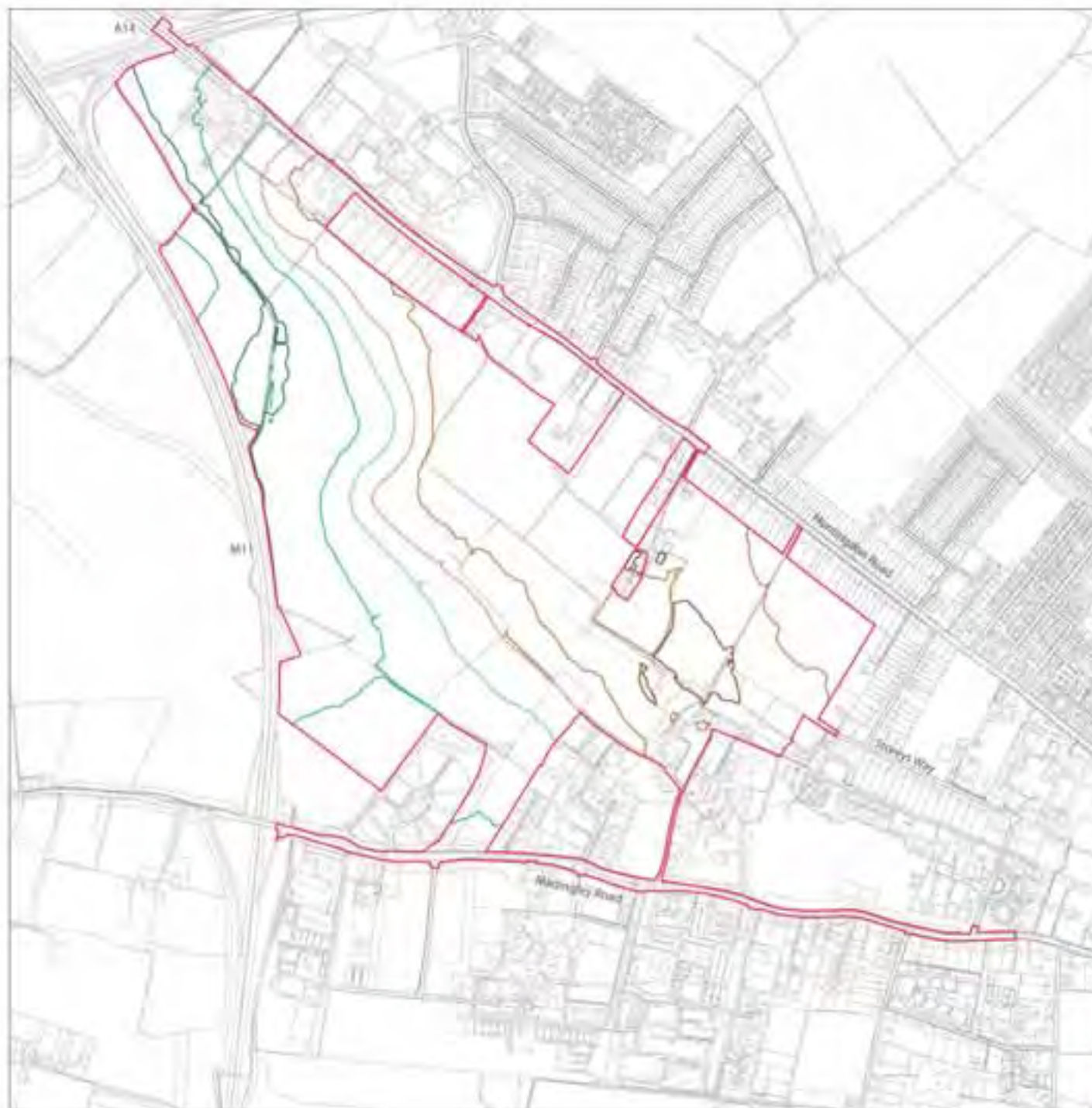
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## North West Cambridge NWC/OPA/CON/01 - Contextual Plan: University Ownership Plan

September 2011



Figure 7.23 NWC/OPA/CON/01 - Contextual Plan: University Ownership Plan



# KEY

## Contextual Information:

- Application site boundary
- 12.5 metres AOD
- 15 metres AOD
- 17.5 metres AOD
- 20 metres AOD
- 22.5 metres AOD
- 25 metres AOD

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## North West Cambridge NWC/OPA/CON/02 - Contextual Drawing: Existing Topography

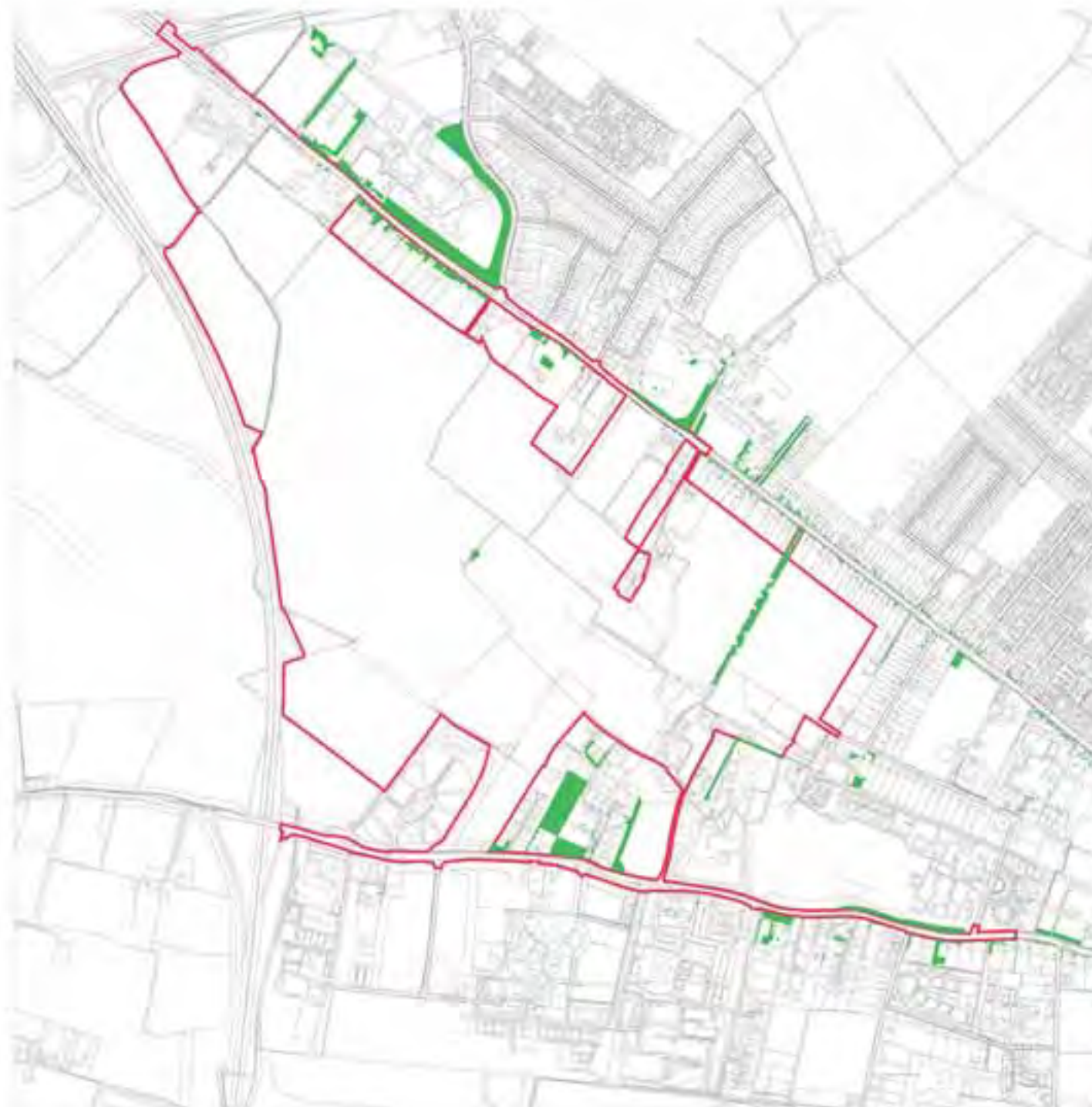
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Figure 7.24 NWC/OPA/CON/02 - Contextual Drawing: Existing Topography





