Rugby Radio Station
KEY PHASE 1

Tier 2: Application to Discharge Outline Conditions 11 & 12

Design Guide

This Design Guide has been prepared in response to Condition 11 of the Rugby Radio Station Outline Planning Permission (application reference R11/0699).

The Design Guide is to be read with reference to the Rugby Radio Station (Outline Planning Application) Design and Access Statement.

UPDATE NOVEMBER 2015

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Preface

Outline planning permission for a sustainable urban extension (SUE) at Rugby Radio Station was granted by Rugby Borough Council in May 2014 (ref: R11/0699). The SUE comprises 6,200 dwellings together with up to 12,000 m² retail (A1), up to 3,500 m² financial services (A2) and restaurants (A3-A5), up to 3,500 m² for a hotel (C1), up to 2,900 m² of community uses (D1), up to 3,100 m² assembly and leisure uses (D2), 31 hectares (up to 106,000sqm of commercial and employment space (B1, B2 and B8).

Due to the strategic nature of the SUE and the scale and complexity of the development, the site will be developed in a series of 'Key Phases'. This will ensure that implementation can respond to market demand and the practicalities of development. The conditions attached to the outline planning permission require a three tiered approvals process to control the design and delivery of the development from outline, to Key Phase to detailed site level. This approach is set out below.

Tier 1: Outline Planning Permission

The outline planning permission approved the broad quantum and disposition of land uses as defined by the Development Specification, Parameter Plans and the general design principles within the Design and Access Statement. Submission and approval of a set of site wide strategies in relation to specific topics is required by outline condition 6, prior to the commencement of development or approval of any Reserved Matters applications. The site wide strategies will supplement the parameters set by the outline permission.

Tier 2: Key Phase

Outline conditions 9, 11 and 12 require approval of detailed documentation to agree the definition of and provide a framework for each Key Phase. At this tier a greater level of detail is provided specific to that Key Phase with the required technical information to inform and provide a base against which Reserved Matters applications within the Key Phase area can be assessed:

- Condition 9: Key Phase Definition Statement - to define and justify the extent of that Key Phase
- Condition 11: Key Phase Framework – following the definition of each Key Phase, a Framework including a Design Guide / Code, Delivery Plan and other Key Phase specific documents including any relevant supplements to the Tier 1 site wide strategies, that establish the design and delivery framework for that Key Phase, will be submitted for approval. These documents ensure that the Council can exert control over subsequent Reserved Matters applications and the implementation of development in that Key Phase.
- Condition 12: Key Phase Technical Requirements – detailed assessments for that Key Phase relating to specific technical issues such as heritage, ground conditions and ecology.

Tier 3: Reserved Matters

Once a Key Phase has been fully approved, including the relevant Framework documents relating to Tier 2, Reserved Matters applications can be approved for individual parcels or infrastructure within that Key Phase. These Reserved Matters applications will provide a further level of detailed design in accordance with the Framework for that Key Phase, including the Design Guide and the requirements of outline condition 15 (Reserved Matters applications).

KP1 Update November 2015

A well evidenced design evolution has been undertaken to KP1 to ensure the highest quality precedent for the first phase of development. This will set the standard for all future phases.

This design evolution has resulted in a number of changes to KP1.

As a result the planning position has progressed through the following:

a) Non-Material Amendments to the approved KP1 Green and Grey Infrastructure Reserved Matters Applications (approved June 2015);
b) Non-Material Amendments to the Outline Planning Permission Conditions 5, 23 and 28 in respect of the alignment and access arrangements from the A428 (approved March 2015);
c) Full Planning Permission for a new access junction from the A428 into KP1 (approved March 2015);
d) The Dollman Common Reserved Matters Application (submitted September 2015).

This detailed design evolution has also warranted some further improvements to KP1 including:

1) the relocation of the primary school to a centralised and prominent location within KP1;
2) the previous school site has been substituted with a residential parcel;
3) the above amendments have necessitated a change to the KP1 boundary to form a logical residential parcel. As a result there is a minor addition of residential and wildlife corridor use to KP1;
4) the mixed use area is now consolidated at Dollman Farm.

To ensure that RBC can determine future KP1 reserved matters applications against robust design guidance which reflects this updated position, it has been necessary to update the approved Design Guide.

The Design Guide 'November 2015 Update' incorporates necessary amendments to 'design fix' information.

There have been minimal changes to the illustrative material on the basis that this is only indicative and provides a guide rather than a 'fix'.

KEY PHASE 1

RRSLP are committed to the early delivery of the SUE and are now seeking to facilitate a start on site through the submission of the necessary material to allow Key Phase 1 to progress and the first elements of infrastructure to be implemented. This requires the approval of a series of documentation in accordance with the tiered approach outlined above. To this end, five packages of information are being submitted to RBC for approval to facilitate the commencement of Key Phase 1, as follows:

Fig 0.1: Aerial Photograph with Rugby Radio Station Outline Planning Application site (red line) and Key Phase 1 (blue line)

Tier 1 - Outline

1. Condition 6 Site Wide Strategies
- 6a) Delivery Management Strategy
- 6b) Landscape and Ecological Mitigation, Enhancement and Management Strategy
- 6c) Heritage Management Plan
- 6d) Site Wide Code of Construction Practice Part A

The extent of KP1 in relation to the SUE is illustrated in Figures 0.1, 0.2 and 0.3.

Tier 2 - Key Phase

2. Condition 9 KP1 Definition
- Key Phase 1 Definition Statement

3. Conditions 11 and 12- Key Phase 1 Framework and Technical Requirements
- **11a) Key Phase 1 Design Guide**
- 11b) Key Phase 1 Delivery Plan
- 11e) Key Phase 1 Code of Construction Practice Part B
- 12a) Key Phase 1 Heritage Statement and Mitigation Strategy
- 12b) Key Phase 1 Ecological Mitigation and Enhancement Strategy
- 12c) Key Phase 1 Foul and Surface Water Drainage Strategy
- 12d) Key Phase 1 Site Investigation of Ground Conditions

Tier 3 – Reserved Matters

Two Reserved Matters applications, together with full supporting technical information relevant to the Reserved Matters areas, in accordance with outline condition 15, are submitted to RBC to seek approval for

4. KP1 Strategic Green Infrastructure

5. KP1 Strategic Grey Infrastructure

This Key Phase 1 Design Guide forms part of the Tier 2 application to discharge in part outline condition 11 – Key Phase 1 Framework.

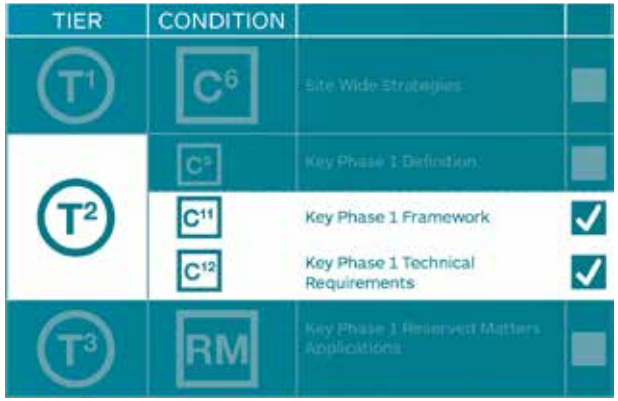

Fig 0.2: Rugby Radio Station site viewed from DIRFT facing North West

Fig 0.3: Rugby Radio Station site viewed from Rugby facing North East

Overview of the Design Guide Contents

The Design Guide has been structured as follows:

- Part A: Background (this chapter)
- Part B: Spatial
- Part C: Detailing the Place
- Part D: Technical

Part A: Background, introduces the Design Guide and provides an overview of the context for the Key Phase 1 Design Guide in geographic, planning and design terms.

Part B: Spatial, presents design coding information that establishes the development framework for Key Phase 1 by establishing design guidance for:

- Green Infrastructure;
- Movement & Access;
- Residential Built Form;
- Mixed Use Built Form; and
- Commercial Built Form;

Part C: Detailing the Place, provides design guidance on matters of detail including materials palettes, boundary treatment, parking solutions, street furniture and lighting.

Part D: Technical, provides additional information on specific technical details that any future detailed development proposals must take account of.

Appendices: Associated important Key Phase 1 information is set out in a set of appendices including indicative sequencing, complicance checklist and illustrative master plan. Appendices also include a sustainability statement that sets out sustainability targets for KP1 in terms of energy, waste and water.

Overview of RRS
Key Phase 1 Design Guide Structure:

	PART A: BACKGROUND	
	Explains and appraises the context of the Key Phase 1 development area and the proposed development.	
	Chapter 1	Introduction
	Chapter 2	Context
	PART B: SPATIAL	
	Establishes the a comprehensive framework for development for the Key Phase 1 area under chapter headings as follows:	
	Chapter 3	Green Infrastructure
	Chapter 4	Movement & Access
	Chapter 5	Residential Built Form
	Chapter 6	Mixed Use Built Form
	Chapter 7	Commercial Built Form
	PART C: DETAILING THE PLACE	
	Detailed design considerations for residential, mixed use, commercial and public realm design.	
	Chapter 8	Detailing the Place
	PART D: TECHNICAL	
	Provides additional detailed information to inform future development proposals within Key Phase 1.	
	Chapter 9	Technical Details

[INSERT PART A SECTION DIVIDER]

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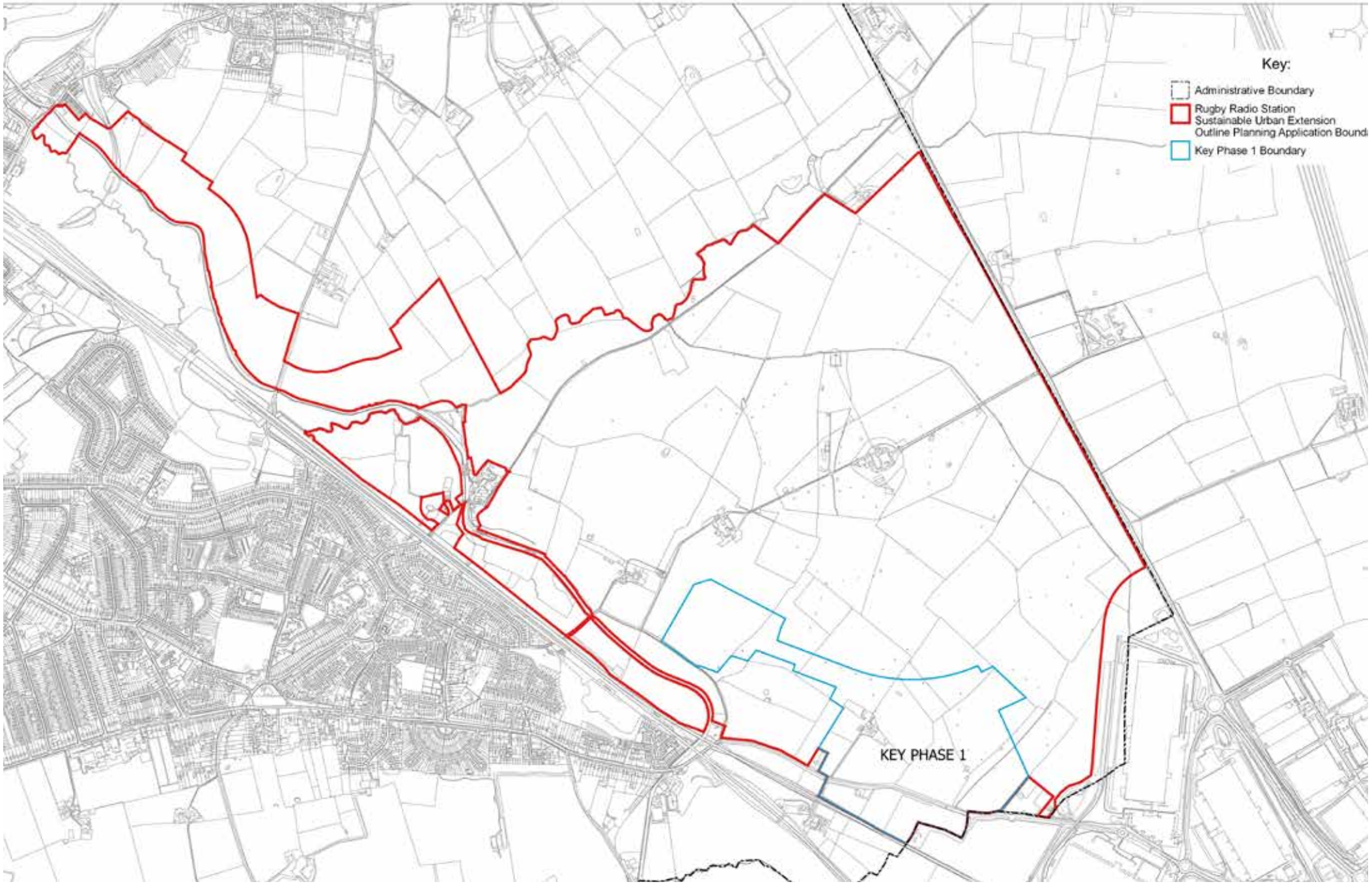
Chapter 1
Introduction

Fig 1.1: Rugby Radio Station Outline Planning Application Area and Key Phase 1 Boundary



1.1 Purpose of the Design Guide

This Rugby Radio Station Key Phase 1 Design Guide has been submitted as part of a package of documents known as the Key Phase 1 Framework Documents. These documents are required by Rugby Borough Council to discharge Condition 11 of the Outline Planning Permission (ref: R11/0699) in respect of Key Phase 1.

The purpose of this Design Guide is to provide design guidance for the development of Key Phase 1 of Rugby Radio Station against which subsequent Reserved Matters Applications within that phase will be considered.

It has been prepared to ensure that the highest standard of design is delivered when preparing and considering Reserved Matters applications that are submitted pursuant to the Key Phase 1 of the Outline Planning Permission for the site.

In so doing, the Design Guide carries forward the design ethos as set out in the Outline Planning Design and Access Statement, translating this into the first Key Phase of the development.

The Design Guide will be the first in a series of such Guides that will be prepared for Rugby Radio Station as further Phases of the development are progressed.

Terminology:

- Hereafter the Rugby Radio Station Key Phase 1 Design Guide will be referred to as the **Design Guide**;
- Rugby Borough Council will be referred to as **RBC**;
- The Outline Planning Application will be referred to as **OPA**; and
- Rugby Radio Station will be referred to as **RRS**.
- Sustainable Urban Extension will be referred to as **SUE**.
- Key Phase 1 will be referred to as **KP1**.

1.2 Status of the Design Guide

The Design Guide has been prepared to part discharge condition 11 on the OPA Consent for RRS as relating to Key Phase 1. As such, the Design Guide is consistent with, and provides an enhanced level of detail to the approved Tier 1 documents for the wider site, namely the Parameter Plans, Development Specification, the Design & Access Statement and Environmental Impact Assessment and should therefore be read in conjunction with these documents.

The Design Guide is specific to KP1. However it draws upon national and local best practice urban design guidance including By Design: Urban Design in the Planning System (2000), The Urban Design Compendium 1 & 2 (2000, 2007); Manual For Streets 1 & 2 (2007, 2010), Building for Life 12 (BfL12) (2012). The Design Guide also considers and responds to local design Guidance including the Sustainable Design & Construction SPD (RBC, LDF, 2012).

The Design Guide has been approved by Rugby Borough Council and is a material consideration in the determination of applications in KP1.

1.3 Design Fixes and Design Guidance

The Design Guide includes:

a. **Mandatory design fixes** - elements within the Design Guide that must be adhered to.

b. **Supporting design guidance** - illustrative content that shows how development may be configured to comply with mandatory design fixes.

Figure 1.2, over page, provides an example of the relationship between design fixes and design guidance and illustrates how they are identified.

How design fixes are presented in the Design Guide:

- Design Fixes are identified in summary lists at the start of chapters.
- Further detail regarding design fixes and supporting design guidance is then provided within the chapter, with fixes identifed as illustrated in Figure 1.2.
- Design Fixes from all chapters are listed together in the Compliance Checklist provided in Appendix 1, see 1.7 for further detail on the purpose of the checklist.

Fig 1.2: Example page layout showing how design fixes and design guidance are presented in the Design Guide

Introduction to design component

Design fixes: identified in dashed boxes

Indicative **design guidance** illustration

Indicative precedent images

3.2.1 Wildlife Corridors

Character and Form

A network of Wildlife Corridors are required to provide protected and improved habitat to preserve the existing colony of GCN found on site. This network will fulfill a variety of functions and is also required to obtain a licence from Natural England. Indicative plans of 60m and 20m wide Wildlife Corridors are illustrated in Figure 3.3 and Figure 3.4 respectively.

The following determines the location and layout of the Wildlife Corridors:

Location
- Location fixed on the Regulatory Plan. Located throughout the KP1 area - primarily linking east- west from Normandy Hill towards the School.

Size / Scale
- Primary Corridor - minimum 60m wide
- Secondary Corridor - minimum 20m wide
- Other supplementary wildlife corridors.

Function & Features
- Certain functions fixed on Regulatory plan including:
- Connecting a network of existing and proposed ponds / waterbodies and habitat areas;
- Provision of GCN hibernacular features in close proximity to existing and proposed ponds;
- Connecting existing and proposed green spaces with the wider landscape;
- A mosaic of appropriate habitats is to be created to include long grass, scrub, shrubs and native tree planting;
- Hedgerows – to be retained where required and enhanced to provide strong biodiversity linkages;

Function & Features continued:
- Provision for pedestrian / leisure routes compatible with habitat creation. Timber bridge structures at key locations allow GCN's to move beneath pathways. Additional bridge structures allow pedestrian movement over SUDS features.
- Provision for low impact recreation and informal play spaces including educational features and interpretation boards;
- Use of natural landforms and materials compatible with habitat creation.
- Incorporation of productive landscape in the form of orchards;
- Incorporation of areas of retained Hedge & Furrows;
- Incorporation of necessary SuDS features in accordance with the KP1 Surface Water Drainage Strategy;
- Furrow depressions will be used within the wildlife corridors as SuDS features consistent with the KP1 surface water drainage strategy.
- Provision of appropriate wildlife crossing points (tunnels and crossings) where corridors intersect with vehicular routes;
- NOT to include any vehicular routes apart from at defined crossing points.

1.4 Using the Design Guide

The Regulatory Plan forms the overriding design control tool and informs the structure of the Design Guide.

The Design Guide document must be read alongside the accompanying Regulatory Plan. A full size version of the Regulatory Plan (1:2,000 scale at A0) is provided in the inside sleeve of paper copies of this Design Guide.

The following pages explain how the reader should use the Design Guide and Regulatory Plan.

Figure 1.3, opposite, gives an overview of the relationship between the Regulatory Plan and Design Guide document: **the Regulatory Plan is the most important Design Guide plan** and its content is explained in more detail in chapters within the document that relate to the plan's key. Chapters within Part B of the document expand upon the spatial framework for development, covered under the five topic areas listed. More detailed matters of design are covered in Part C Detailing the Place and Part D Technical Details.

Figure 1.4, over page presents a flow chart diagram of 'How to Use the Design Guide', showing how the chapters build up, explaining layers of Regulatory Plan and associated material.