#### KEY

##### Contextual Information:

- Application site boundary
- Trees with Tree Preservation Order to be retained
- Trees with Tree Preservation Order to be removed

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

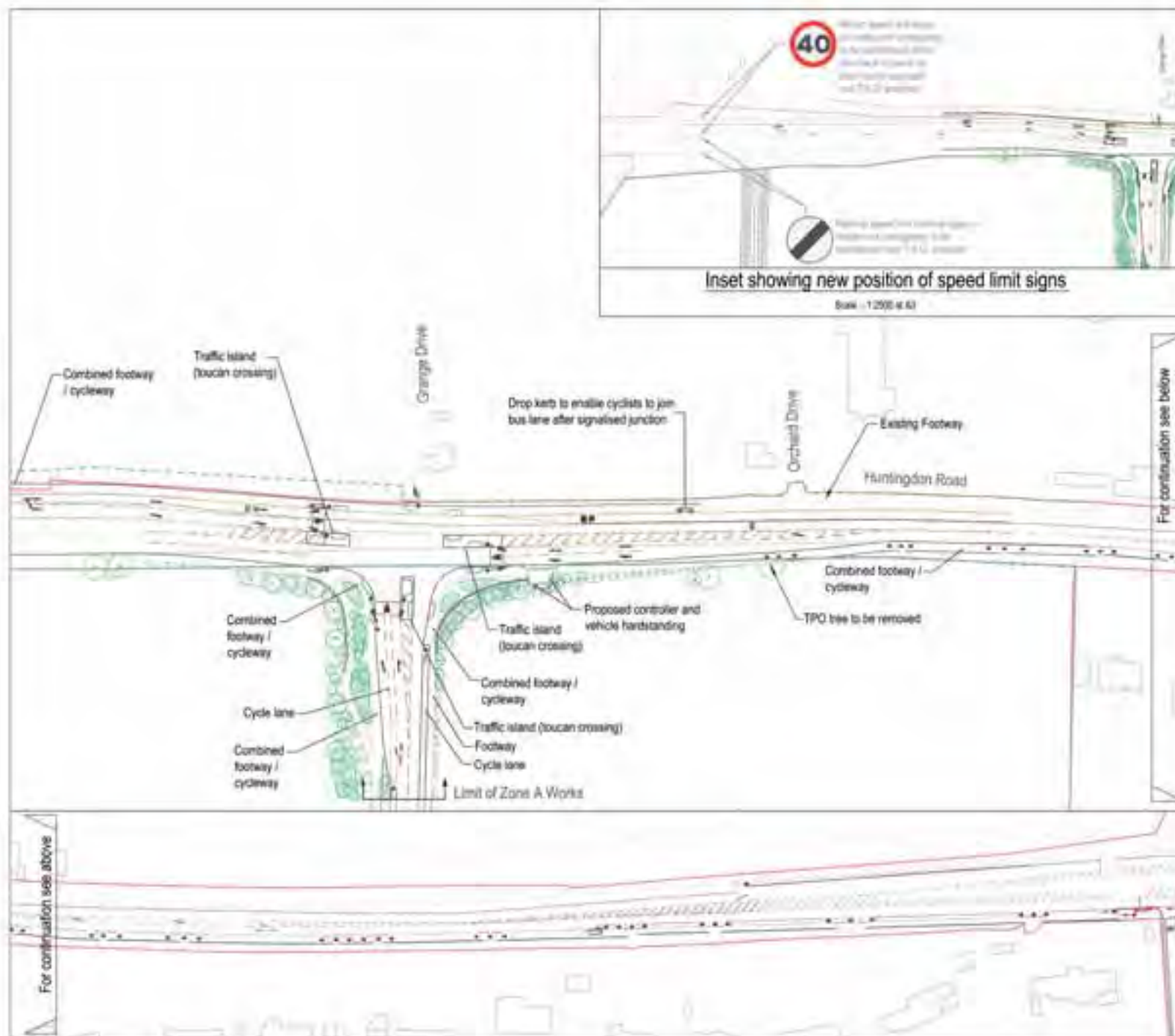
### NWC/OPA/CON/03/A - Contextual Plan: Tree Preservation Orders

February 2012



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Figure 7.25 NWC/OPA/CON/03/A - Contextual Plan: Tree Preservation Orders



# KEY

- Contextual Information:**
- Route markings
  - Highway and boundary
  - Signal heads
  - Dropped kerbs
- Landscape Contextual Information:**
- Existing Tree Retained
  - Existing Tree Removed
  - Existing Vegetation to be retained
  - Proposed Tree
  - Proposed Lawn / Meadow
  - Proposed Planting Area
  - Proposed SUGS
  - Proposed Feature Log Wall

Cartage works would be undertaken within the application site boundary wherever junction works are proposed and extend beyond the markings for junction works. The exact extent of cartage works to be the subject of a condition.