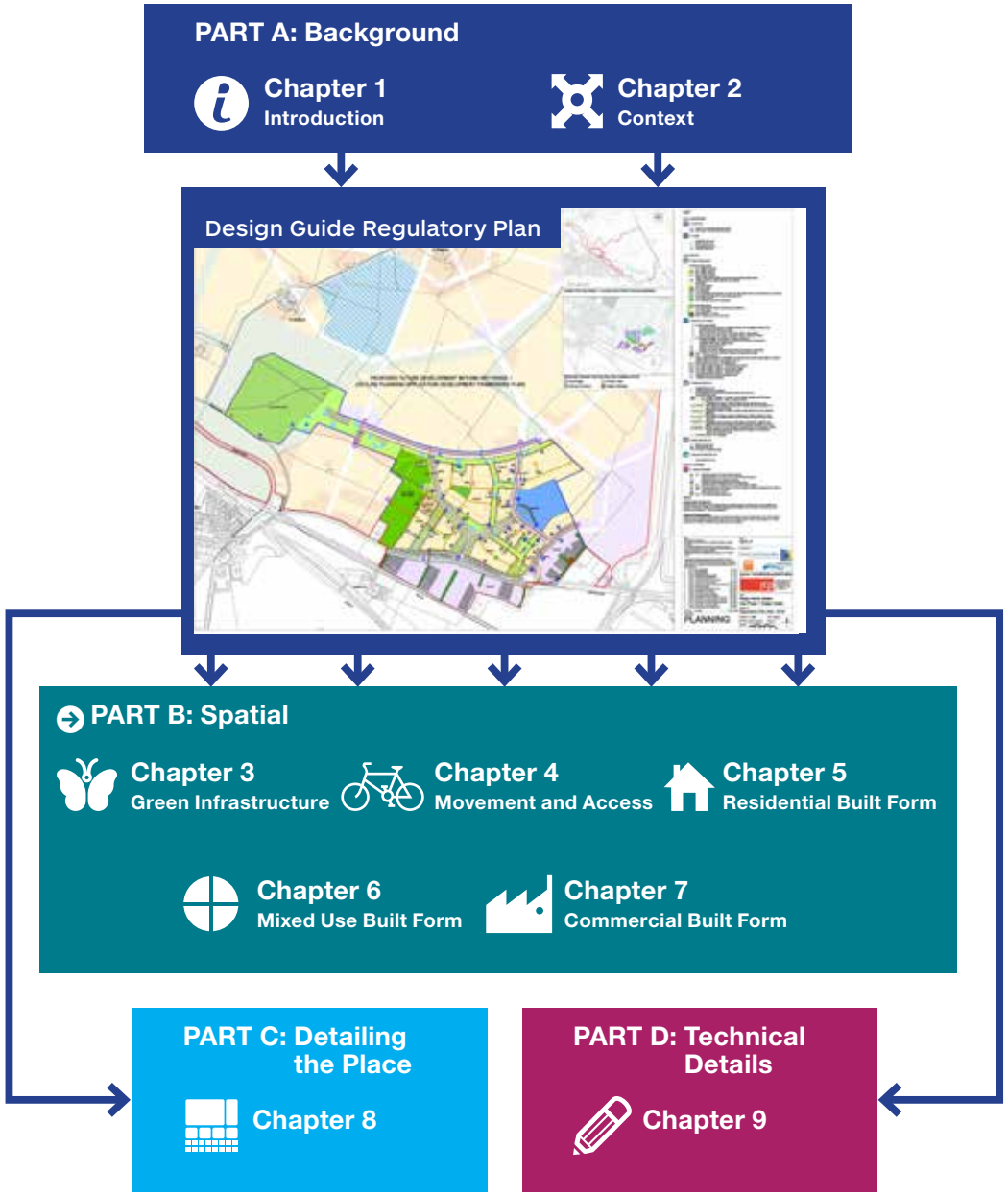


Fig 1.3: Design Guide Structure

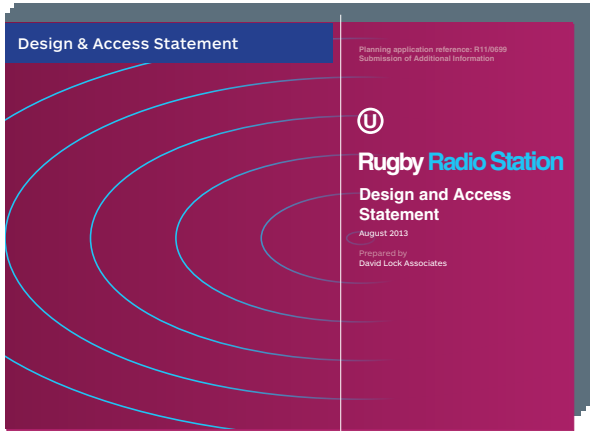
Fig 1.4: How to use the Design Guide

The Design & Access Statement (DAS) for the Outline Planning Application set the overall design context for the wider scheme. **The Design Guide for KP1 should be read alongside the DAS.**

The main principles contained within the DAS, together with the OPA Parameter Plans, provide the framework for the **Design Guide** and Regulatory Plan.

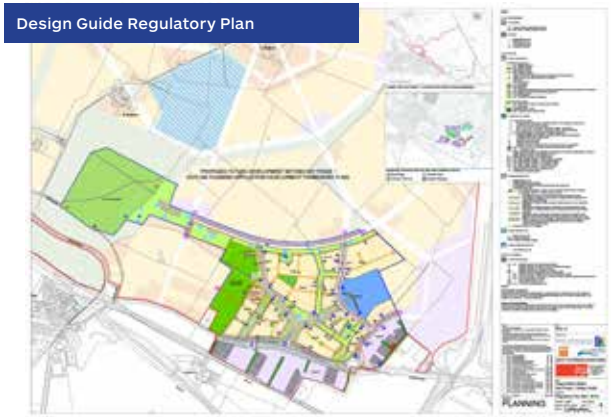
The **Regulatory Plan** establishes the precise framework for development of KP1. Each layer of the Regulatory Plan relates to a specific chapter of the Design Guide as explained below in the following flow chart:

Design & Access Statement



Design Guide Report

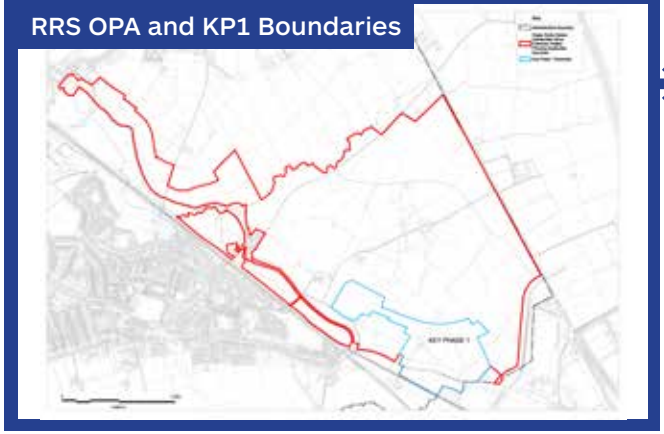
Design Guide Regulatory Plan



PART A: Background
Chapter 1 Introduction

Sets out the purpose, status and how to use the Design Guide. OPA and KP1 boundaries are shown on the Regulatory Plan.

RRS OPA and KP1 Boundaries



PART A: Background

Chapter 2 Context

Design fixes including existing site features to be retained and key elements of the Parameter Plans.

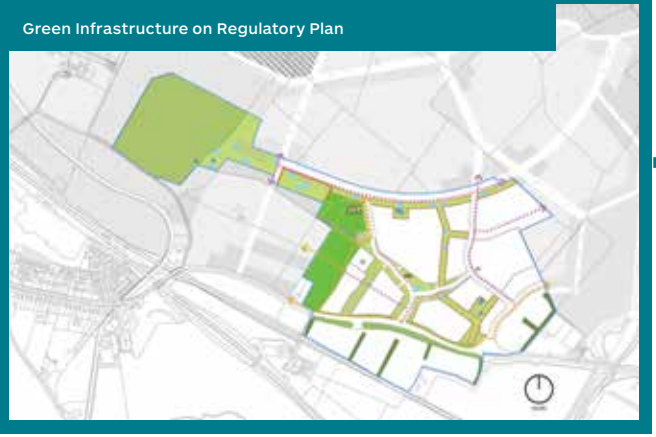
OPA DFP

PART B: Spatial

Chapter 3 Green Infrastructure

The Regulatory Plan defines the interconnected landscape features, individual green infrastructure components and key open spaces.

Green Infrastructure on Regulatory Plan



PART B: Spatial
Chapter 4 Movement and Access

The Regulatory Plan defines the street network together with points of access, street hierarchy, pedestrian and cycle routes.

Movement & Access on Regulatory Plan

PART B: Spatial
Chapter 5 Residential Built Form

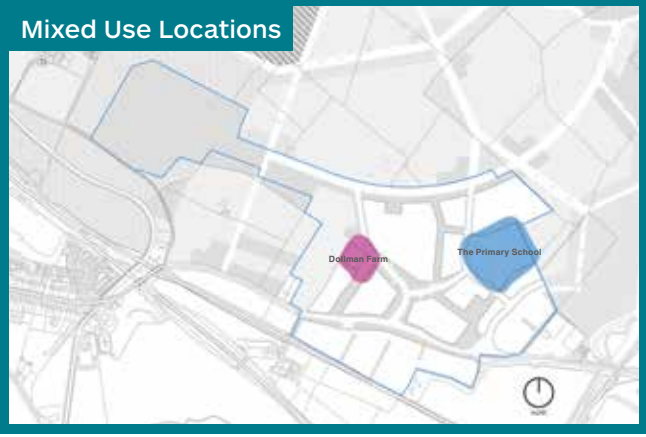
The Regulatory Plan defines the key design fixes for the residential parcels. Additional design fixes for edge conditions, dwellimg typologies, parking & boundaries are all set out in tabular form.

Residential highlighted on Regulatory Plan

PART B: Spatial
Chapter 6 Mixed Use Built Form

The Regulatory Plan defines the location of mixed use areas. More detailed design fixes are set out in this chapter.

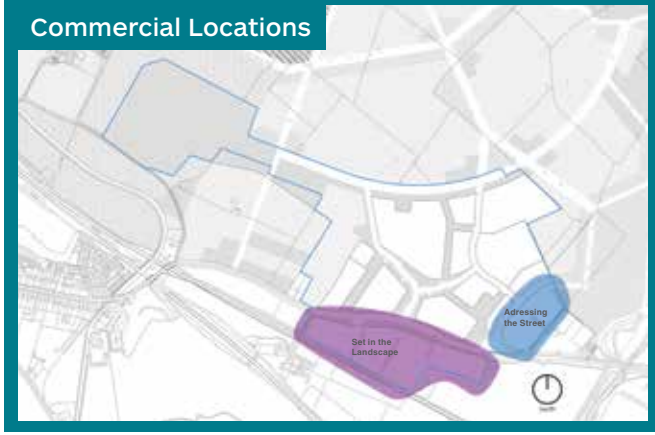
Mixed Use Locations



PART B: Spatial
Chapter 7 Commercial Built Form

Commercial development parcels. Further design fixes and design guidance is set out in this chapter including building orientation, parking, servicing and landscaping.

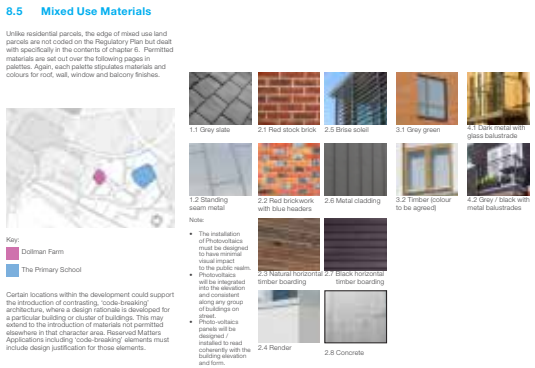
Commercial Locations



PART C: Detailing the Place
Chapter 8 Detailing the Place

Further detailed design considerations for built form to supplement the Regulatory Plan including design fixes for architectural principles, building features, material palettes, and design of public realm.

Material Palette Example


8.5 Mixed Use Materials

Unlike residential parcels, the edge of mixed use land parcels are not coded on the Regulatory Plan but dealt with specifically in the contents of chapter 6. Permitted materials are set out over the following pages in palettes. Again, each palette stipulates materials and colours for roof, wall, window and balcony finishes.

Key:
Dolman Farm
The Primary School

Certain locations within the development could support the introduction of contrasting, 'code-breaking' architecture, where a design rationale is developed for a particular building or cluster of buildings. This may extend to the introduction of materials not permitted elsewhere in that character area. Reserved Matters Applications including 'code-breaking' elements must include design justification for those elements.

1.1 Grey slate
2.1 Red stock brick
2.5 Brise soleil
3.1 Grey green
4.1 Dark metal with glass balustrade
1.2 Standing seam metal
2.2 Red brickwork with blue headers
2.6 Metal cladding
3.2 Timber (colour to be agreed)
4.2 Grey / black with metal balustrades

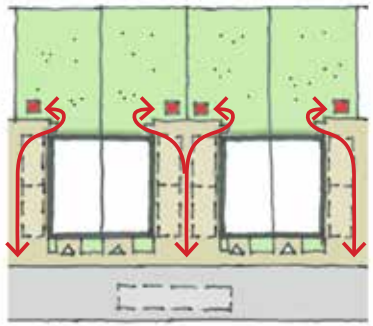
Note:
- The installation of Photovoltaics must be designed to have minimal visual impact to the public realm.
- Photovoltaics will be integrated into the elevation and consistent along any group of buildings on street.
- Photo-voltaics panels will be designed / installed to read coherently with the building elevation and form.

2.3 Natural horizontal timber boarding
2.7 Black horizontal timber boarding
2.4 Render
2.8 Concrete

PART D: Technical
Chapter 9 Technical Standards

Specific technical considerations and design fixes noted on the Regulatory Plan are expanded upon in this chapter with details on other technical issues too including parking standards, utilities, play provision.

Technical Details Example



1.5 The Regulatory Plan

The Regulatory Plan provides the main design control tool. It sets the framework for development within KP1.

The Regulatory Plan reflects the Development Framework Plan from the Outline Planning Application, demonstrating broad compliance with its parameters.

It shows the Design Fixes for KP1 that are further explained in the related chapters of the Design Guide document.

The Regulatory Plan defines key design structuring elements these are expanded upon in chapters of the Design Guide.

The key to the Regulatory Plan precisely cross references chapters in Part B of the Design Guide, comprising:

- Green Infrastructure;
- Movement & Access;
- Residential Built Form;
- Mixed Use Built Form; and
- Commercial Built Form.

The Regulatory Plan also illustrates points of more technical detail that are expanded upon further either within the Green Infrastructure chapter of the Guide or within the Technical Details chapter. These items include ecology issues such as ponds, locations for play areas, utilities including locations for the water pumping station, and indicative parking areas for community facilities including the school and central sports pitches.

Parcel references:
The Regulatory Plan includes parcel references for development parcels. These letters are not cross referrenced in the Design Guide, but are provided for ease of reference for future Reserved Matters applications. These parcel references do not represent a phasing sequence.

Further Regulatory Plan reference:
- An extract of the Regulatory Plan is presented in Figure 1.5, opposite.
- For a full scale print version of the Regulatory Plan please refer to the A0 copy located in the inside sleeve of the Design Guide.

Fig 1.5: Extract of Key Phase 1 Design Guide Regulatory Plan (Please refer to full size A0 plan in inside sleeve of report)

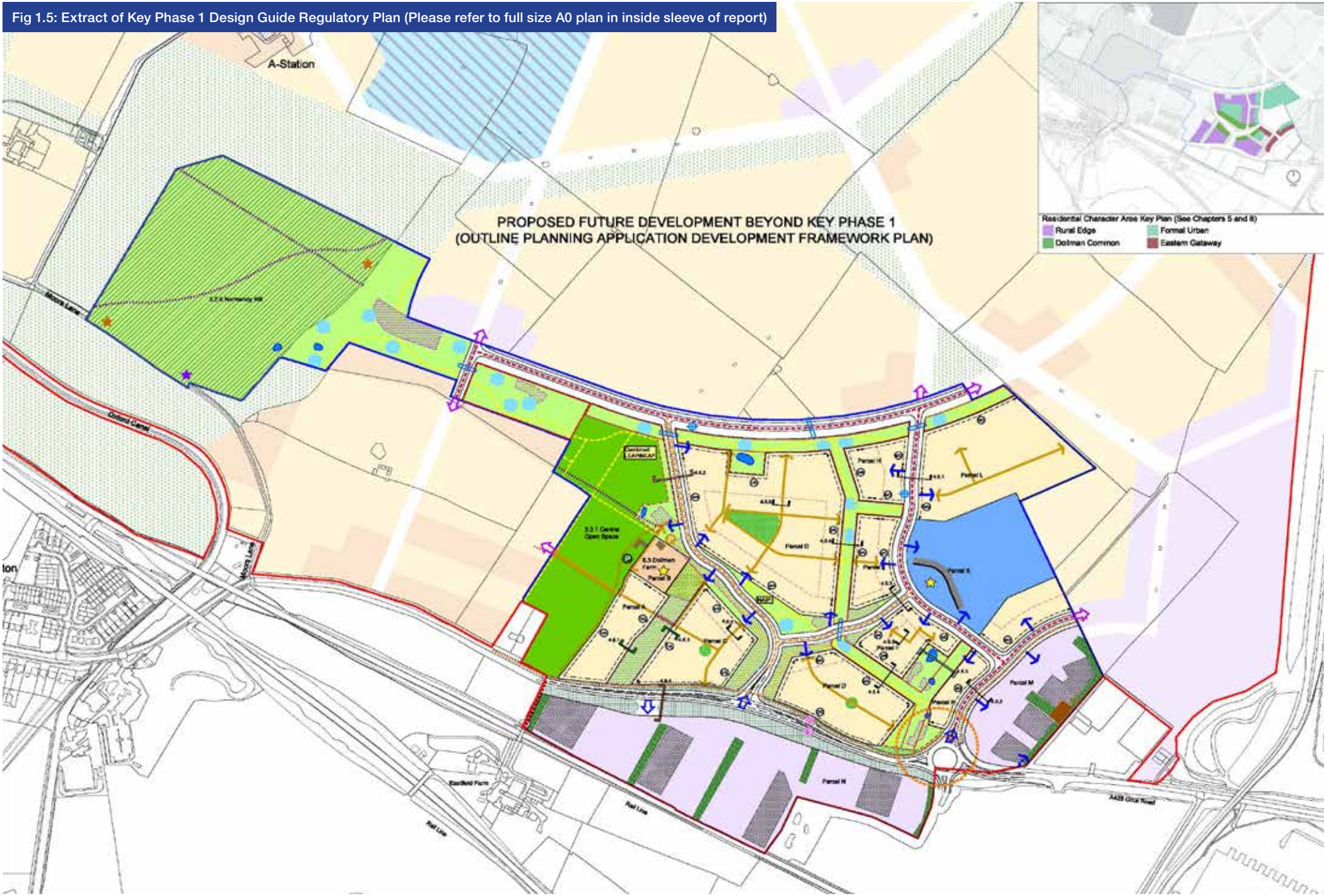
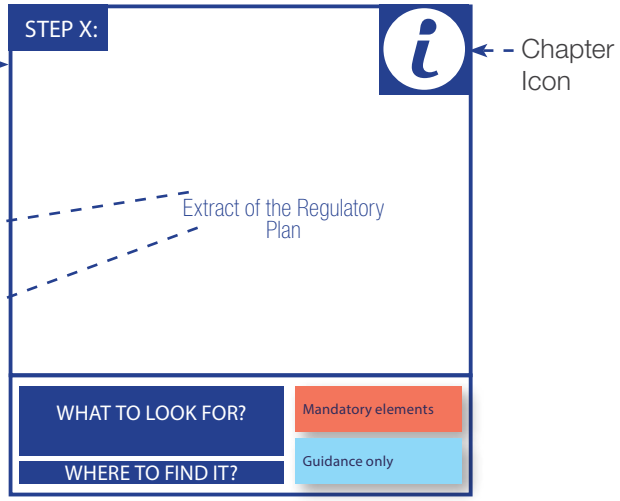
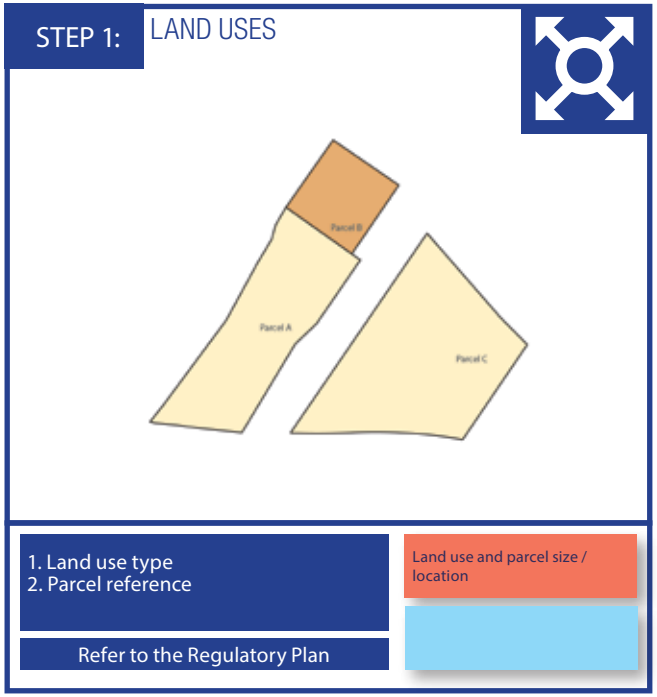


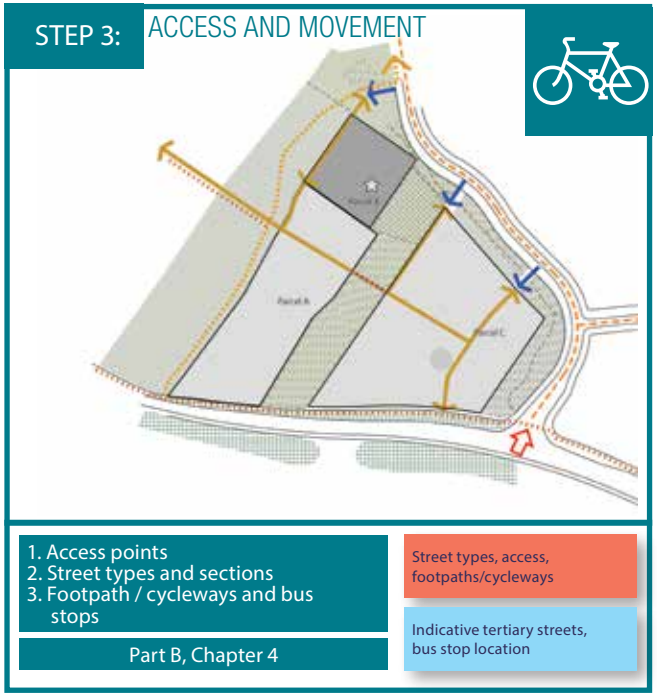
Fig 1.6: How to use the Regulatory Plan

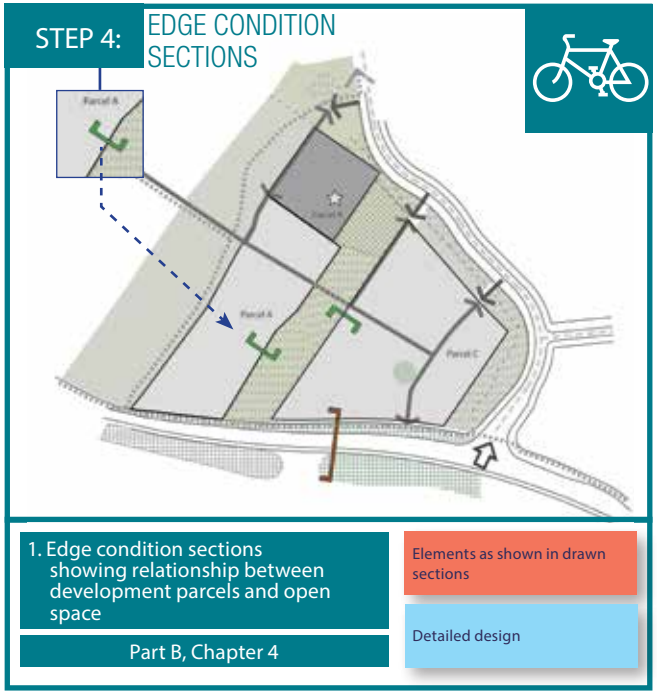
The Regulatory Plan sets out the overall development concept and establishes the key parameters and mandatory elements of the design of KP1 for specific parcels within that phase. The structure of the Guide follows the structure of the Regulatory Plan key; therefore the Regulatory Plan must be read in conjunction with the Design Guide.

This Figure provides a series of steps which explain the process through which individual development parcels are to be designed using the Regulatory Plan and the Design Guide. Each step is set out as follows:

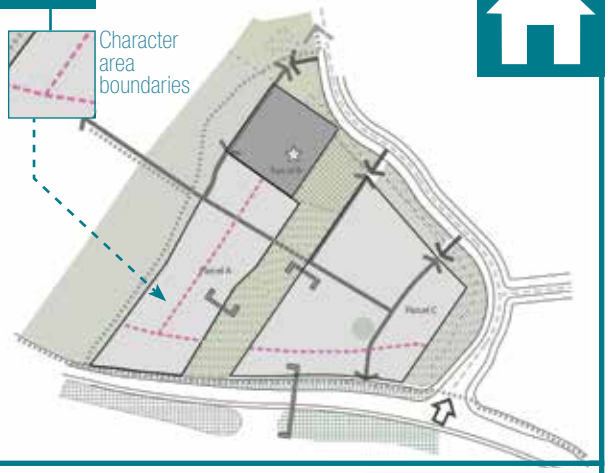








STEP 5: RESIDENTIAL CHARACTER



1. Character area boundaries, descriptions of character areas set out in detail in the Design Guide

Part B, Chapter 5

Location / description of character area

Detailed design

STEP 6: FRONTAGE TYPOLOGY

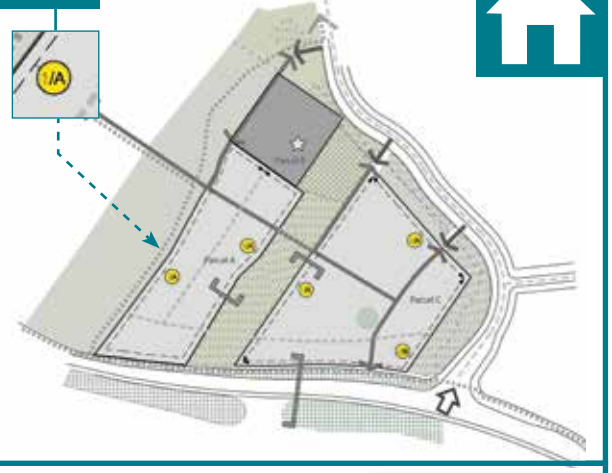
1. Circle labelling the edges of the residenital parcels. The number denotes the frontage type

Part B, Chapter 5

Frontage type character & plot layout rules

Development not fronting a parcel edge

STEP 7: TYPOLOGY MATRIX



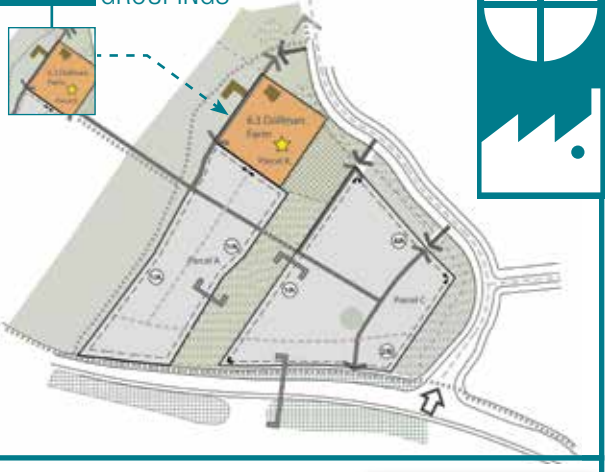
1. Land use type
2. Parcel reference

Part B, Chapter 5

Typology matrices & plot layout rules

Development not fronting a parcel edge

STEP 8: MIXED USE / COMMERCIAL GROUPINGS



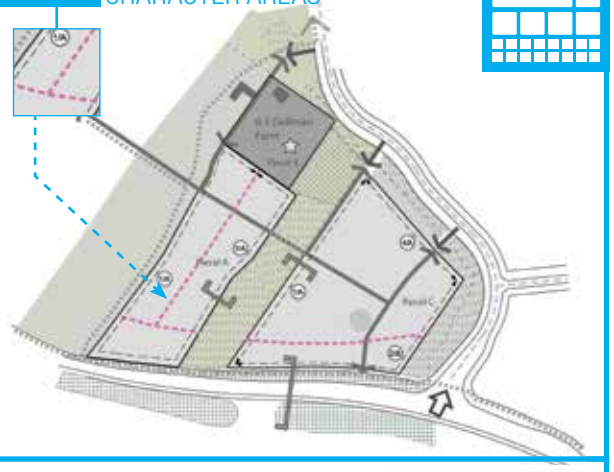
1. Location of mixed use and commercial groupings
2. Residential groupings for residential character

Part B, Chapter 6-7

Design principles

Detailed design

STEP 9: MATERIALS FOR CHARACTER AREAS



1. Character area boundaries, these relate to residential material palettes

Part C, Chapter 8

Materials palettes for each character area

Detailed design

STEP 10: TECHNICAL DETAILS E.G. PARKING

1. Character area boundaries, these relate to residential material palettes

Part D, Chapter 9

Set out in more detail in Technical sections

Detailed design

1.6 KP1 Context

All development proposals must have regard to what is outside of the KP1 area. Whilst this Design Guide has been prepared for the KP1 area it has been prepared with recognition to what is happening beyond the Key Phase boundary, both in terms of the existing context outside of the RRS site, and the longer term future development proposals. The Regulatory Plan provides the detail for KP1 and is a section of the wider site. Figure 1.7 illustrating an extract of the Regulatory Plan shows how it sits within the context of the OPA Development Framework Plan showing the land use proposals for adjacent areas.

The Regulatory Plan presents both existing context and future development context:

Existing context, (outside of the RRS site) including:

- Access connections including the A428 Crick Road, railway lines;
- Hillmorton, existing residential community; and
- Oxford Canal.

The existing context is illustrated in the oblique aerial photos presented in Figures 0.2 & 0.3, with key features annotated for reference and orientation

Future development context

The OPA Development Framework Parameter Plan illustrating the layout of proposed land uses and main access routes, beyond KP1, predominantly to the north. Specific considerations include:

- The continuation of the primary routes leading north towards the District Centre and Secondary School, aligned to create vistas towards the C Station;
- Local Centre mixed uses set around a public space to the north east of KP1, north of the Primary School;
- Residential land uses directly opposite the northern boundary of the Key Phase 1;
- Residential and mixed use/local centre to the west of the srea of formal open space; and
- Further areas of Informal Open Space (including further retained ridge & furrow) to the north and west of the area of retained ridge & furrow within Key Phase 1 (Normandy Hill).

Please refer to Chapter 2, Context, for further details regarding the existing development context and future development context.

This Design Guide provides guidance in respect of the KP1 part only of the SUE and potential for establishing areas of different character will be included in design guidance covering other Key Phases.

Fig 1.7: Regulatory Plan set in context of existing and future conditions

1.7 Design Guide Compliance Checklist

Reserved Matters planning applications must be accompanied by a completed Compliance Checklist showing how proposals accord with the Design Guide. Any substantive differences from the fixes within the Design Guide should be identified and justified.

The Compliance Checklist lists the mandatory elements from the Design Guide.

Refer to Appendix 1 for a full version of the compliance checklist, an illustrative extract is presented in Fig 1.8, right.

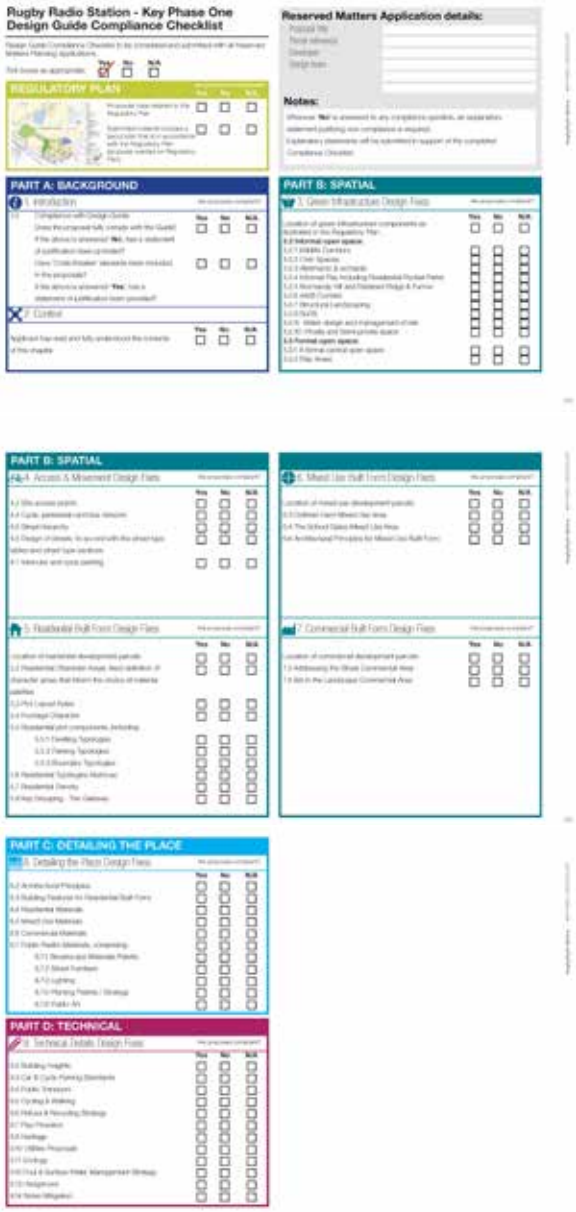
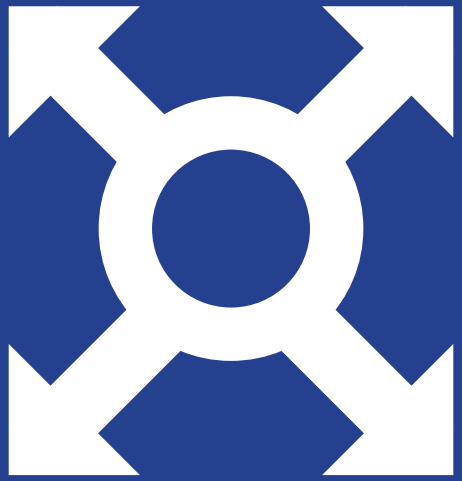


Fig. 1.8: Design Guide Compliance Checklist, extract.
See Appendix 1 for full version.

1.8 Design Guide review

In the future a review of the Design Guide may be required to reflect changing and unforeseen circumstances, including updates to national and local polices and the results of site and ground investigations. Any review would be undertaken by mutual agreement between the master developer and RBC.

Chapter 2
Context



2.1 Introduction, Location & Scope of KP1

To create a sense of identity and place, it is vital to understand and appreciate the context for the Design Guide and the KP1 area that it covers. Critically, this needs to reflect not just the existing surroundings of the area but also how the KP1 Design Guide fits within the wider vision and aspirations that have been established for the Rugby Radio Station site as a whole. This chapter of the Design Guide therefore considers the context in terms of the following:

EXISTING SITE CONTEXT:

2.2 Wider context;
2.3 Local context;
2.4 Existing KP1 site context, including:
2.5 Topography;
2.6 Landscape Features;
2.7 Access and Movement;
2.8 Built Form;
2.9 Overview

PLANNING CONTEXT:

2.10 Outline Planning Application (OPA)

Parameter Plans;
2.11 Development Framework Plan
2.12 Access and Movement;
2.13 Green Infrastructure;
2.14 Housing Density;
2.15 Building Heights;

2.16 Design and Access Statement Principles Compliance

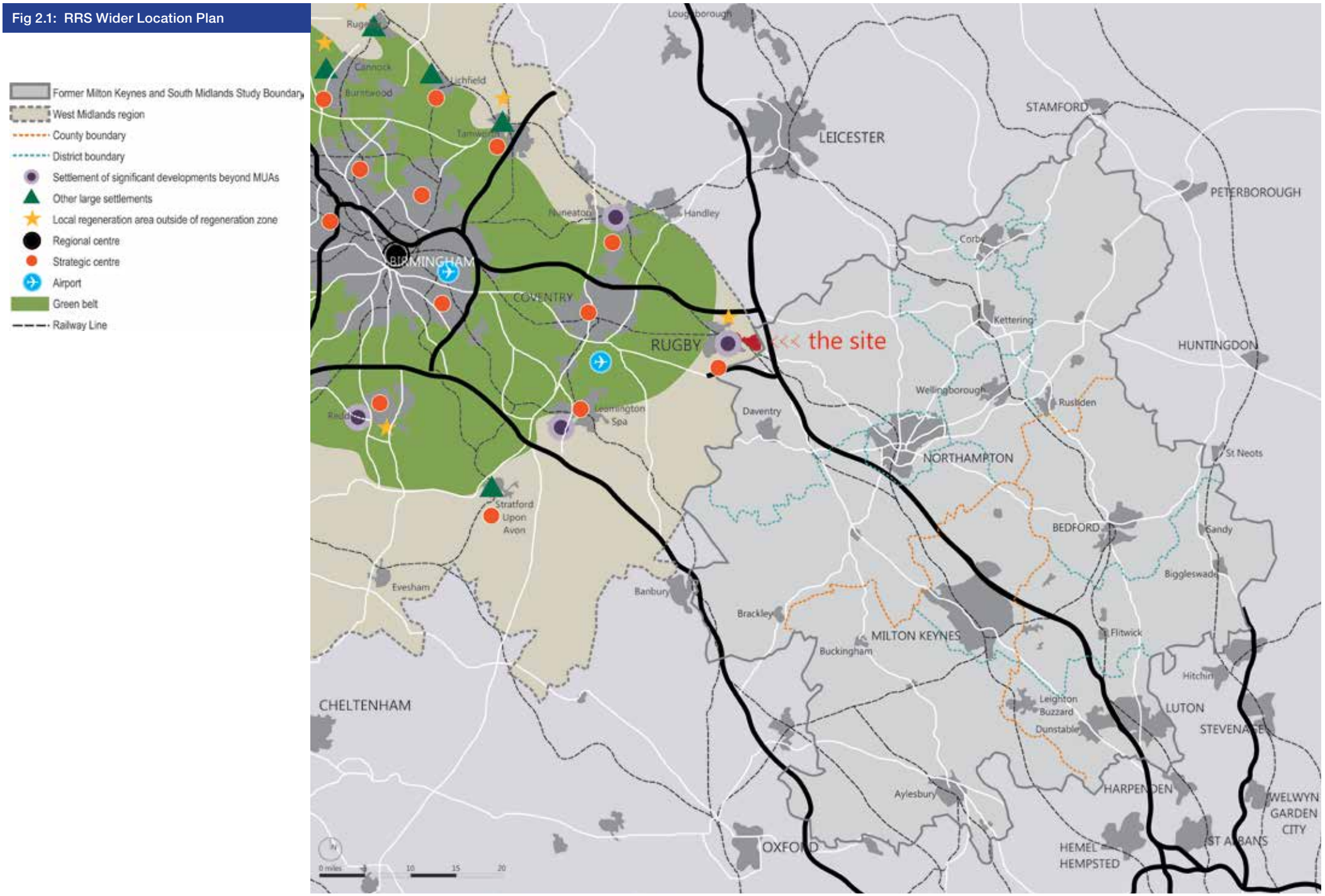
2.17 Environmental Statement Compliance

2.2 Wider Context

Rugby as shown on Fig 2.1, is uniquely positioned at the centre of England. The influence of the natural geographical characteristics of the area on Rugby's historic origins and subsequent development cannot be understated. Geological layering, local topography and river systems combined to create a defensible position and a natural crossing point of the continuous ridge of hills which stretch from the Cotswolds to Lincolnshire, now known as Watford Gap. Consequently, six lines of national communication, including the Roman Watling Street (A5), the Oxford Canal, the West Coast Main Line and the M1, have been driven through Watford Gap and as a result they run through or adjacent to Rugby, see figures 2.1 and 2.2. The confluence of these routes at a central location within England, with the addition of the M6 to the north of the town and M45 to the south, constitutes one of the most significant reasons for Rugby's steady growth and prosperity. From its early role as a staging post through to the success of Daventry International Rail Freight Terminal (DIRFT), the town's economic story continues to be intrinsically anchored to its central location.