## For Approval:

- Application site boundary
- Junction works

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

NWC/OPA/CON/04 -  
Huntingdon Road Junction West  
March 2012



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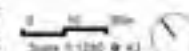


Figure 7.26 NWC/OPA/CON/04 - Huntingdon Road Junction West



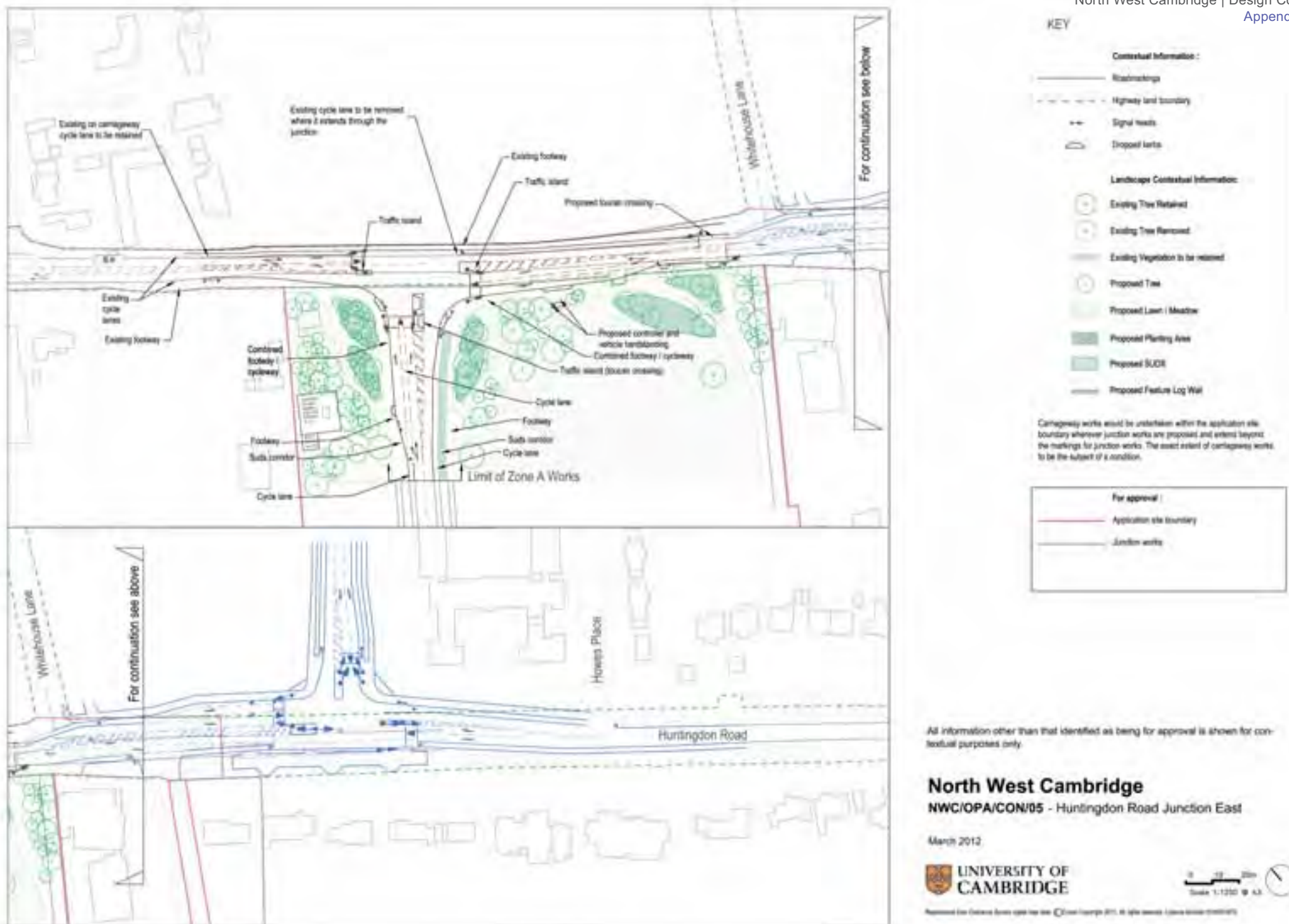


Figure 7.27 NWC/OPA/CON/05 - Huntingdon Road Junction East



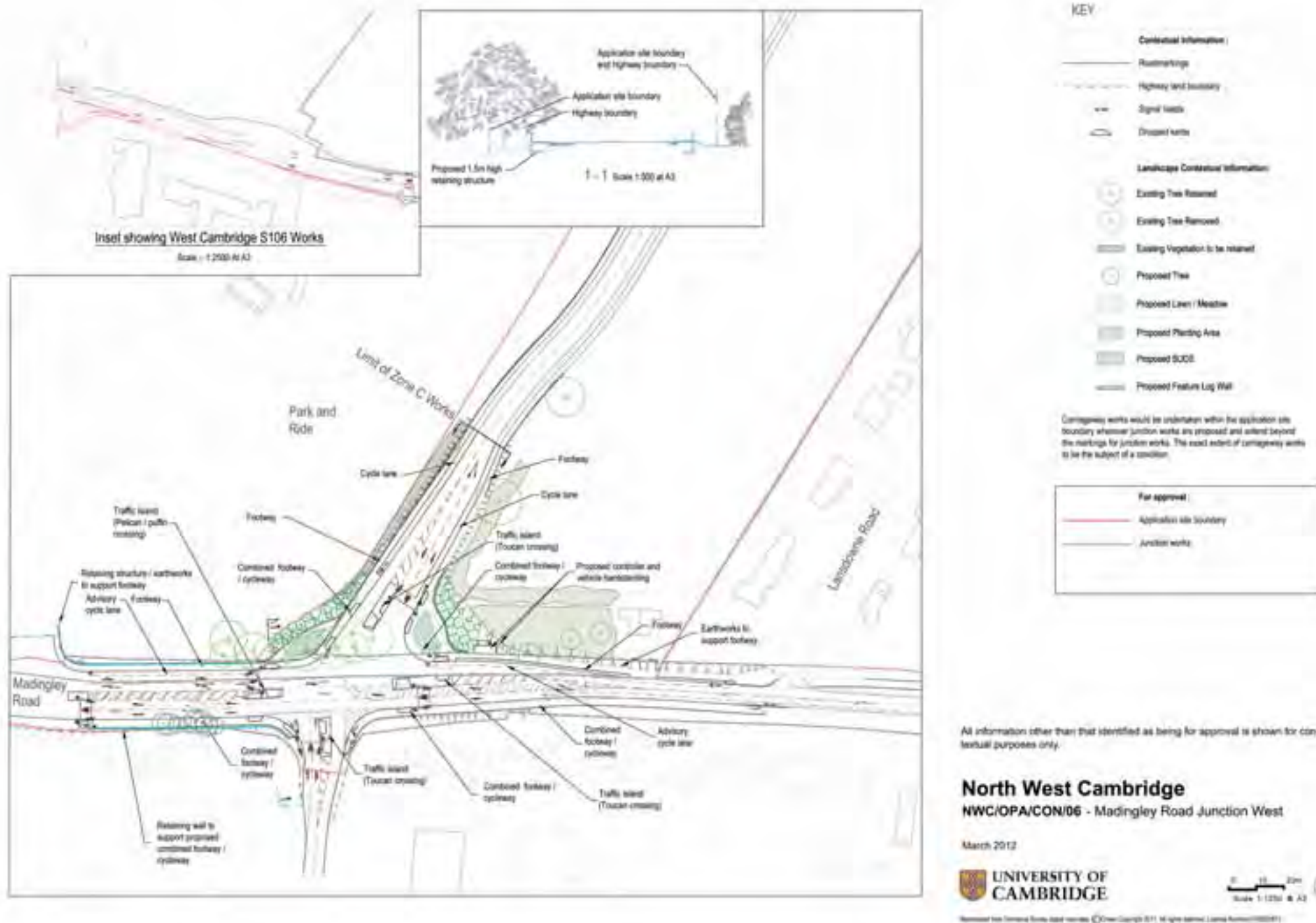
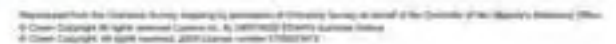


Figure 7.28 NWC/OPA/CON/06 - Madingley Road Junction West



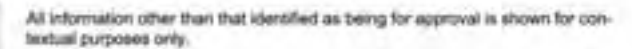
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## Parameter Plan 04: Land Use (Built Development and Ancillary Space); Zone B

The disposition of land uses within the development shall conform to Parameter Plan 04.