This context is significant to the design of RRS and the composition of the development. In particular the relationship of the development with DIRFT, the adjacent railway lines and the A5, demand a master plan response which mediates between economic advantage and the creation of a high quality living environment.

Fig 2.1: RRS Wider Location Plan



2.3 Local Context

Figure 2.2 illustrates the position of Rugby Radio Station set in the local context of the town of Rugby to the west, and the strategic road connections of the M1 and A5 to the east.

Town context of Rugby

Rugby is host to significant achievements in education, engineering and technology. Early industrialisation, enhanced by the construction of the Coventry and Oxford Canals, began with the extraction of natural materials and led to sizeable employment at the cement works. Advancements in railway construction and manufacturing brought further influxes of skilled workers and a wave of house building. Diversification followed; the success of Rugby school led to growth in the professional and service sectors. Substantial success in electrical engineering and telecommunications, including Rugby Radio Station, made Rugby a noteworthy town. In the latter part of the Twentieth Century, Rugby's advantageous connection to the country's strategic highway network led to the successful growth in light industrial, office and commercial businesses and more recently logistics and distribution.

Rugby Radio Station

As the most enigmatic and powerful symbol of Rugby's technological status, the Radio Station was developed in the first half of the 20th Century in response to the Government's desire to establish a chain of wireless radio stations for communication across the British Commonwealth. The 920 acre site was purchased by the Post Office in 1923, representing considerable public sector investment in technology and in Rugby. The 12 main masts, located a quarter of a mile apart and forming an irregular octagon, became important landmarks for the town and the radio station, subsequently being clearly recognisable from the M1 and surrounding landscape. Less visible from the outside, but of great significance is the key building associated with transmission; C Station. The C Station lies within the site and is a listed building and is of substantial scale and height. Whilst all of the 12 masts have been removed, C Station remains and can be embedded in the new development, to continue the connection with the history of the site and its role in British history. A-Station is also of historic importance and will also be incorportated into the development.

Outline Planning Application Site

The Rugby Radio Station Outline Planning Application covers a site of 473.2 hectares (1,169 acres). KP1 has an area of approximately 52 hectares (128 acres), both are illustrated in Figure 2.2, opposite.

Rugby Radio station C Station, M1 to north

Oxford Canal

Rugby Town Centre

Fig 2.2: RRS Aerial Photograph with OPA and KP1 boundaries

2.4 Existing KP1 Site Context

KP1 is located within the southern part of the SUE as illustrated in the aerial photography in Figures 2.3, 2.4 and 2.5. KP1 is bounded by the area of ridge and furrow to be retained to the west, proposed primary road network to the north, primary school campus to the north east, existing Panther Logistics buildings to the south east and the A428 to the south (with a dedicated employment parcel falling to the south of the A428). Moors Lane is to the west of KP1, providing access to the existing residential property and a connection under the railway to Hillmorton to the west.

The site is currently vacant and utilised as managed pasture with the exception of the farm buildings at Dollman Farm and the adjacent orchard. Two semi detached residential properties front the A428 west of Dollman Farm but are excluded from the broader site and KP1 boundaries. Existing field boundaries within the site are predominantly delineated by hedgerows, some of which are identified as important and worthy of retention. The site also contains some small ponds which are known to provide habitat for great crested newts.

The site's immediate context is provided by the A428 and increasing logistics facilities at Daventry International Rail Freight Terminal (DIRFT I and II). The significant presence of the large industrial buildings at DIRFT dominate the eastern entrance to Rugby by rail and road (from the M1 and A5). Recent development includes the Tesco distribution centre to the south east and the emerging Sainsbury's building to the east of the SUE boundary. This latest phase of DIRFT (II) is currently under construction and includes the creation of a raised embankment that provides rail access to the Sainsburys site. A new rail bridge crossing the A428 will create a new landmark on the Crick Road, marking the road entrance to the KP1 from the east. Further development of DIRFT is proposed with DIRFT III to the north east of the Rugby Radio station site, between the A5 and M1.

Facing north to Normandy Hill from A428 Crick Road

Facing north from A428 Crick Road

Oxford Canal and Moors Lane wth Normandy Hill to the north

Dollman Farm

Track leading to Dollman Farm with adjacent orchard

View east across KP1 toward DIRFT I

Fig 2.3: KP1 Site Context Aerial Photography

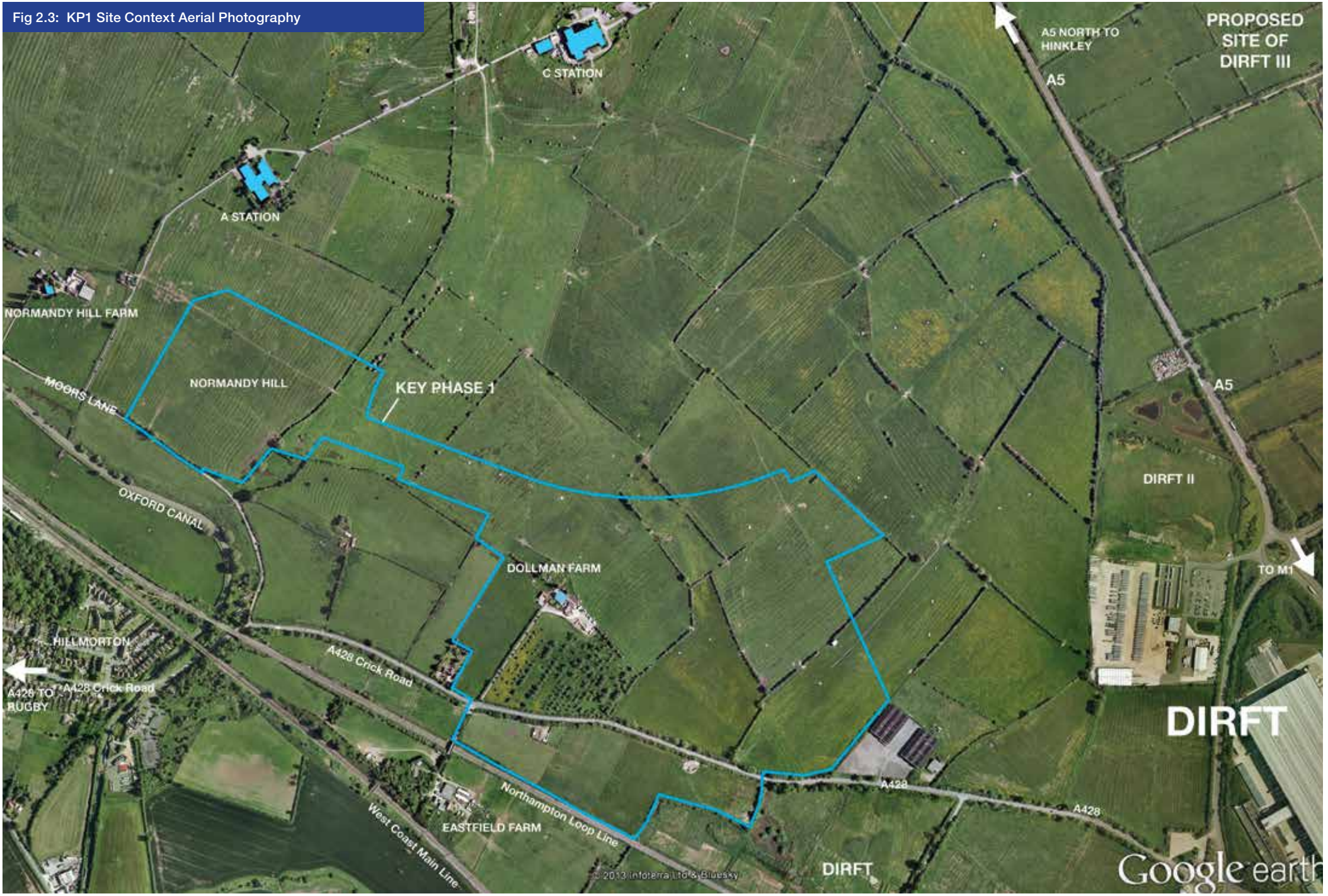


Fig 2.4: KP1 view facing north east

Fig 2.5: KP1 view facing north west

2.5 Existing KP1 Site Context: Topography

Local topography is illustrated in Figure 2.6, notable for the lowest ground to the north of KP1, with the land falling toward Clifton Brook to the north of the OPA site. Levels within KP1 are illustrated in Figure 2.7, notable features include those listed below.

Normandy Hill is a prominent local geographical feature, that rises up steeply northward from Oxford Canal to create an area of significant high ground in the north west corner of KP1. This area of ridge and furrow earth works is a high point that affords wide views eastward across KP1 and north towards C-Station at the heart of the Radio Station site, and beyond to the A5 and M1.

To the east of Normandy Hill the rest of the KP1 site has more gently rolling topography, marked on the ground by the presence of further areas of ridge and furrow earthworks, hedgerows and occasional ponds – as illustrated in related figures presenting heritage and landscape features later in this chapter.

The visual prominence of the listed C Station is an important feature of the site. Distance views of the C Station can be glimpsed from the A428 Crick Road, moving northward into the site the sightlines improve with clearer views north to the C Station and the wider Radio Station. On the northern edge of KP1 wide vistas open out facing north towards the C Station building that provides an important landmark building to terminate views, as illustrated by alignment of routes and vistas set in the OPA Parameter Plans.

Normandy Hill facing east

Normandy Hill facing towards canal

More level ground north of orchard

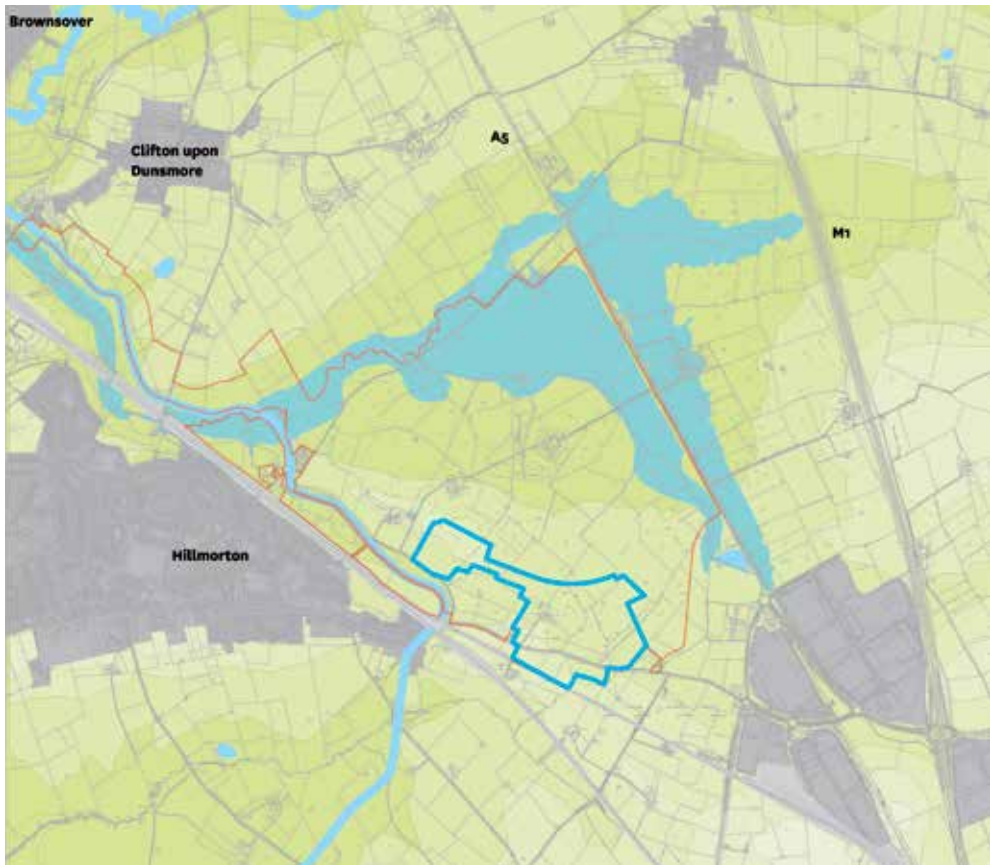
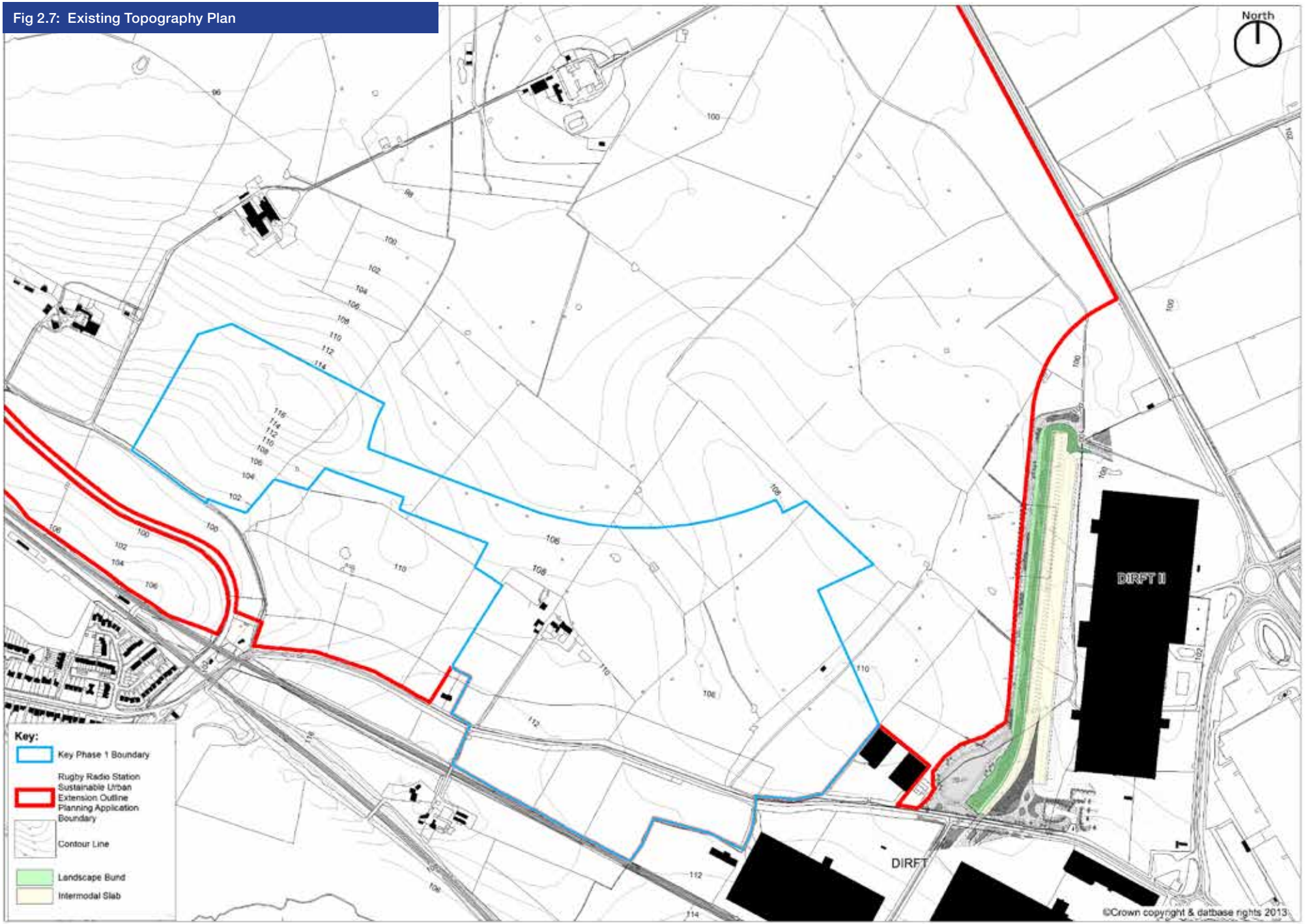


Fig 2.6: KP1 set within broader site topographic context of Outline Planning Application

Fig 2.7: Existing Topography Plan



2.6 Existing KP1 Site Context: Landscape Features

Existing landscape features within the KP1 site include features listed below and illustrated on the Figure 2.9:

- The predominant ground cover is rough grass cover that has been used for grazing.
- **Ridge and furrow** earthworks are a notable feature of the site. The extent of existing ridge and furrow is illustrated in the Heritage part of Chapter 9 (see 9.8 Heritage). The figure opposite illustrates the area of ridge and furrow that is to be retained as a central landscape feature as set in the Outline Planning Application Parameter Plans. The area of retained ridge and furrow is located on Normandy Hill.
- **Hedgerows** of varying degrees of quality exist within KP1. Further details of the KP1 strategy for hedgerows are provided in 9.13 Hedgerows, in Chapter 9, Technical Details. This includes identification of existing hedgerows, hedgerows to be retained and hedgerows to be removed.
- A number of **trees** are present with in the KP1 site, mainly adjacent to hedgerows. Where possible these trees will be retained. An orchard is located south of Dollman Farm, extending to the edge of the A428.
- **Ponds** are a feature of KP1. Ponds are illustrated on the figure opposite. Existing ponds to be retained are identified on the Regulatory Plan and these features have been key considerations in the creation of the green infrastructure framework for the development proposals. Further details regarding the ponds and associated ecological considerations are provided in Chapter 9, Technical Details under 9.11 Ecology – *existing conditions and proposed mitigation.*