Built development shall be divided between the 3 development areas shown on Parameter Plan 04. The disposition of floorspace (or dwellings) between the development areas and of floorspace within particular areas shall be as per the floorspace schedule in Table 7.1 below. The figures for each development area are subject to the overriding maxima in terms of total floorspace (or dwellings) for the Development and total floorspace (or dwellings) within particular categories as specified within the *Description of Development*.

The black hatched area on Parameter Plan 04 indicates zones in which land use flexibility may be achieved through extension of adjacent land uses into these zones.

The blue hatched area on Parameter Plan 04 indicates zones in which land use flexibility may be achieved on the Western Edge through extension of either C2 or D1,B1(b) Sui Generis use.

Within area 3 and within the SSSI in area 1 on Parameter Plan 03, no buildings shall be constructed. Within the remainder of area 1, and in areas 2, 4 and 5 on Parameter 03, buildings will be restricted as set out in Parameter Statement 03.

Where land use zones shown on Parameter Plan 04 overlap with zones for movement corridors or Secondary Open Land, as set out in Parameter Plans 02 or 03, respectively, the width of Secondary Open Land shall not be less than as described in Parameter Statement 03, the boundaries between buildings and their curtilage movement routes and open land shall be determined by approval of reserved matters and the land uses shown on Parameter Plan 04 shall apply within the curtilage of any building constructed within any Building Zone indicated on Parameter Plan 05.

Use Class	C3, C4 (Market and Key Worker Residential)	D1, B1(b), sui generis (Research Uses)	C2 (Student Accommodation)	A1, A2, A3, A4, A5	C1 (Hotel)	C2 (Senior Care)	sui generis (B2) (Energy Centre)	C3 (Community Residential)	B1 (Police)	D1, D2 (Other Community Uses)
	Dwellings	GFA (sq.m.)	GFA (sq.m.)	GFA (sq.m.)	GFA (sq.m.)	GFA (sq.m.)	GFA (sq.m.)	GFA (sq.m.)	GFA (sq.m.)	GFA (sq.m.)
Development Area 1	800	68,800	73,400	200	-	-	-	300	-	1,100
Development Area 2	1,600	20,100	41,300	5,000	7,000	6,500	1,250	300	200	6,600
Development Area 3	1,000	48,600	-	200	-	-	-	300	-	1,300
Total Maximum	3,000	100,000	98,000	5,300	7,000	6,500	1,250	500	200	7,600

Table 7.1 Parameter Plan 04 Floorspace Schedule



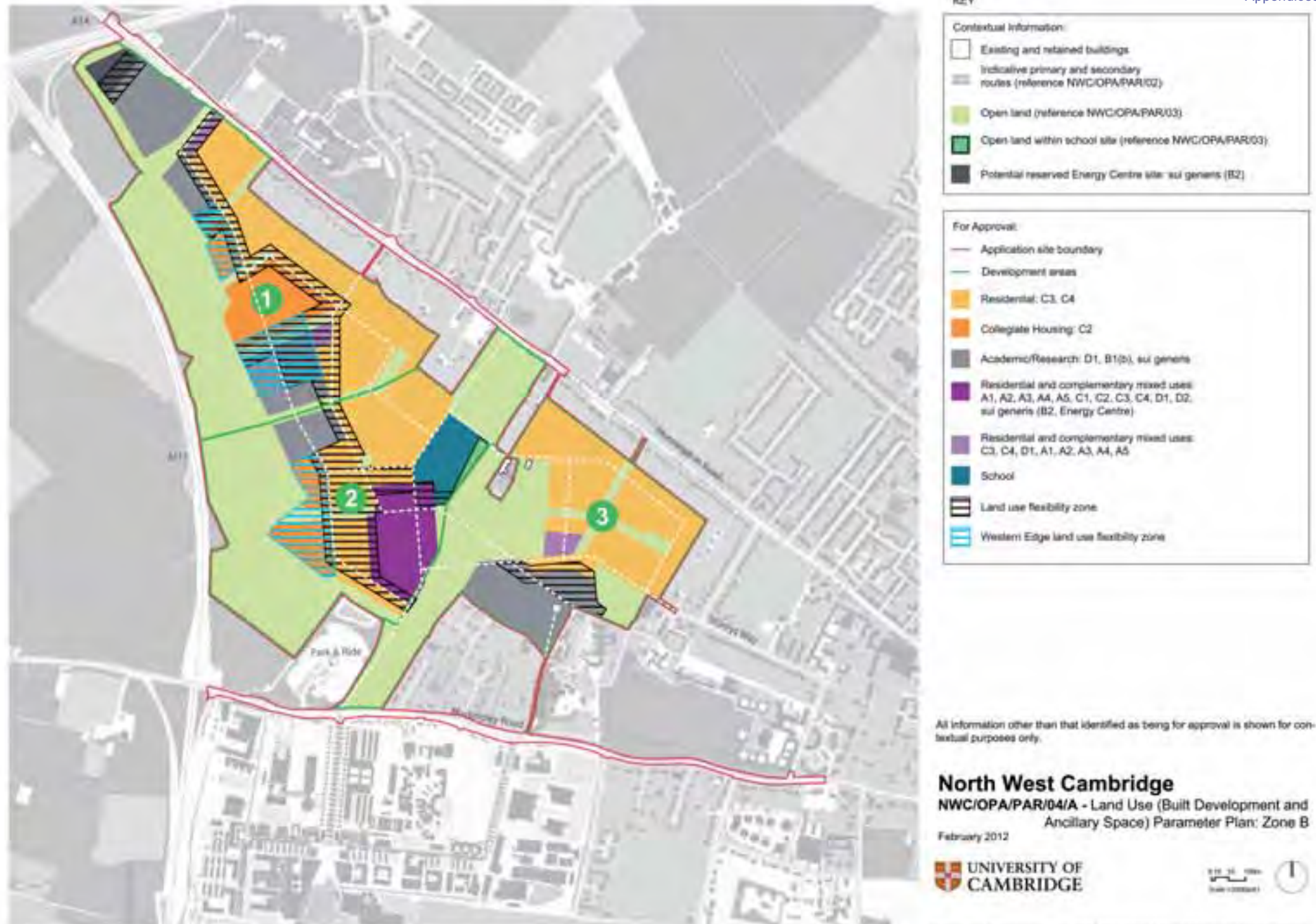


Figure 7.32 NWC/OPA/PAR/04/A - Land Use (Built Development and Ancillary Space) Parameter Plan: Zone B



## Parameter Plan 05: Building Zones; Zone B

The maximum and minimum dimensions of the buildings (excluding temporary structures or outbuildings) within each building zone of the development identified in Parameter Plan 05 are set out in the table below.

For the purpose of this table, length is represented as frontage, and width is represented as depth.

Within any given zone, the maximum height of street lighting columns will not exceed 8m. Floodlighting for formal sports pitches will not exceed 15m.

In the event of conflict between Parameter Plan 05 and/or Parameter Statement 05 and Parameter Plan 06, the maximum building heights stipulated in Parameter Plan 06 prevail subject to the following exception. Within Building Zones C, H, M, N, O, S and T, the maximum building heights stipulated in Parameter Statement 05 will prevail if (and only to the extent that) the resultant building height AOD would be lower.

For any building the footprint of which would fall within more than one Building Zone, the building frontage, depth and height will not exceed the height permitted within the Building Zone within which the majority of the building footprint is located.

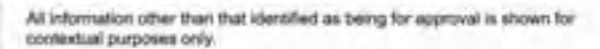
Where Building Zones shown on Parameter Plan 05 overlap with zones for movement corridors or open land, as set out in Parameter Plans 02 or 03, respectively, the width of Secondary Open Land shall not be less than as described in Parameter Statement 03, the boundaries between buildings and their curtilage, movement routes and Secondary Open Land shall be determined by approval of reserved matters and the land uses shown on Parameter Plan 04 shall apply within the curtilage of any building constructed within any Building Zone as indicated on Parameter Plan 05.

Building Zone	Minimum Building Frontage (m)	Maximum Building Frontage (m)	Minimum Building Depth (m)	Maximum Building Depth (m)	Minimum Building Height* (m)	Maximum Building Height* (m)
A	4	200	4	65	3	20
B	4	200	4	25	3	15
C	4	150	4	25	3	10
D	4	200	4	40	3	15
E	4	150	4	25	3	18
F	4	200	4	40	3	15
G	4	150	4	25	3	18
H	4	150	4	25	3	10
I	4	200	4	25	3	15
J	4	180	4	25	3	15
K	4	180	4	60	3	18
L	4	180	4	65	3	10
M	4	18	4	18	3**	8**
N	4	18	4	18	3	8
O	4	18	4	18	3	8
P	4	180	4	25	3	15
Q	4	115	4	25	3	15
R	4	200	4	40	3	15
S	4	20	4	25	3	10
T	4	200	4	40	3	10

Table 7.2 Parameter Plan 05 Building Dimensions Table

\*Measured from top of ground floor slab (at the principal entrance) to the apex of the roof (excluding any lightning conductors, weather vanes, rooftop plant (or parapet used to screen rooftop plant), equipment telecommunications equipment, floodlighting and aerials).

\*\* Excluding floodlighting



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NWC/OPA/PAR/05/A - Development Building Zones  
Parameter Plan: Zone B

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Figure 7.33 NWC/OPA/PAR/05/A - Development Building Zones Parameter Plan: Zone B





#### KEY

##### Contextual Information:

- Existing and retained buildings
- Indicative primary and secondary routes (reference Access Parameter Plan NWC/OPA/PAR/02)
- Open land (reference NWC/OPA/PAR/03)
- Open land within school site (reference NWC/OPA/PAR/03)
- Indicative location of Energy Centre flue
- Indicative potential reserved location of Energy Centre flue
- (H4) Existing ground level metres AOD
- Reserved Zone for Potential Energy Centre flue of 1.5m diameter and 53.5m AOD

##### For Approval:

- Application site boundary

##### Maximum building heights

- |                 |                 |
|-----------------|-----------------|
| 25.0 metres AOD | 35.5 metres AOD |
| 26.5 metres AOD | 36.0 metres AOD |
| 29.0 metres AOD | 38.5 metres AOD |
| 29.5 metres AOD | 37.0 metres AOD |
| 30.0 metres AOD | 37.5 metres AOD |
| 31.0 metres AOD | 38.5 metres AOD |
| 31.5 metres AOD | 39.0 metres AOD |
| 32.0 metres AOD | 40.0 metres AOD |
| 32.5 metres AOD | 40.5 metres AOD |
| 33.0 metres AOD | 41.0 metres AOD |
| 33.5 metres AOD | 43.0 metres AOD |
| 34.0 metres AOD |                 |
- Zone for Energy Centre flue of 0.6m diameter and 42.5m AOD

## North West Cambridge

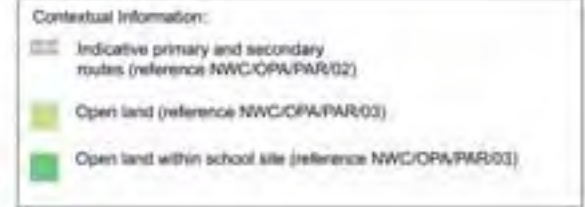
### NWC/OPA/PAR/06/A - Building Heights Parameter Plan: Zone B

February 2012



Figure 7.34 NWC/OPA/PAR/06/A - Building Heights Parameter Plan: Zone B





— Application site boundary

- 12.5 metres AOD  
— 15 metres AOD  
— 17.5 metres AOD  
— 20 metres AOD  
— 22.5 metres AOD  
— 25 metres AOD