Hedgerows and trees

Open grassland with hedgerows

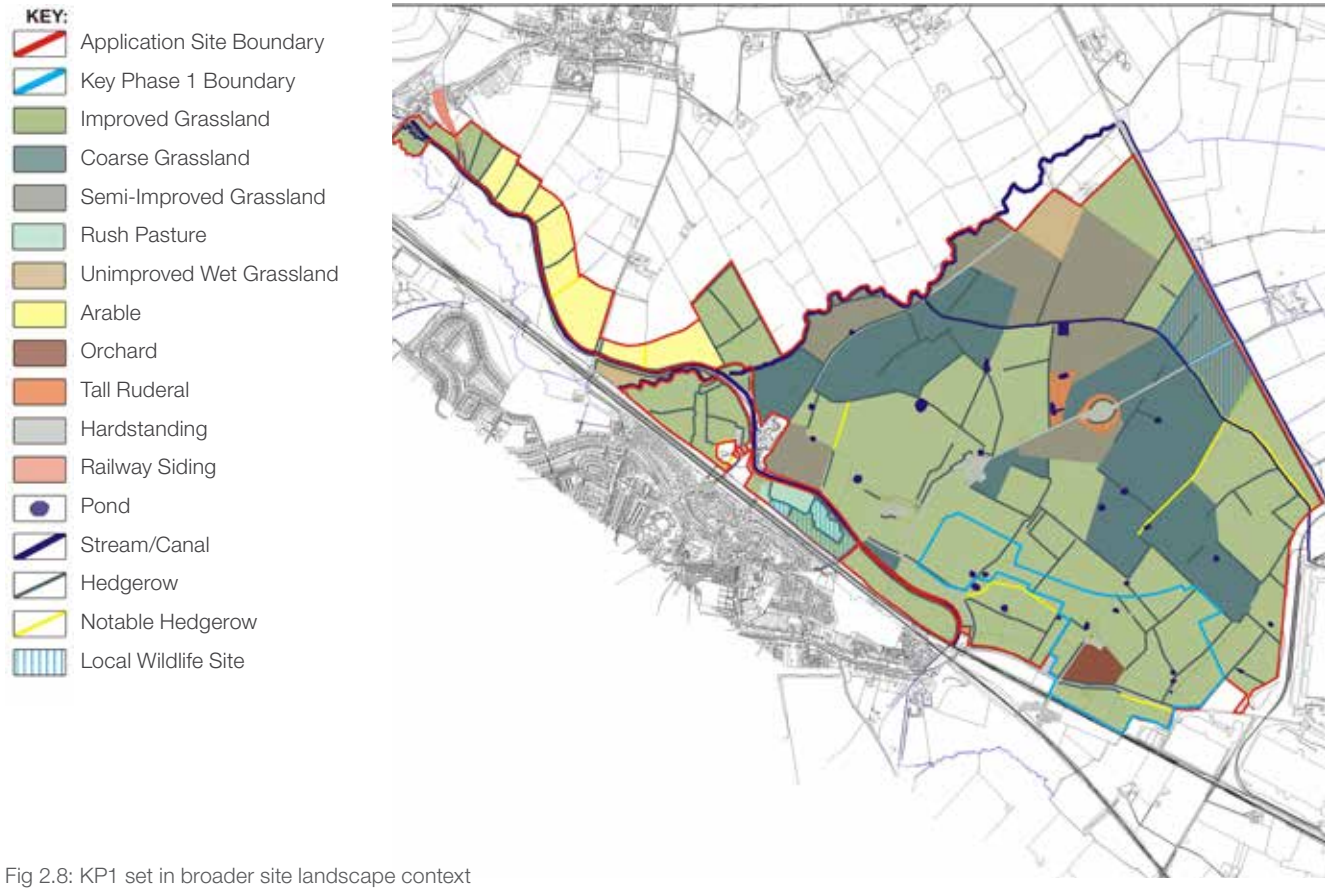
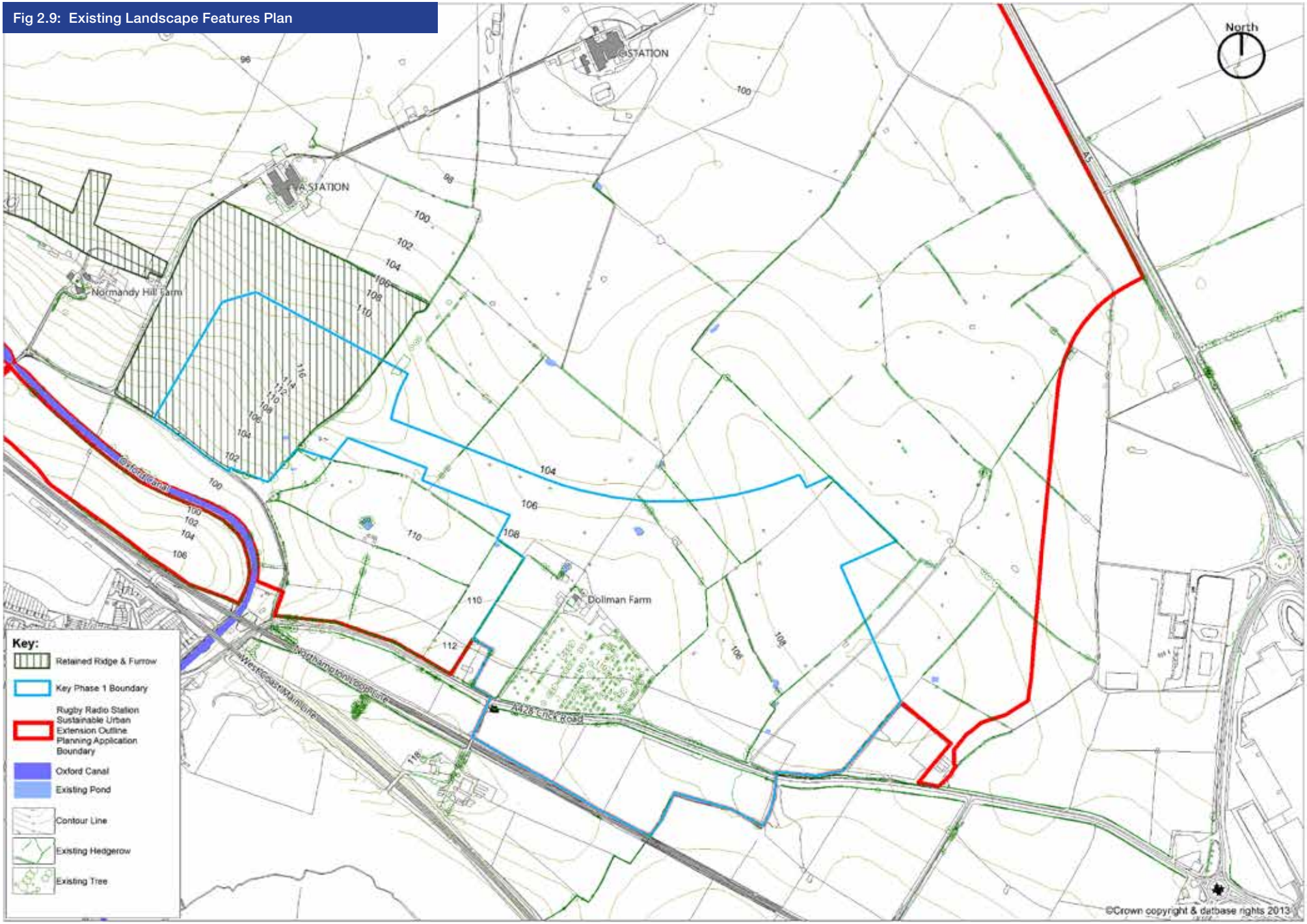


Fig 2.8: KP1 set in broader site landscape context

Fig 2.9: Existing Landscape Features Plan



2.7 Existing KP1 Site Context: Access and Movement

Existing access and movement considerations for KP1 and the local context include features listed below and illustrated on the Figure 2.10:

- The **A428 Crick Road** defines the southern edge of KP1. This historic route is the connection between the wider strategic road network including the M1 A5 to the east, onward to Rugby town centre to the west, via established communities on the current eastern edge of Rugby's residential fringe including Hillmorton.

- The current **points of access** to the KP1 site include a rough track access to Dollman Farm from the A428. To the south of the A428 a point of access is provided to Eastfield Farm, a route that rises to cross the rail line. West of KP1 is a point of access to the wider Radio Station Site. This route leads north to the A Station building, and onward in a north east direction to the listed C Station building in the centre of the Radio Station site.

- **Cycling** is an important consideration with a flow of cyclist trips along the A428 between Rugby and DIRFT. There are currently no dedicated cycle paths.

- **Railway** lines are a defining feature south of KP1, with the rail line running east from Rugby station splitting into two routes – the northern most Northampton Loop Line and the West Coast Main Line south of this.

Photos: See numbered locations on Fig 2.10, opposite.

1. A428 facing north east

2. Moors Lane junction with A428

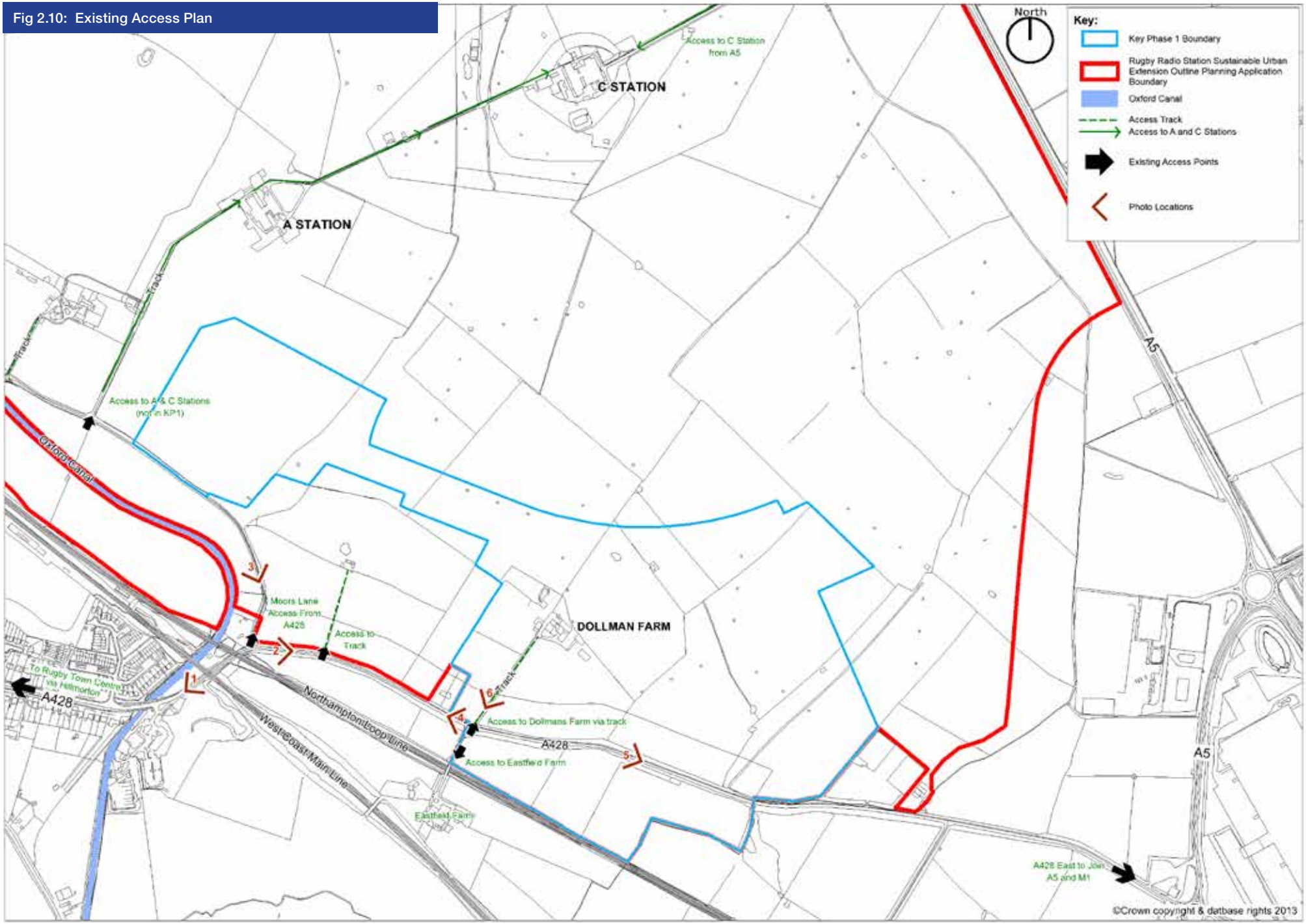
3. Moors Lane facing north west

4. A428 facing east

5. A428 facing west

6. Track access to Dollman Farm, viewed from A428 point of access

Fig 2.10: Existing Access Plan



2.8 Existing KP1 Site Context: Built Form

Existing built form considerations for KP1 include features listed below and illustrated on Figure 2.11 opposite:

- **Dollman Farm** - a range of farm buildings including the farmhouse. The farmhouse and an associated L-shaped barn (west of the farm house, adjacent the track) are red-brick buildings that have the potential for conversion and reuse. Farms located close to, but outside of KP1, include Normandy Farm, Normandy Hill Farm to the west of KP1 and Eastfield Farm to south of KP1, (all shown in Fig 2.11).

- **Masts and concrete anchors** currently remain within KP1. These structures were associated with the Radio Station, but are now redundant and in varying states of repair. See 9.8 Heritage for details on the KP1 approach to masts, anchors and Dollman Farm.

- Former Radio Station buildings include the listed **C Station** building, a prominent landmark visible from KP1, located to the north, and **A Station**, is located north west of KP1.

- Existing residential property include a pair of semi-detached properties on the north side of A428.

- **Daventry International Rail Freight Terminal (DIRFT)** to the east of KP1, including next phases – DIRFT II currently under construction, including new rail bridge and rail embankment that will create an important landmark enroute into Rugby from the east.

- Panther logistics occupy industrial unit buildings immediatly to the east of KP1, on Crick Road before DIRFT.

C Station

A Station

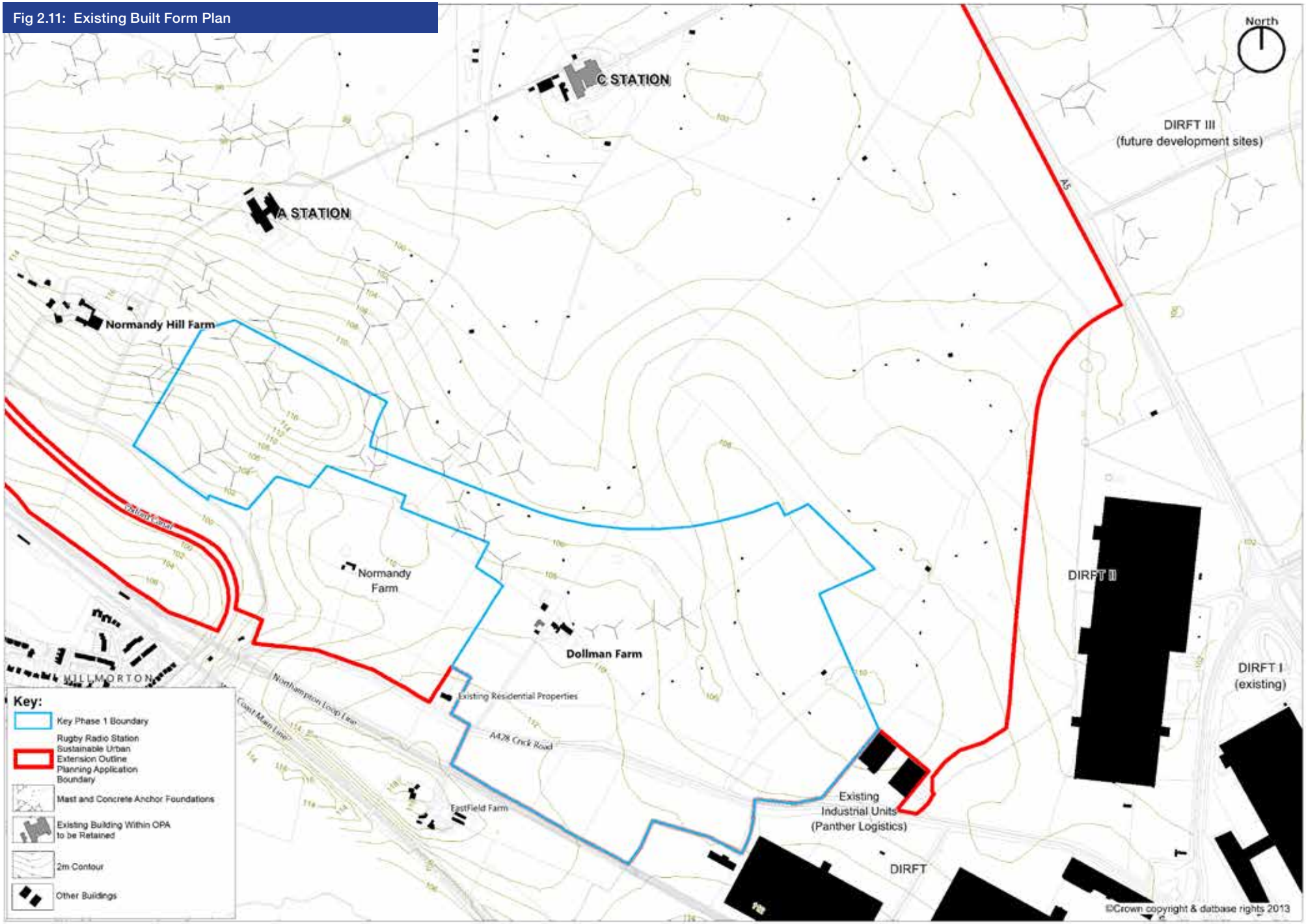
Mast concrete anchors + cables

Dollman Farm - farmhouse

DIRFT as existing, A5, M1 facing west

DIRFT II site under construction facing west to KP1

Fig 2.11: Existing Built Form Plan



2.9 Existing KP1 Site Features Overview

Existing KP1 site features are listed below and illustrated on Figure 2.12 and 2.13:

Topography:

- Normandy Hill, prominent landscape feature with area of ridge & furrow earth work to be retained, excellent views beyond from this high ground.
- Gently rolling fields within central and eastern areas of KP1.

Landscape:

- Trees & Hedgerows – potential to retain some within landscape framework, others may be removed.
- Ponds to be retained and integrated within network of green infrastructure retaining important ecological assets.
- Potential to retain an area of the existing orchard.

Heritage:

- Area of ridge & furrow to be retained on Normandy Hill.
- Potential to retain some mast concrete anchors within wildlife corridors.
- See Chapter 9, 9.8 Heritage for further details.

Access:

- A428 Crick Road is the main road adjacent KP1 from which points of vehicular access will enter the site.
- Lack of provision of cycle routes currently – to be addressed in KP1 proposals.

Built Form:

- Dollman Farm includes buildings of some architectural interest including the farm house and L-shaped red brick barn which have conversion potential as part of KP1 proposals.
- The significant scale of development at DIRFT is a notable consideration to the east of KP1, but the rail embankment under construction as part of the DIRFT II development will provide some screening.

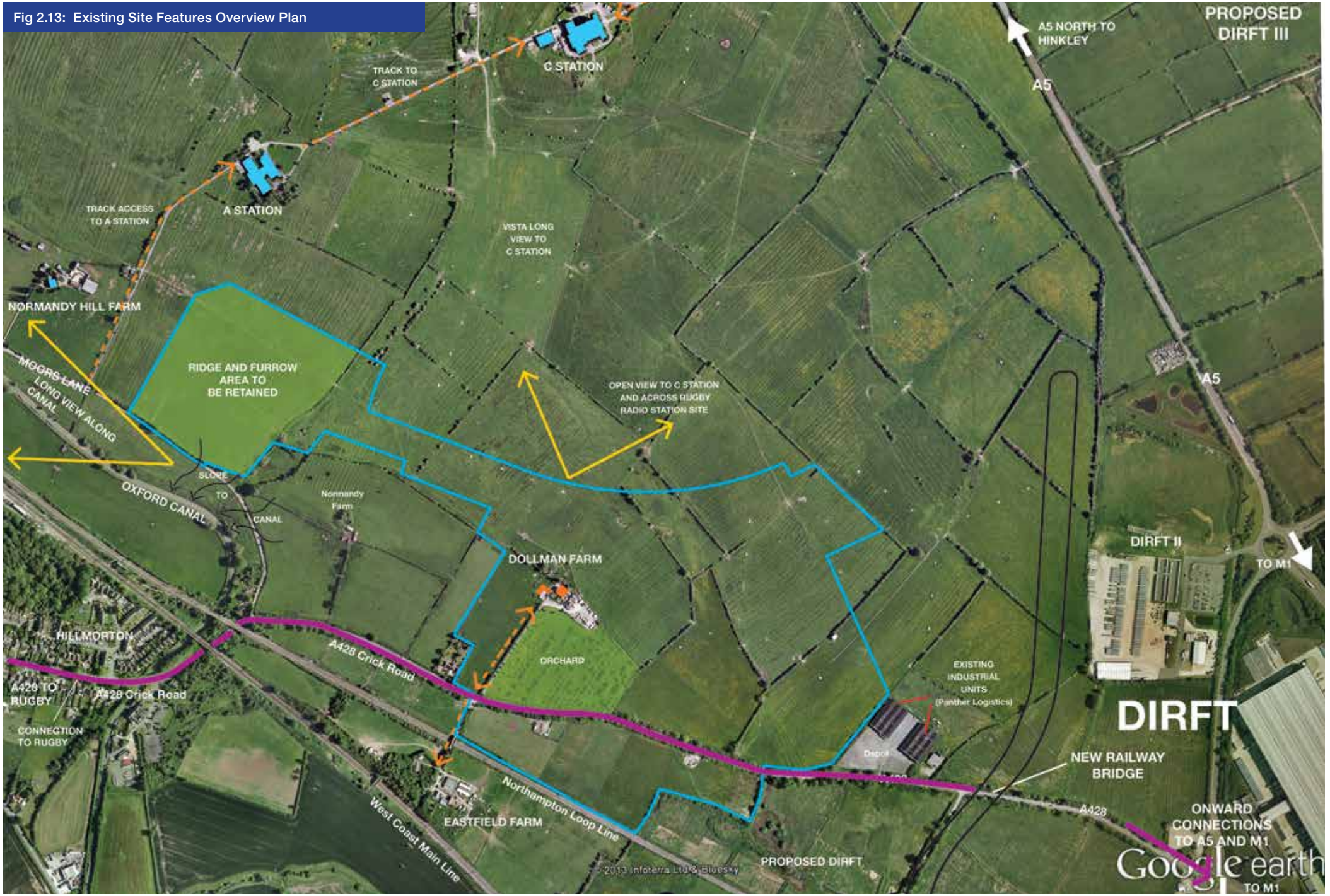
Views and vistas:

- Important views from and through KP1 include:
- Views north to the Listed C Station Building;
- Views north west along the corridor of the Oxford Canal;
- Views in all directions from the high ground of Normandy Hill.

Fig 2.12: View of RRS OPA and KP1 facing north west, viewed from DIRFT

NOTE: Aerial photograph date c. 2013 - construction of DIRFT II buildings and embankment have progressed.

Fig 2.13: Existing Site Features Overview Plan



2.10 Planning Context: Outline Planning Application

Outline Planning Permission was issued for the Rugby Radio Station Sustainable Urban Extension (SUE) (see Fig 2.14) in May 2014 by Rugby Borough Council. The outline planning permission approved the broad quantum and disposition of land uses for the site. Condition 5 of the outline permission identifies all of the formally approved plans and documents including the Parameter Plans, the Development Specification and the design principles contained within the Design and Access Statement. Together these provide the development framework for the site. Under Condition 5, the development must be substantially in accordance with this framework.

This Development Framework, which has been subject to Environmental Assessment, establishes the key design principles and mitigation measures with which KP1 must be consistent and seek to incorporate as part of its detailed design. Future context considerations for KP1, are set out in the pages that follow; as below:

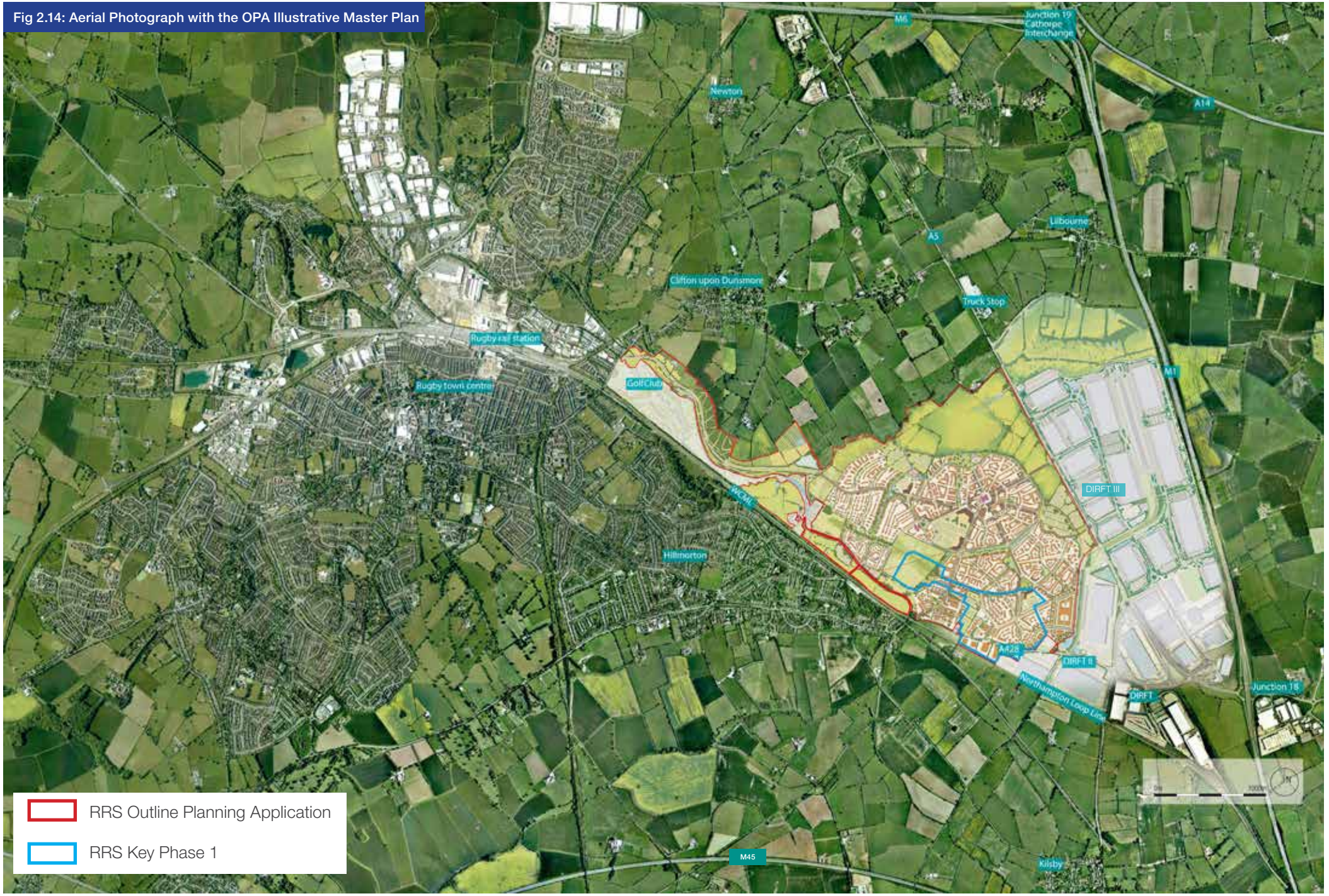
- The Rugby Radio Station Outline Planning Application, permission issued in May 2014, reference number R11/0699.

- **Parameter Plans** that establish the framework for the approved outline planning application. Parameter Plans include:
    - Development Framework Plan Parameter Plan
    - Access and Movement Parameter Plan
    - Green Infrastructure Parameter Plan
    - Housing Density Parameter Plan
    - Building Heights Parameter Plan

- **Design principles as established in the Design & Access Statement** (Rugby Radio Station Outline Planning Application);

- Environmental Statement (Rugby Radio Station Outline Planning Application) – **compliance with the Environmental Statement**.

Fig 2.14: Aerial Photograph with the OPA Illustrative Master Plan



2.11 Outline Planning Application Context: Development Framework Plan (DFP), Parameter Plan

The Development Framework Plan (DFP) sets a framework for future development land uses within the Rugby Radio Station site. An inset plan of the OPA DFP is presentated in Figure 2.15. Within KP1 (see Fig 2.16) these land uses include:

Residential

Up to 600 dwellings can be accommodated within KP1, distributed within residential and mixed use areas. The development framework is sufficiently flexible to accommodate a range of dwelling types, see Residential Built Form Chapter.

Primary School

A primary school will be delivered within the eastern quadrant of the KP1 site. The school will be an important element of KP1, serving the educational needs of the initial population and establishing a hub for community interaction early on in the development. The school will be designed in a modular fashion to allow for expansion for additional forms of entry, once a need for them is established in later phases of development.

Mixed Use

Parcels for mixed use development are included within KP1, including mixed use located to the east of the central formal open space area, centred on Dollman Farm and as part of the local centre adjacent to the school. The majority of the local centre near the school falls within a later phase. The mixed use parcels may include a range of land uses, see chapter 6, Mixed Use Built Form.

Employment

Dedicated employment parcels are located within KP1 to the south of the A428, and situated on the south eastern edge of the site, adjacent to the existing Panther Logistics operation.

Fig 2.15: OPA DFP Parameter Plan with OPA and KP1 Boundaries

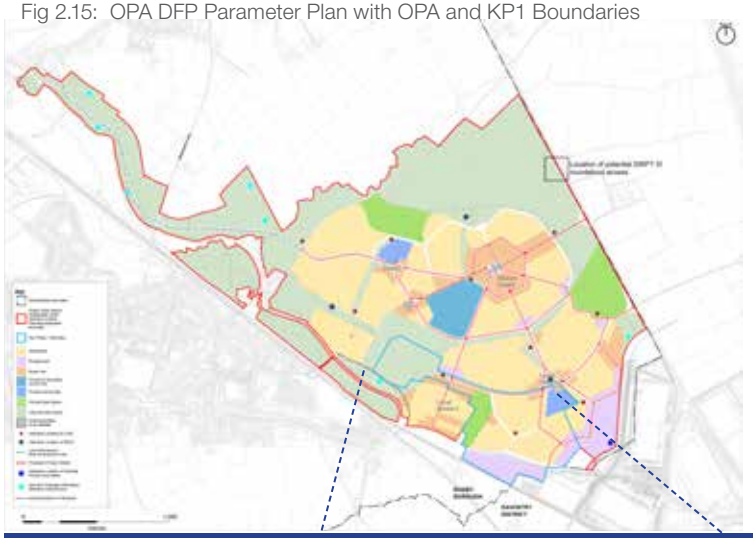


Fig 2.16: KP1 area context: OPA DFP Parameter Plan with OPA and KP1 Boundaries

2.12 Outline Planning Application Context: Access and Movement Parameter Plan

The extent of KP1 is illustrated in the context of the Access and Movement Parameter Plan in Figures 2.17 and 2.18.

KP1 will be accessed via a new junction off the A428. This roundabout junction on the A428 will provide access leading north into the core area of KP1 with connection to development areas via a primary street that leads north to the local centre and primary school. A junction is also planned to connect directly from the A428 to the dedicated employment parcel to south of the A428.

The principal gateway into KP1 will eventually connect, via a primary street, to the C Station and District Centre and onward to the Link Road towards Butlers Leap.

Internal vehicular movements within KP1 will be accommodated via a network of primary streets providing radial connections from the A428 to the centre of the development, secondary streets connecting primary routes and tertiary streets to access individual parcels.

A further network of cycleways and footways is also proposed, providing much needed connections through to the employment areas at DIRFT to provide its workforce with safe routes to work.

The parameter plan identifies strategic footpath connections to areas of formal and informal open space, including Normandy Hill.

Fig 2.17: Access and Movement Parameter Plan with OPA and KP1 Boundaries

Fig 2.18: KP1 area context: Access and Movement Parameter Plan with OPA and KP1 Boundaries

2.13 Outline Planning Application Context: Green Infrastructure Parameter Plan

The Green Infrastructure parameter plan (with OPA and KP1 boundaries for context) is illustrated in Fig 2.19 and 2.20.

KP1 accommodates a range of green infrastructure components identified on the Parameter Plan, including:

- Wildlife corridors: noted by the large dotted line arrows on the Parameter Plan these corridors sweep across the site creating an interconnected network of wildlife corridors. There are two scales of wildlife corridor: 60m and 20m wide corridors.
- A central area of formal open space annotated as OSF03 on the parameter plan. This important space acts as a link between wildlife corridors as part of the comprehensive green network of infrastructure. This area is intended to accommodate sports pitches, well located for the residents of KP1.
- Smaller blocks of informal open space to be distributed throughout KP1.
- A significant area of retained ridge & furrow on Normandy Hill.
- Areas of proposed woodland include blocks of woodland adjacent to area of retained ridge & furrow on Normandy Hill and smaller lines of proposed woodland on the southern and eastern edges of KP1, framing elements of the commercial employment areas.
- Open space associated with the primary school including playing fields.

Fig 2.19: OPA Green infrastructure Parameter Plan with OPA and KP1 Boundaries

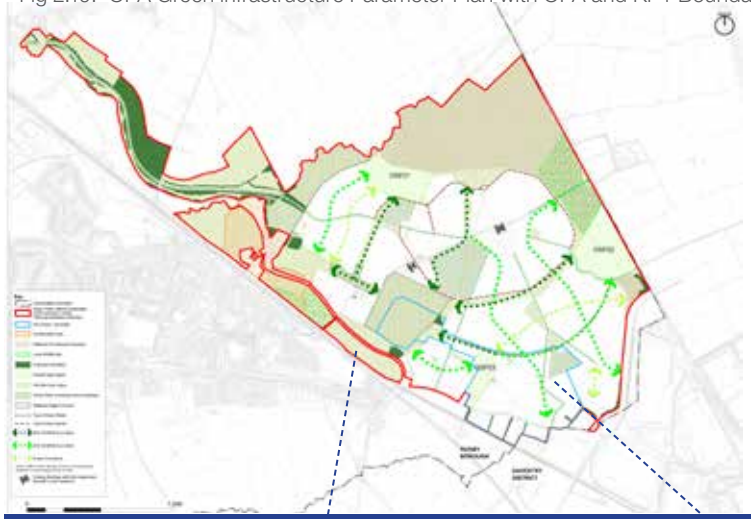
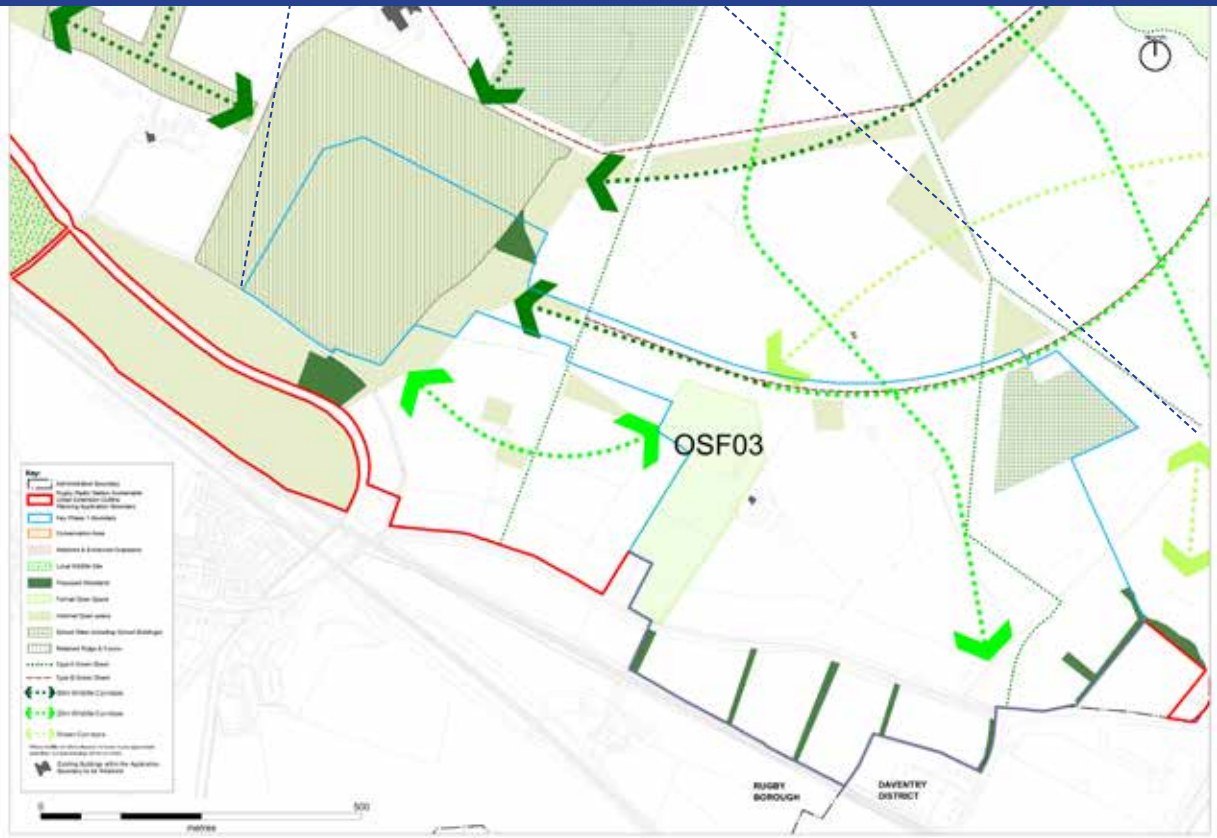


Fig 2.20: KP1 area context: Green infrastructure Plan Parameter Plan with OPA and KP1 Boundaries



2.14 Outline Planning Application Context: Housing Density Parameter Plan

The outline planning application parameter plans include housing density, as illustrated in Figures 2.21 and 2.22. These considerations are illustrated on the adjacent plans extracts and key considerations include:

- Opportunity to integrate a range of residential densities across the site;
- Areas of higher density associated with areas of mixed use development, including aspects facing towards local centres;
- This Parameter Plan and others also identify Dollman Farm (farmhouse) as a building to be retained.