 Development area

**North West Cambridge**  
NWC/OPA/PAR/07/A - Topography Parameter  
Plan: Zone B



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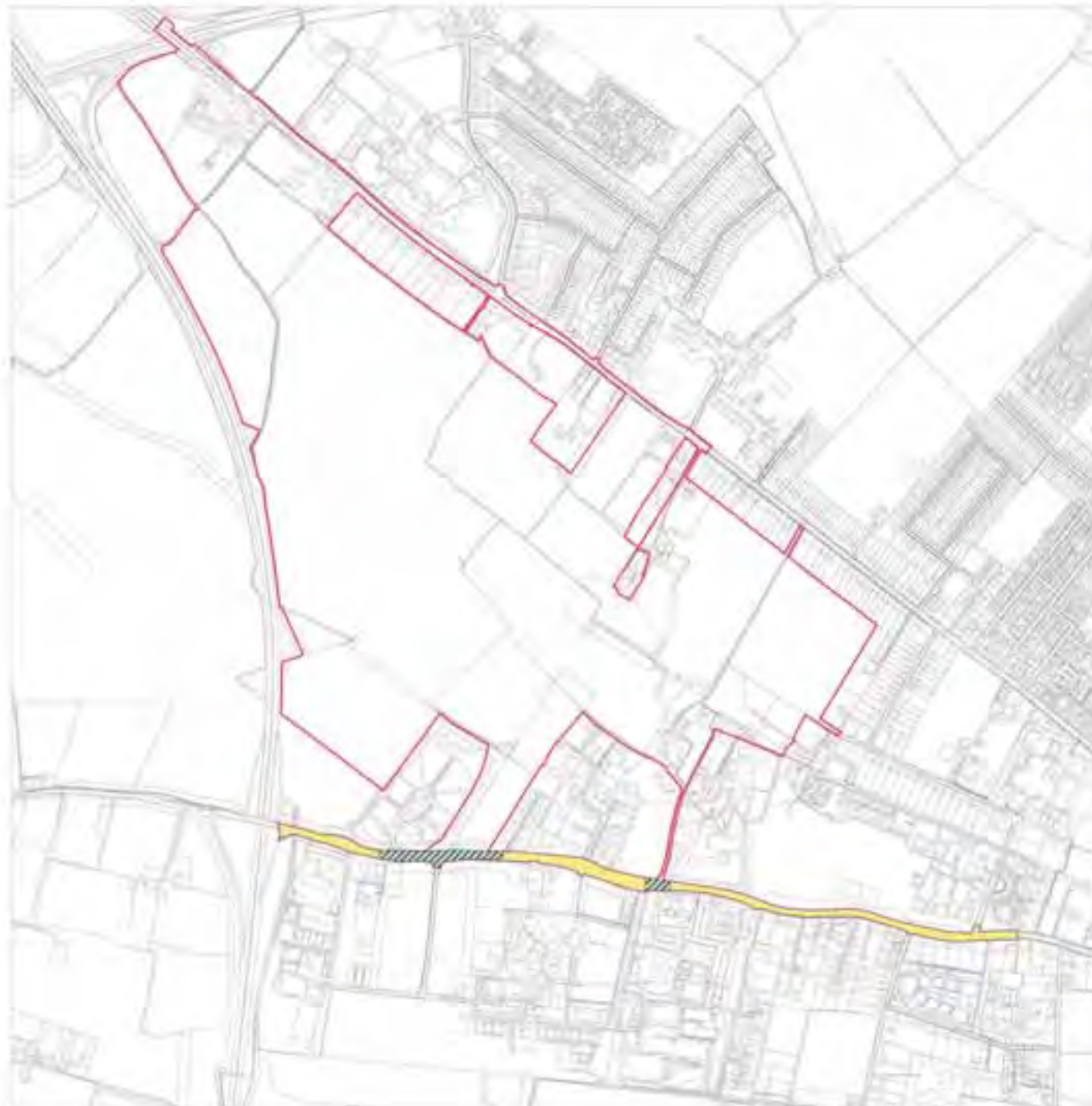




Figure 7.37 NWC/OPA/PA/09 - Parameter Plan: Madingley Road Highway & Utility Works

## KEY

For Approval:

- Application site boundary
-  Zone of highway works required to facilitate access to the Proposed Development and associated utility diversions
-  Zone for installation of utility apparatus to link to existing apparatus and/or to supply electricity, gas, potable water and telecommunications services to the Proposed Development, construction of pumped foul rising main and ancillary highway works; related landscaping, accommodation works, street furniture, drainage, telemetry and utilities

All information other than that identified as being for approval is shown for contextual purposes only.

### North West Cambridge

NWC/OPA/PAR/09 - Parameter Plan:  
Madingley Road Highway & Utility Works

September 2011



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## APPENDIX C - RELEVANT REGULATORY REFERENCE

### PLANNING

**NATIONAL PLANNING POLICY FRAMEWORK (2012)**

**NORTH WEST CAMBRIDGE AREA ACTION PLAN (2009)**

**SOUTH CAMBRIDGESHIRE CORE STRATEGY (2007)**

**CAMBRIDGE CITY LOCAL PLAN (2006)**

**PUBLIC ART SUPPLEMENTARY PLANNING GUIDANCE**

Local Development Framework, South Cambridgeshire District Council (2009)

### Urban Design

**DISTRICT DESIGN GUIDE SPD: HIGH QUALITY AND SUSTAINABLE DEVELOPMENT IN SOUTH CAMBRIDGESHIRE**

Local Development Framework, South Cambridgeshire District Council (2010)

**CAMBRIDGESHIRE QUALITY CHARTER FOR GROWTH**

Cambridgeshire Horizons (2009)

**CAMBRIDGESHIRE DESIGN GUIDE FOR STREETS AND PUBLIC REALM (2007)**

Towards Better Practice (CABE, 2006)

**CODE FOR SUSTAINABLE HOMES**

Communities and Local Government (2010)

**BREEAM: NEW CONSTRUCTION – NON-DOMESTIC BUILDINGS (2011)**

BRE Global Ltd (2011)

### Landscape

**CAMBRIDGE CITY COUNCIL OPEN SPACE AND RECREATION STRATEGY**

Local Development Framework, Cambridge City Council (2011)

**LANDSCAPE IN NEW DEVELOPMENTS SPD**

Local Development Framework, South Cambridgeshire District Council (2010)

**OPEN SPACE IN NEW DEVELOPMENTS SPD**

Local Development Framework, South Cambridgeshire District Council (2009)

**CAMBRIDGESHIRE DESIGN GUIDE FOR STREETS AND PUBLIC REALM (2007)**

Cambridgeshire Horizons and Cambridge City Council (2007)

**FIELDS IN TRUST STANDARDS**

(Previously known as National Playing Fields Association or NPFA).

## **Transport**

### **STANDARD DEVELOPMENT SPECIFICATION (HIGHWAYS)**

Cambridgeshire County Council

### **MANUAL FOR STREETS 1 and 2 (2010)**

Department for Transport (2010)

### **CYCLING IN NEW DEVELOPMENTS (2008)**

Cambridgeshire Cycling Campaign (2008)

### **CAR PARKING; WHAT WORKS WHERE (2006)**

Homes and Communities Agency (2006)

## **Waste**

### **RECAP WASTE MANAGEMENT DESIGN GUIDE SPD (2012)**

Cambridgeshire County Council (2012)

## **Drainage**

### **SUSTAINABLE DRAINAGE**

Cambridge Design and Adoption Guide

## **Accessibility**

Principles of Inclusive Design (CABE, 2006)

Lifetime Homes Design Guide (2011)

## **Secured by Design**

### **SECURED BY DESIGN (SBD) – DESIGN AND ACCESS STATEMENTS, HOW TO USE THEM TO PREVENT CRIME (2010)**

Communities and Local Government (2010)