Fig 2.21: OPA Housing Density Parameter Plan with OPA and KP1 Boundaries

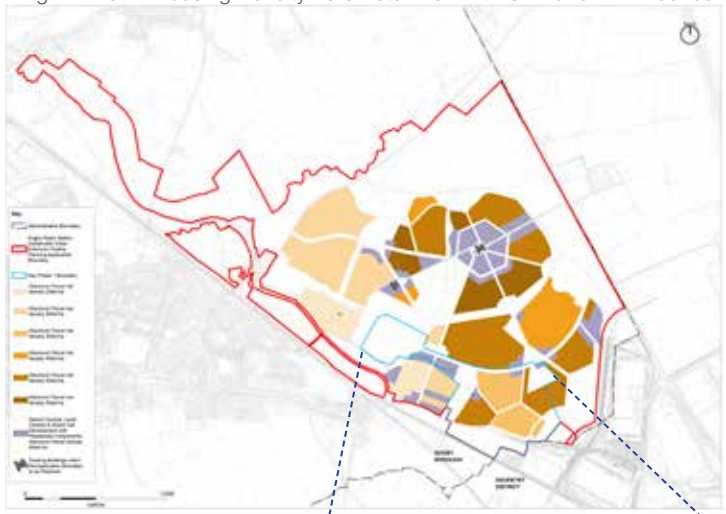
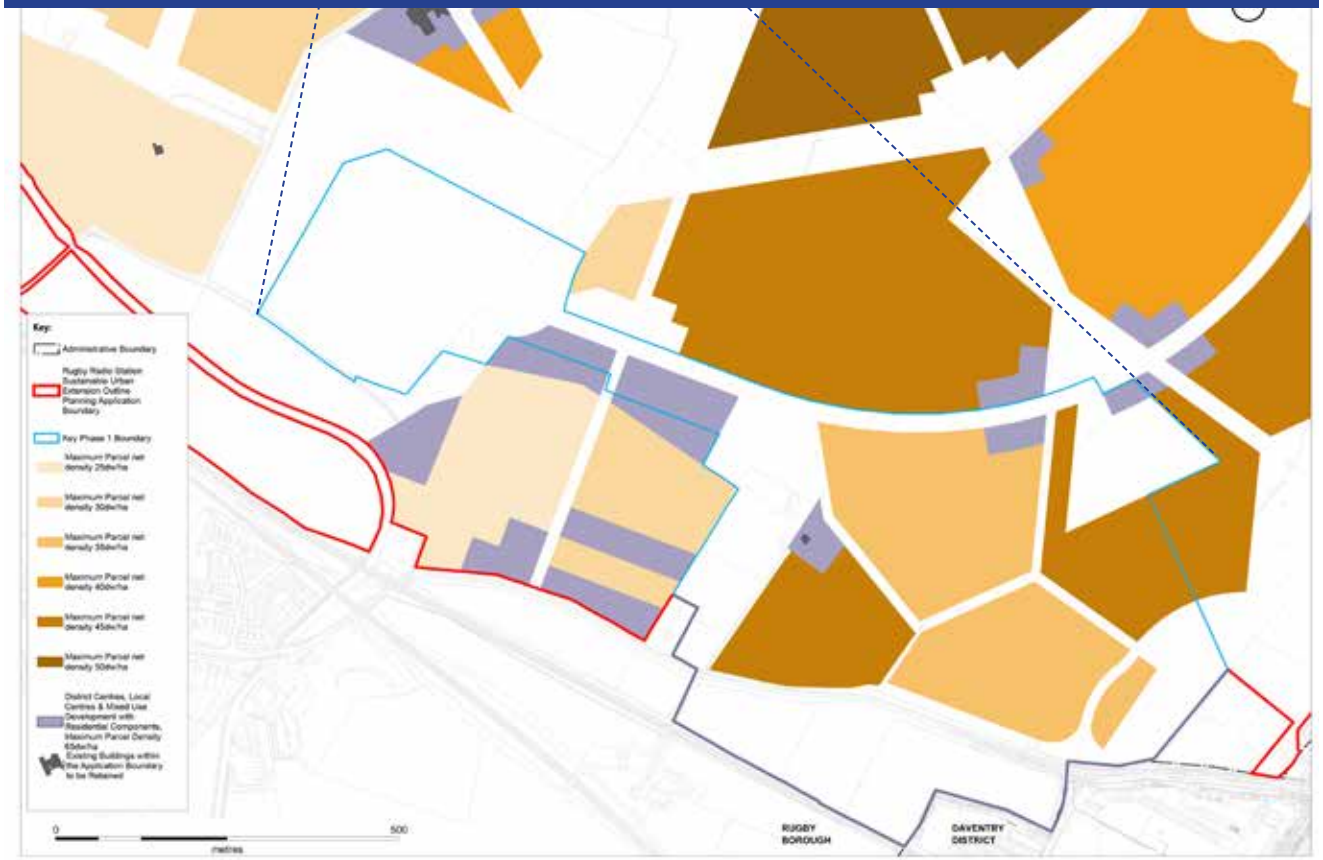


Fig 2.22: KP1 area context: Housing Density Plan Parameter Plan with OPA and KP1 Boundaries



2.15 Outline Planning Application Context: Building Heights Parameter Plan

Extracts of the building heights parameter plan are presented opposite in Figures 2.23 and 2.24, considerations include:

- Buildings heights within KP1 are predominately to be up to a maximum of 12m;
- Some opportunities for building heights of up to 15m;
- The limits for building heights are based upon:
  - measurements above existing ground;
  - all heights are specified to ridge level;
  - but exclude any point features, e.g. spires.

Fig 2.23: OPA Building Heights Parameter Plan with OPA and KP1 Boundaries

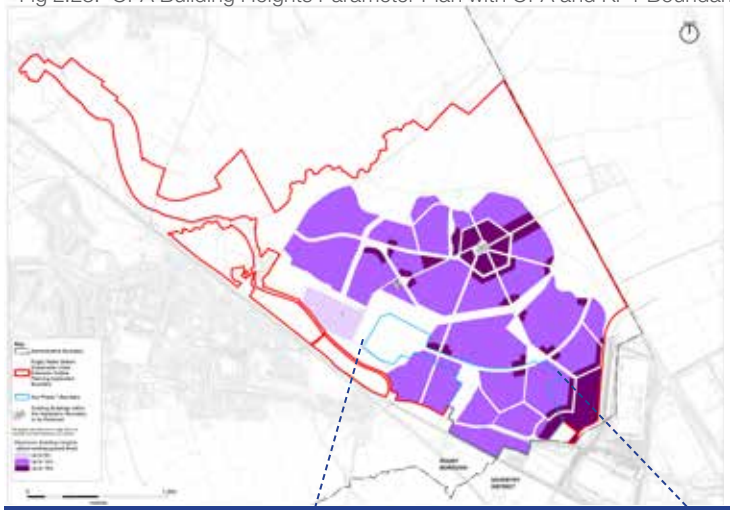
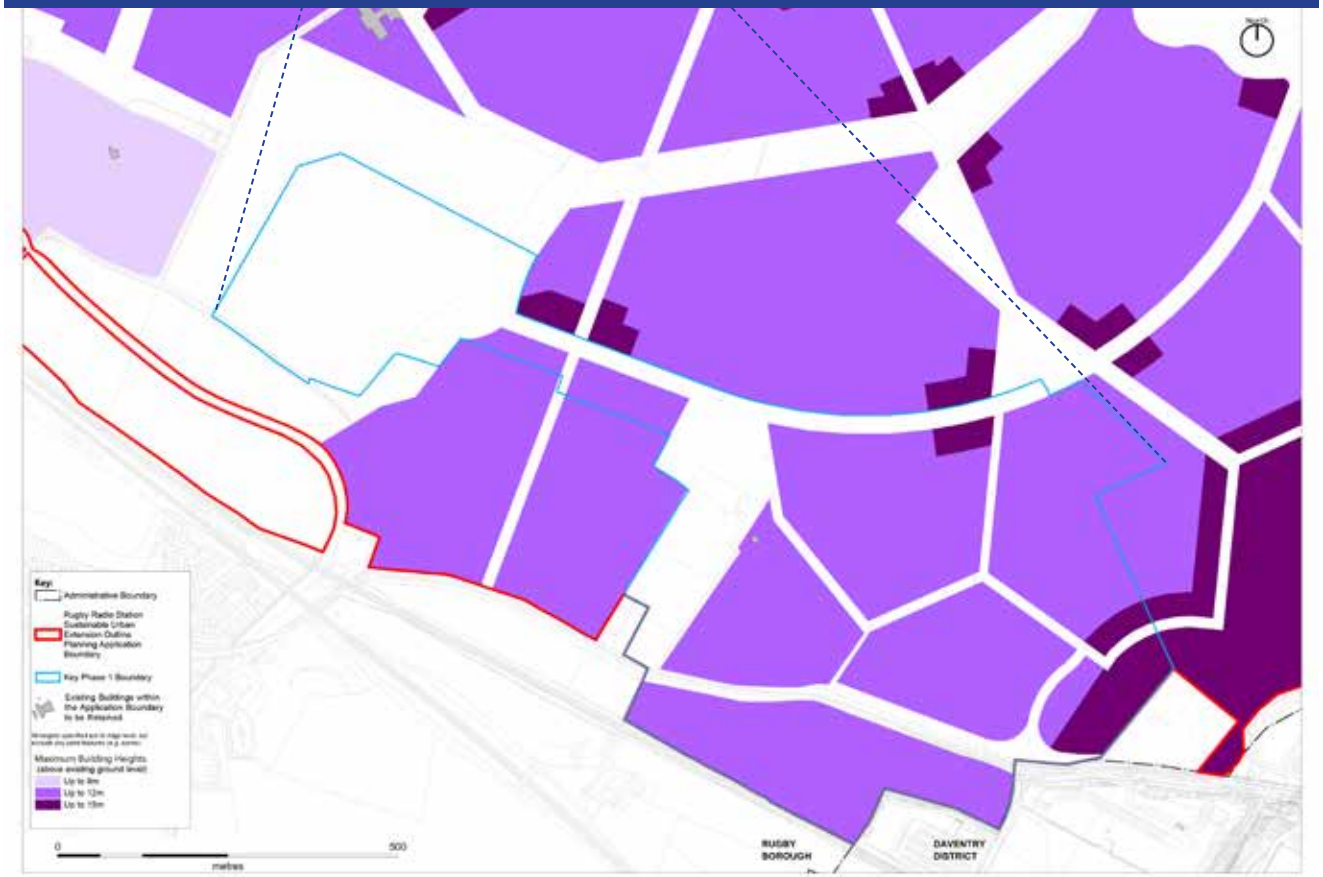


Fig 2.24: KP1 area context: Building Heights Parameter Plan with OPA and KP1 Boundaries



2.16 Design & Access Statement Principles Compliance

Parameter Plans

The Outline Planning Application (OPA) established the framework for the planning and design of the Rugby Radio Station site, including KP1. The Parameter Plans as presented earlier in this Context chapter establish the design approach with a broad distribution of land uses, the arrangement of movement and access framework and the disposition of green infrastructure, plus approach to building heights and density. Further design principles and guidance have been set in the OPA Design and Access Statement.

Design & Access Statement

The Design and Access Statement conveys the design intentions for the full Rugby Radio Station site including principles, concepts, strategic design and intended character of the proposals. Whilst Design Guides will accompany each Key Phase of development it is important that these are understood in the context of, and be read alongside, the Design and Access Statement for the whole Radio Station site.

This Design Guide for KP1 seeks to build upon the established design principles and guidance, taking forward the site-wide design guidance set out in the Design and Access Statement and elaborating upon this with further detailed design fixes and design guidance for the area of KP1.

Design Principles

The Design and Access Statement includes a set of key design principles that underpin the development framework and OPA. These principles for design and development are separated into two groups:

- **Higher Order Principles**, which reflect the traditional principles of good design; and
- **Context Sensitive Principles**, which are specific to the place that Rugby Radio Station will become.

These principles have been carried forward into the KP1 Design Guide as follows over page:

High Order Principles

Higher order principles from the OPA DAS are listed in bold italics as follows. Under each principle an explanation is given to state how the Design Guide takes account of principles.

"Walkable neighbourhood and permeable network of streets"

The Regulatory Plan establishes a network of permeable streets, which is further explained in the Design Guide:

Chapter 4 Movement & Access with reference to how the network of streets, footpaths and cycle routes provide the opportunity for sustainable healthy modes of travel. Indicative locations for bus stops are also noted on the Regulatory Plan to facilitate access to public transport.

Chapter 3 Green Infrastructure, complements the theme with illustration of how leisure routes of footpaths and cycleways permeate through the network of landscape spaces.

Fig 2.25: Inset of Cycle, Pedestrian and Bus Network Plan, see Chapter 4

"Active frontage streets"

Land uses and streets as set on the Regulatory Plan are arranged to ensure that streets and spaces are actively fronted by development with activity and interest addressing and interacting with the public realm. Further guidance in support of the Regulatory Plan layout is provided in:

Chapter 3 Green Infrastructure, with reference to the distribution of important landscape spaces and public realm;

Chapter 4 Movement & Access, with illustration of street sections (including buildings framing streets) and edge sections (how the edge of development parcels interact with adjacent public realm streets and spaces;

Chapter 5 Residential Built Form, with details regarding plot layout rules including active frontages.

Chapter 6 Mixed Use Built Form, with details regarding how mixed use development must interact with the public realm, with particular reference to active uses on ground floors.

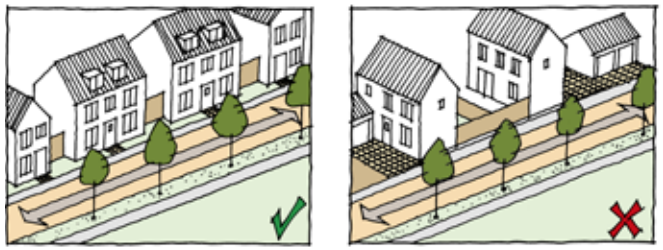


Fig 2.26: Inset of Routes and Spaces, see Chapter 5

"A green infrastructure setting"

The Regulatory Plan creates a framework for development set within the network of streets and spaces: the green infrastructure is central to this with a network of interconnected landscape components.

Chapter 3 Green Infrastructure, sets out the design approach to establishing a rich green infrastructure setting for KP1, with details on both the network and individual components including formal open space, informal open space, wildlife corridors, residential pocket parks etc.

Fig 2.27: Inset of Green Infrastructure, see Chapter 3

"Vibrant mixed communities"
Locations for mixed uses, employment and play are set on the Regulatory Plan, expanded upon in:

Chapter 6 Mixed Use Built Form, with further details for each mixed use location, illustrating potential mix of uses and the form in which development should be established;

Chapter 7 Commercial Built Form, sets design guidance for areas for employment development within KP1;

Chapter 9 Technical standards, includes play provision with locations and walking distance thresholds.

"Sustainable Design"
Sustainability is incorporated into the proposals for KP1 at both the macro scale (for instance establishing a permeable network of streets and routes to allow for sustainable transport choices) and micro scale of technical efficiencies in:

Appendix 2, KP1 Sustainability Statement, which sets out guidelines for energy, waste and water.

"Distinctive urban form"
The Regulatory Plan provides a clear pattern of streets, spaces and places, creating a setting for quality architecture. This is expanded upon in:

Chapter 4 Movement & Access, further detail on the street hierarchy;

Chapter 5 Residential Built Form, comprehensive design fixes to control architectural quality set in typologies and matrices.

Chapter 6 Mixed Use Built Form, sets important design rules for locations of mixed use development which will be particularly distinctive urban form.

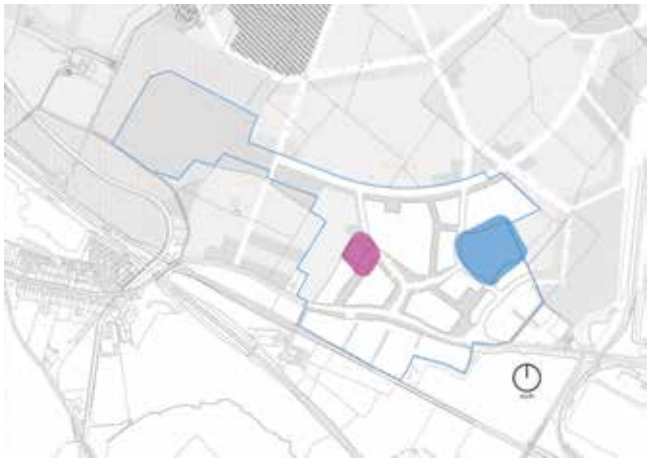


Fig 2.28: Inset of Mixed Use Areas plan, see Chapter 6

Fig 2.29: Inset of Cycle, Pedestrian and Bus Network Plan, see Chapter 4

Fig 2.30: Inset of Primary School, see Section 6.4

Context Sensitive Principles

Context sensitive principles from the DAS are listed in bold italics as follows. Under each principle an explanation is given to state how the Design Guide takes account of principles.

"Consider key influences"

The structure of the Regulatory Plan responds to key influences, notable opportunities for access and connections, and respects existing landscape and ecology features.

Chapter 2 Context, gives further detail of the existing site context for KP1 with reference to topography, landscape features, access, heritage, existing built form etc.

Chapter 3 Green Infrastructure, illustrates how the network of landscape spaces should utilise and respond to existing features including Normandy Hill, ponds, hedgerows etc.;

Chapter 4 Movement & Access, identifies points of access and connection with the existing road network and how new features can integrate with the existing communities – for instance the provision of a dedicated cycleway along the A428 Crick Road to connect the eastern edge of Rugby with DIRFT, via the frontage of KP1;

Chapter 9 Technical Details, includes approach to consideration of key influences including ecology and hedgerows.

Fig 2.31: Inset of Normandy Hill, see Chapter 3

"Ensure positive connections to DIRFT"

This context sensitive principle is particularly important with regard to the proposed DIRFT III development and the relationship across the A5 between the Rugby Radio Station site and DIRFT III: this is an area that is beyond KP1 and is as such not detailed in this Design Guide. The relationship to the existing DIRFT development is considered in:

Chapter 2 Context and the Regulatory Plan notably responds to this with the location of commercial development parcels in the south east part of KP1;

The commercial development parcels nearest to DIRFT are further detailed in **Chapter 7 Commercial Built form**.

Connections to DIRFT are also considered in the Regulatory Plan (and **Chapter 4 Access & Movement**) with the provision of a dedicated cycleway connection parallel to the A428 Crick Road, connecting KP1 to DIRFT.

Fig 2.32: Inset of 'Set in the Landscape' commercial area, see Chapter 7

"Utilise key assets"

The Regulatory Plan creates a scheme layout that is partly structured around key assets of the site that are to be retained as part of the proposals, such key assets include:

Normandy Hill & area of ridge & furrow – as detailed in **Chapter 3 Green Infrastructure**; Hedgerows – see **Chapter 9 Technical**;

Ecological considerations – see **Chapter 9 Technical**;

Heritage features – as detailed in **Chapter 2 Context**;

Existing landscape features – as detailed in **Chapter 2 Context**;

Fig 2.33: Inset of Regulatory Plan, see Chapter 2

"Facilitate community cohesion"
The Regulatory Plan creates a structure and layout that supports community cohesion with provision of a primary school, parcels for mixed uses, formal and informal open spaces in well connected locations, linked by a permeable network of street and footpaths. Community facilities are further considered in:

Chapter 6 Mixed Use Built Form, gives definition of areas of mixed use development that will be focuses for community activity, including central community use associated with reuse of buildings at Dollman Farm and central community formal open space, and the Primary School at the eastern edge of KP1.

"Cultural programming"
The Regulatory Plan incorporates connections to the heritage of the site, with some streets alignments informed by the memory of the network of masts. Some concrete anchors will be retained within wildlife corridors as part of the network of Green Infrastructure. Buildings associated with Dollman Farm are to be reused as key features in a mixed use area. Further details of these features are provided in:

Chapter 2 Context;

Chapter 4 Movement & Access;

Chapter 6 Mixed Use Built Form

"A logical extension to Rugby in relation to morphology and connections"
The Regulatory Plan is structured by a comprehensive network of streets, footways and cycle paths creating a variety of connections to, and through, KP1, linking beyond the site to DIRFT and Hillmorton.

Chapter 4 Access & Movement presents further detail on the Regulatory Plan design fixes for access points, street hierarchy, cycleways and bus stops. The cycleway adjacent the A428 and other cycleways through the site support the design objective to provide accessibility across the site and onward to adjacent existing developments.

Fig 2.34: Access Points plan, see Chapter 4

Fig 2.35: Inset of Site Features Overview Plan, see Chapter 2

2.17 Environmental Statement Compliance

This section regarding Environmental Statement compliance provides a review of the KP1 design and layout, as depicted in the Design Guide and Regulatory Plan, against the Environmental Impact Assessment that informed the Outline Planning Permission (OPP). It also verifies the incorporation of and compliance with the wider schemes in-built mitigation and additional necessary mitigation measures.

A comprehensive Environmental Statement was submitted with the Outline Planning Application (OPA), this comprised the original Environmental Statement (ES) submitted in 2011 and the ES Addendum submitted in August 2013. The ES provided an assessment of the proposed development and set out the requirement for specific mitigation measures.

The Proposals

The Outline Planning Permission, issued in May 2014, was based on a series of six parameter plans and a Development Specification which set out the quantum of development for each land use. It is these documents that were tested as part of the Environmental Statement and against which the review of the KP1 Design Guide is made.

The KP1 Regulatory Plan is in general conformity with the outline Development Framework Plan (ref: RRS007-DFP-001 Rev J) and accommodates a quantum of development for each land use that is within the limits of the Development Specification.

Design and Layout

Residential

The KP1 Regulatory Plan and Design Guide assume that up to 600 dwellings can be delivered in the KP1 area within residential and mixed use areas; this is in compliance with the quantum of residential development for this area as established by the residential parcel areas and densities in the OPA. The distribution of residential uses through KP1 is generally in accordance with the Development Framework Plan.