# APPENDIX D - ILLUSTRATIVE SECTION THROUGH WESTERN EDGE

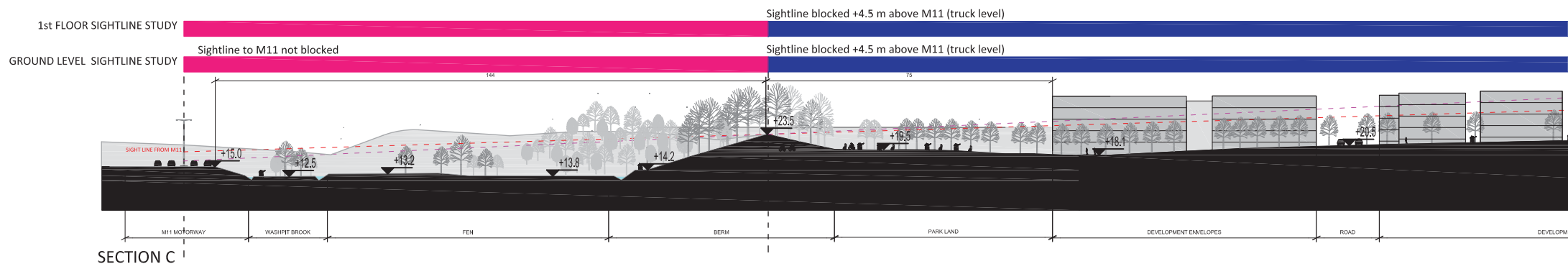
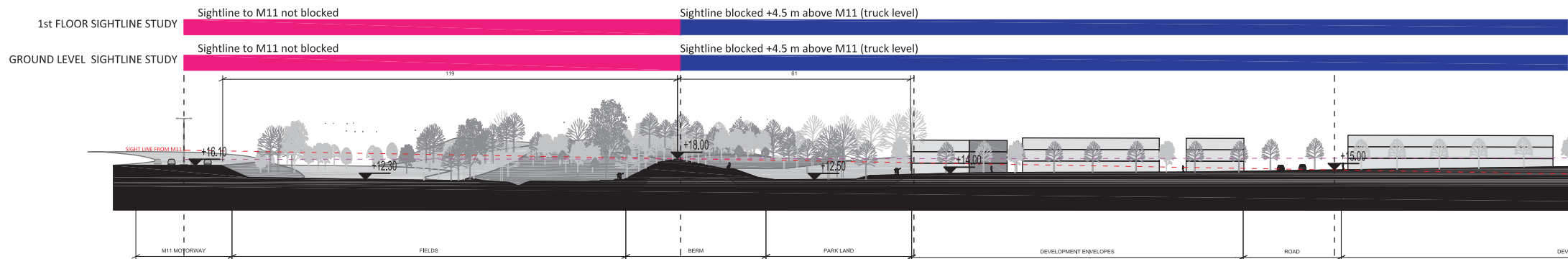
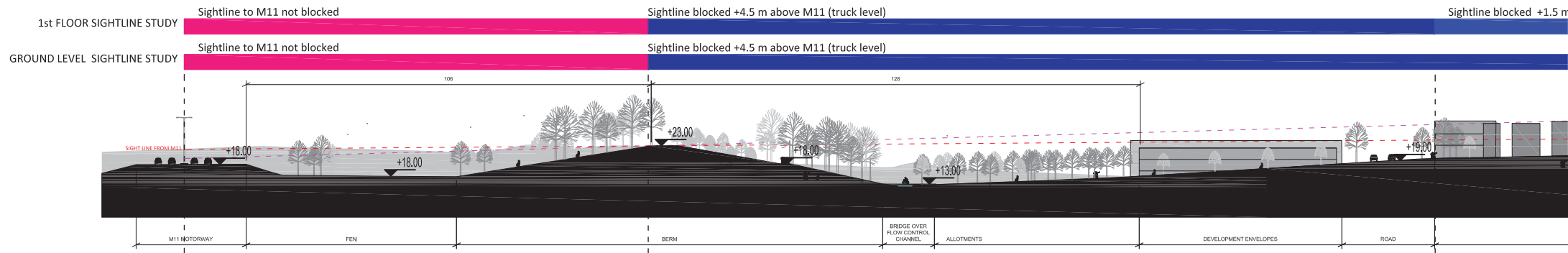
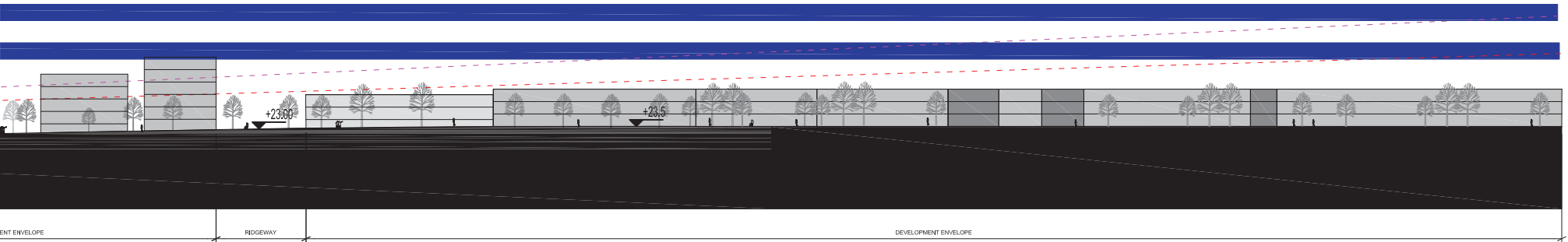
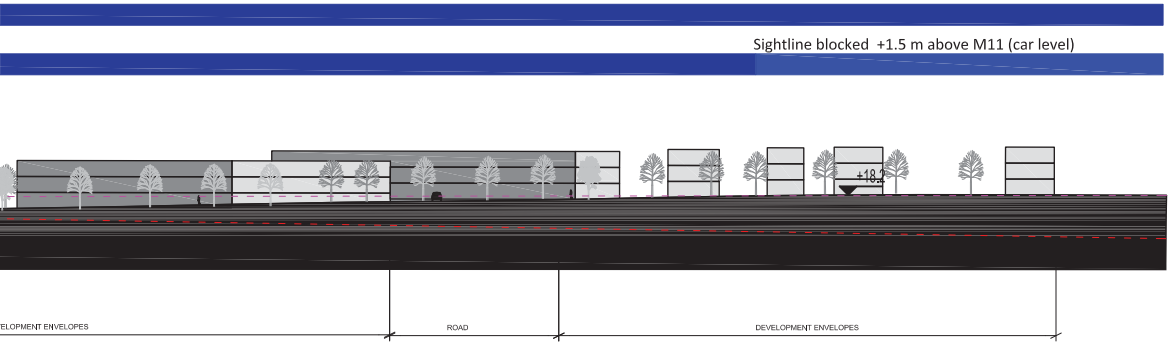
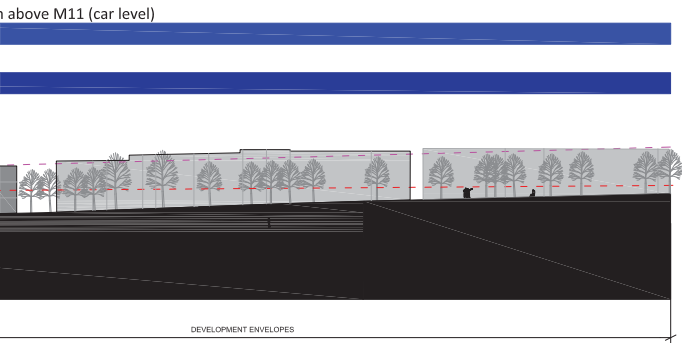
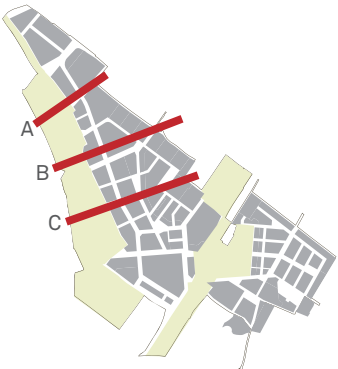


Figure 7.38 Illustrative Section A, B & C through the Western Edge





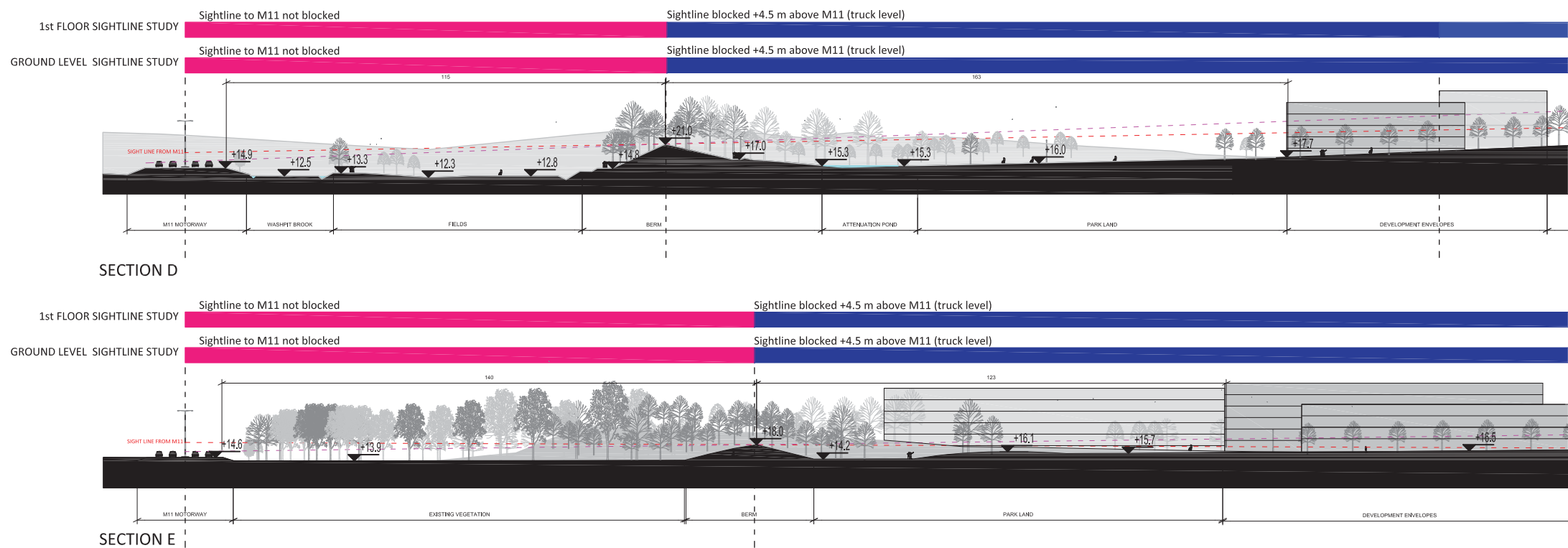
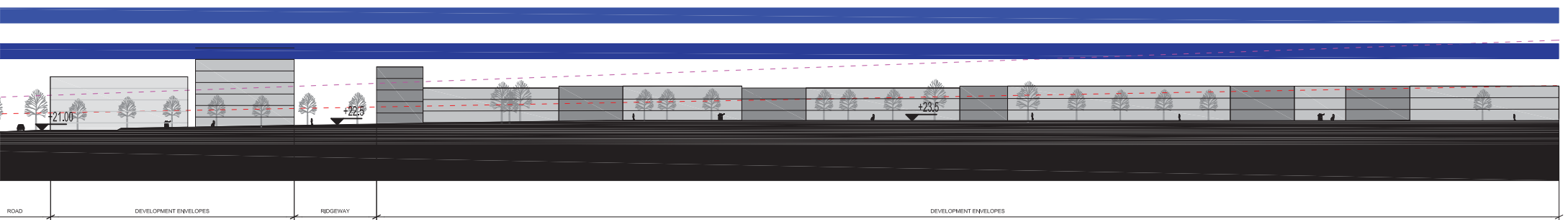
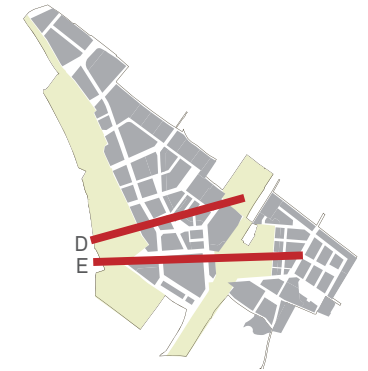
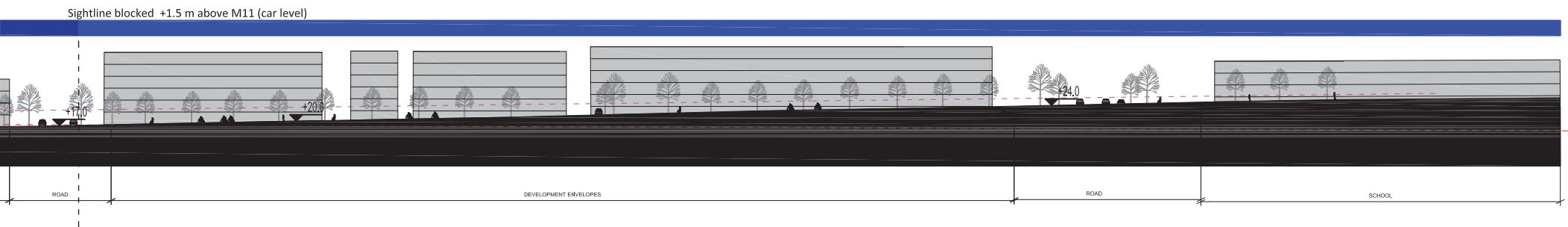


Figure 7.39 Illustrative Section D & E through the Western Edge



Sightline blocked +1.5 m above M11 (car level)





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