To ensure that there is a good relationship between land uses, the minor realignment of the road network in the south eastern quadrant of the site has enabled the consolidation of residential uses to the west of the A428 access with consolidated employment uses to the east of this point of access. This provides a more coherent design response and ensures that a high quality residential environment can be achieved, whilst also facilitating a more integrated employment area which is contained to the east of the primary street in this location.

Education

A primary school is located within the eastern quadrant of the KP1 area, this is generally compliant with the OPP. In terms of delivery, the phasing of KP1 will ensure that the primary school is implemented in accordance with the triggers as required by the S106 Agreement. Early years provision for childcare could be provided in the form of a creche or nursery, a possible location for this would be in close proximity to the primary school.

Employment

Employment uses are focused to the south of the A428, consistent with the Development Framework Plan and Transport Assessment that has informed the OPA. A parcel for employment is also located to the east of the new A428 access gateway. As set out above, employment uses in the south eastern part of the site have been consolidated to strengthen the employment presence and provide an attractive, employment focused environment for potential occupiers so a range of plot sizes can be achieved.

Mixed Use

Mixed use is focused at Dollman Farm. This is generally in accordance with the outline Development Framework Plan albeit that during the detailed design process the distribution of mixed use parcels has been refined to focus retail, commercial and community uses on key focal points within the KP1 area where such uses are considered to be most viable.

Access and Movement

The movement network has been informed by the Access and Movement Parameter Plan and the detailed access drawings submitted as part of the outline application. Therefore the point of access from the A428, is consistent with the detailed arrangements approved with the outline. The timing of the implementation of the junction accords with the relevant access Condition on the outline permission and it has sufficient capacity to accommodate the quantum of development proposed in KP1.

The internal street network is generally in accordance within the movement framework established by the outline permission, however it has been further informed by the detailed design work undertaken at Key Phase level. It has subsequently been refined to ensure that the street character and highway alignments are consistent with the scale and type of development proposed. This has involved reviewing the street character of the primary routes into the site so that they reflect a more human scale of development and help integrate the proposals with the surrounding road network.

The primary street access directly from the A428 proposed roundabout has been refined to facilitate the consolidation of residential and employment uses in this location. The alignment of this primary street is now considered to be more coherent and allows for a harmonious relationship between the differing land uses in this part of the site as residential uses are contained to the west of the street, which itself acts as a point of transition to the employment uses which are now entirely to the east of the street. The design of this primary street will respond to the varying conditions which it traverses depending on its fronting land uses.

As part of the design for KP1 the internal movement network has been reviewed to emphasise the east – west connection across the KP1 area. This low order connection will ensure that there is a link between the key assets within KP1 from the mixed uses clustered around Dollman Farm, linking to the primary school in the east. This will improve the permeability through KP1 and access to the key community facilities within this phase. This connection is in addition to the east – west connection running along the northern edge of KP1 and so is considered to have a positive impact in terms of access and movement.

The amendments to the movement network are considered not to have a significant impact in environmental assessment terms due to the minimal extent of the deviation from position as per the outline permission.

Green Infrastructure

The green infrastructure network has been refined as part of the detailed design of KP1. Importantly, this has allowed for the precise location and extent of the 60m and 20m wildlife corridors to be defined. Their location is generally consistent with the arrows shown on the Green Infrastructure Parameter Plan and this detailed level of design has enabled their position to be correlated to the precise location of existing ponds and also subsequently determine the best location for new ponds to be provided within these corridors. The wildlife corridors are now shown to their full required width and so comply with the mitigation requirements as set out in Environmental Statement. They have also been carefully designed to respond to the site's topography, sustainable drainage requirements and to accommodate the necessary utilities. The KP1 design has allowed for a coordinated review of green infrastructure and the minor realignments of the wildlife corridors has positively impacted upon their integrity in terms of biodiversity and surface water drainage potential.

The position of the area of formal open space is in accordance with the outline Development Framework Plan, and the incorporation of pocket parks is also consistent with the proposals approved as part of the outline permission.

The location and extent of allotment provision in KP1 has been amended as a result of meeting the ecological requirements within this Key Phase. To increase the provision for food production further orchard planting is proposed within the green infrastructure network as this use is appropriate within wildlife corridors.

The KP1 area includes an area of retained ridge and furrow on Normandy Hill and in accordance with the outline planning permission proposes that this is retained in its current form to secure the integrity of this heritage feature.

A few small parcels of incidental open space have been consolidated within the wildlife corridors to provide more useable, multi-functional open space. The number of play areas proposed in KP1 is consistent with the outline planning application, albeit that their precise location has been refined so that they relate well to the wider green infrastructure network.

The GI network is generally in accordance with that proposed as part of the outline and it is considered that there has been a net gain in terms of environmental impact given that the required ecological mitigation measures have been subject to detailed design and are incorporated to their full extent within the proposals.

The approach with regards to hedgerows (existing, retained, removed, replaced) is set out in chapter 9, Technical Details, see chapter 9.13.

Environmental Mitigation Measures

The KP1 layout has not only been designed in accordance with the design parameters established as part of the outline application but has sought to incorporate the required mitigation measures that were set out in the Environmental Statement and its subsequent Addendum.

Update November 2015

Residential

The updated KP1 Regulatory Plan reflects a minor amendment to the disposition of residential parcels following the addition of new open space, the improvements to the street alignments, the repositioning of the Primary School and the minor KP1 boundary change.

The distribution of residential parcels remain generally in accordance with the outline Development Framework Plan and the minor amendments are not likely to have a significant impact in environmental terms. The changes are considered to introduce further legibility and facilitate a more intimate character.

Education

The primary school provision remains as required by the S106 Agreement – 2.5ha site that is accessed from the primary street network. The disposition of the school has been amended slightly but is still in general accordance with the outline Development Framework Plan. The change is non-material in the context of the scale of the wider development and is not likely to have a significant effect in environmental terms.

Employment

The non-material amendment to outline conditions 5, 23 and 28, secured the re-positioning of the access into the employment parcel south of the A428. An employment testing exercise accompanied this application and demonstrated that there was little impact of the amended junction location.

Mixed Use

The mixed use elements of KP1 are now focused at Dollman Farm. This accords with the outline Development Framework Plan.

Following the repositioning of the school, the retention of the residual small mixed use parcel in the north eastern quadrant of KP1 was not considered feasible. An early concept for a more consolidated local centre is being pursued. This minor amendment is not considered to have a significant effect in environmental terms.

Access and Movement

The new junction off the A428 into the northern component of KP1 is separate to the outline permission but is located in the same general position as the previously identified emergency access.

The minor realignment of the internal street network serves to provide traffic calming and is more conducive to the residential character of KP1.

The wider evolution of KP1 is not considered to have a significant impact on the access and movement arrangement. There is now a more coherent relationship between Dollman Farm and the primary school with strong east – west pedestrian and connections between these two destinations. The changes do not increase the scale of development in KP1. As such they are not considered to have any significant effect in environmental terms and will still enable the requirements of the outline conditions to be achieved.

Green Infrastructure

The amendments to the green infrastructure network have resulted in a net gain of open space and does not impact upon the ecological mitigation measures in KP1.

As set out above, the design evolution has necessitated minor, non-material amendments to KP1. The approach to KP1 remain in general accordance with outline permission parameters and therefore it is not likely to result in any significant effects in environmental terms.

[INSERT PART B SECTION DIVIDER]

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PART B Spatial

Part B presents design coding information in support of the content of the Regulatory Plan. Layers of the Regulatory Plan are explained in more detail with identification of design fixes under each spatial topic area, supported by design guidance including indicative illustrations.

The spatial development framework for KP1, as illustrated on the Regulatory Plan is set out in the following spatial design chapters:

3. Green Infrastructure;

4. Movement & Access;

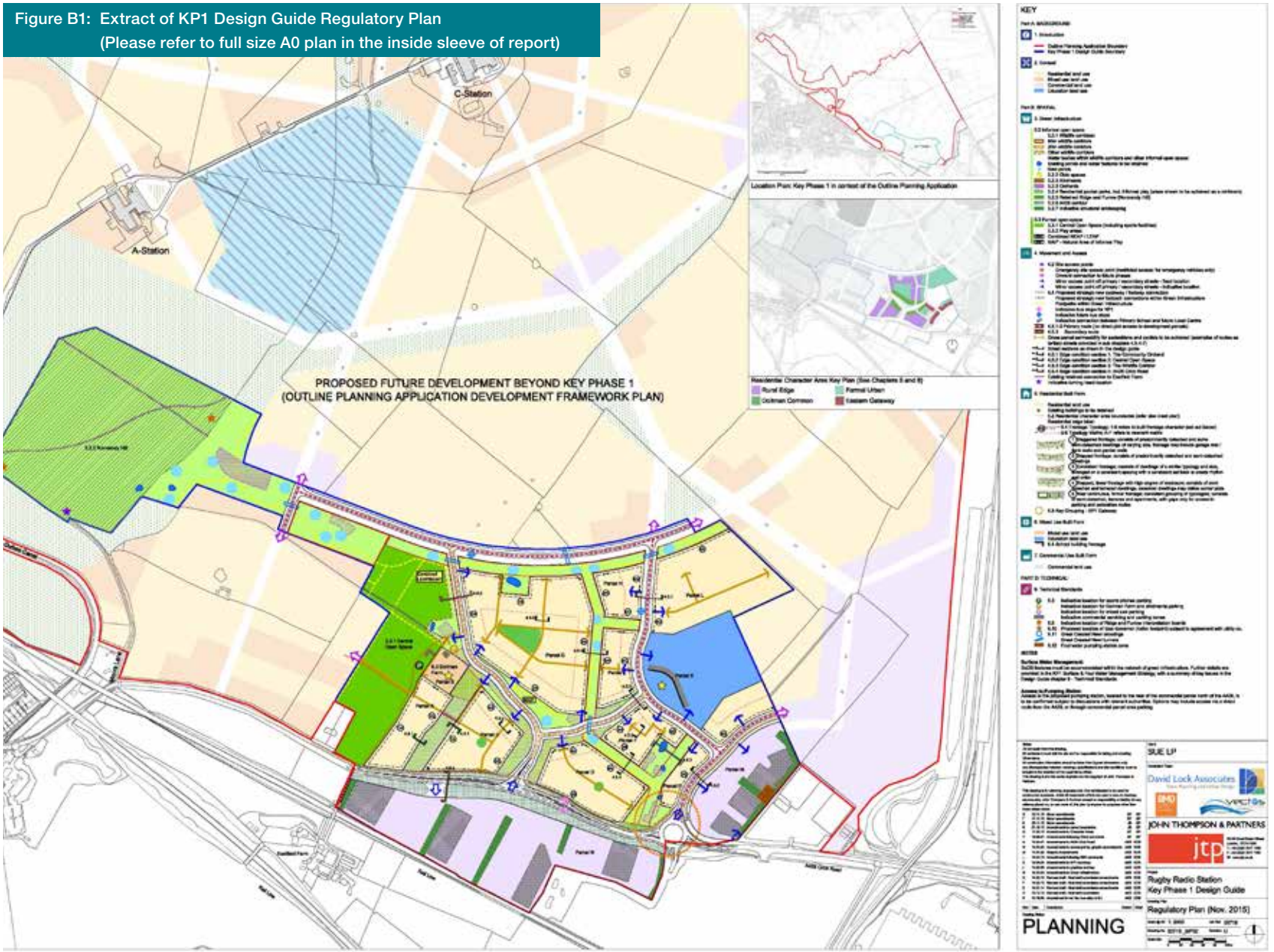
5. Residential Built Form;

6. Mixed Use Built Form; and

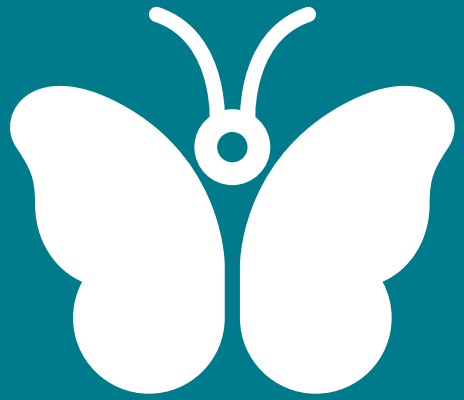
7. Commercial Built Form

The design fixes for each spatial element are summarised at the start of each chapter. All design fixes are cumulatively brought together in the Compliance Checklist in Appendix 1.

Figure B1: Extract of KP1 Design Guide Regulatory Plan
(Please refer to full size A0 plan in the inside sleeve of report)



Chapter 3
Green Infrastructure

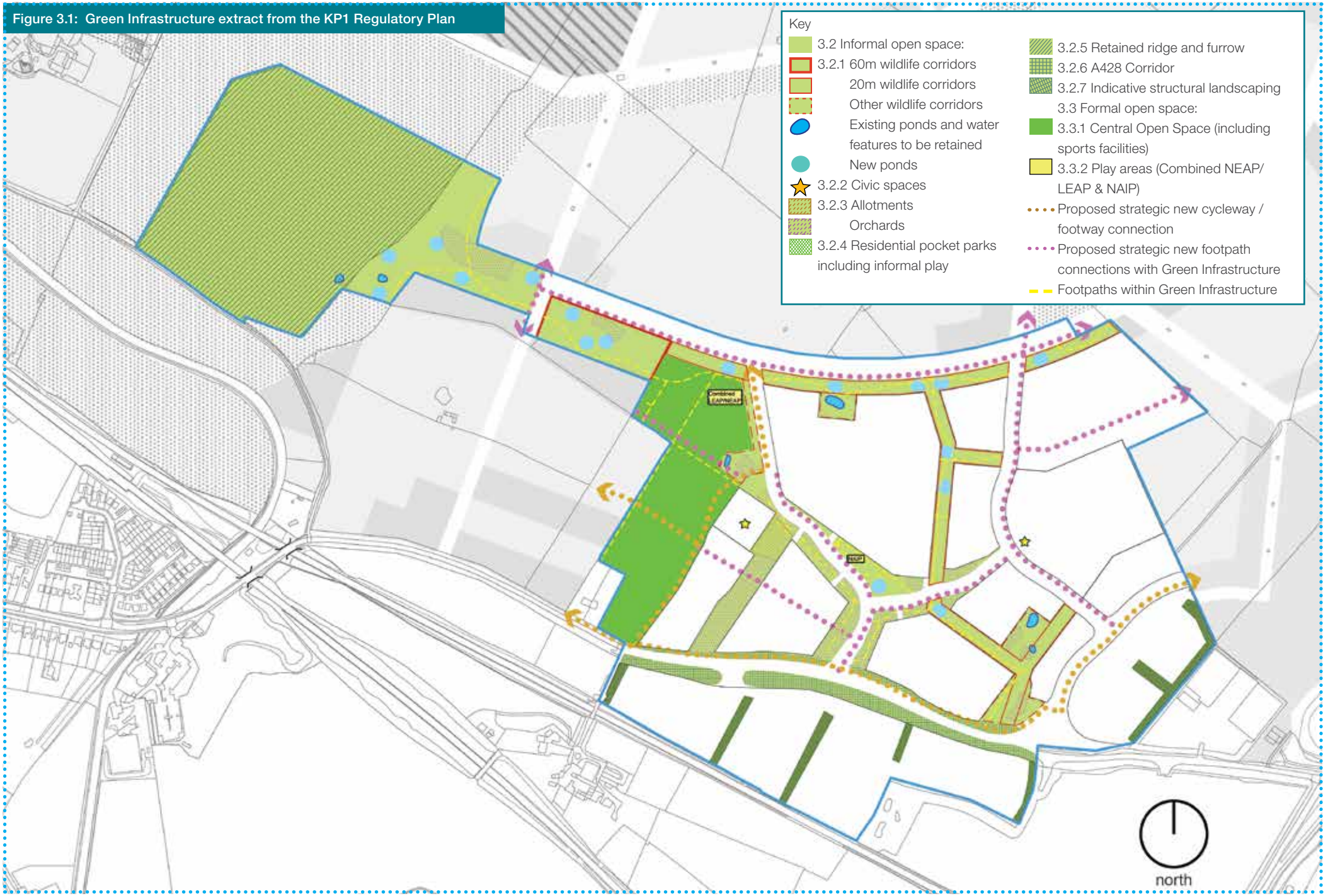


Chapter 3: Green Infrastructure Mandatory Design Fixes

The mandatory design fixes are set out below and shown on the Regulatory Plan. The Compliance Checklist in Appendix 1 presents a complete list of design fix headings from the whole Design Guide.

- Green infrastructure will comprise of formal and informal components illustrated in the Regulatory Plan and highlighted in Figure 3.1 comprising of the following:
- **3.2 Informal open space:** location of informal open spaces as shown on the Regulatory Plan. Provision of walking and cycling routes, informal play and exercise opportunities, natural ecological interest water bodies, hedgerows, trees and grassland to specifically include:
    - **3.2.1 Wildlife Corridors:** location and width of the primary wildlife corridors (60m wide) and secondary wildlife corridors (20m wide). Must include Great Crested Newt (GCN) habitats (ponds, hibernacula, appropriate planting), leisure routes for pedestrians & cyclists.
    - **3.2.2 Civic Spaces:** location of civic spaces and their approach to more ornamental planting and formal public realm design.
    - **3.2.3 Allotments & orchards:** location of allotments and orchards including the retention and replenishment of a defined section of the orchard south of Dollman Farm
    - **3.2.4 Informal Play including Residential Pocket Parks:** location of smaller scale pocket parks that are to be provided within residential parcels and should incorporate natural play features
    - **3.2.5 Normandy Hill and Retained Ridge & Furrow:** Retained Ridge and Furrow should be protected and articulated through interpretation boards in defined locations.
    - **3.2.6 A428 Corridor:** a landscape edge to the A428, including a dedicated pedestrian and cycle route (on the northern side of the A428).
    - **3.2.7 Structural Landscaping:** blocks of structural, native planting should be provided to increase biodiversity.
    - **3.2.8 SuDS:** the necessary SuDS designs features are to be integrated into the green infrastructure.
    - **3.2.9: Water design and management of risk:** measures for the appropriate design of water features.
    - **3.2.10: Private and Semi-private space**: approaches to planting in private and semi-private open space.
- **3.3 Formal open space:** Location of formal open space as shown on the Regulatory Plan. Open space will be provided for the use of sports pitches and formal play areas including:
    - **3.3.1 A formal central open space:** including sports pitches, a combined NEAP/LEAP, foot/cycle paths, retained ponds.
    - **3.3.2 Play Areas:** Location of children's play areas to include a combined LEAP / NEAP, a natural area of play and other informal play provision to be accommodated within the network of green infrastructure.

Figure 3.1: Green Infrastructure extract from the KP1 Regulatory Plan



3.1 Introduction

Green Infrastructure

The Green Infrastructure (GI) within the SUE is integral to the development framework and it has been carefully designed to balance a wide number and range of factors and requirements to meet multiple considerations.

The design response for green infrastructure is focused on providing a high quality landscape including the creation an exemplar habitat for the Great Crested Newt (GCN) population (see Ecology section 9.11 of Chapter 9 for further details). The multifunctional nature of the Green Infrastructure is fundamental to ensuring the requirements of Natural England are met.

The key structural elements of the green infrastructure network comprise:

INFORMAL OPEN SPACE:

- Wildlife and green corridors, these must perform multiple functions:
  - Retention and enhancement of appropriate GCN habitat;
  - Retention and protection of cultural heritage – importantly retained Ridge and Furrow;
  - Provision of informal recreation spaces to contribute to site wide amenity space;
  - Incorporation of pedestrian routes to encourage sustainable travel;
  - Accommodating best-practice sustainable drainage solutions (SuDS).
- Dollman Common which includes a duck pond, native tree planting and informal natural area for play.
- Productive landscapes – to retain and increase provision of orchards and allotments.

FORMAL OPEN SPACE:

- Provision of sports pitches to provide for play, sport and recreational activities;
- Provision of children's play areas including a combined Neighbourhood Equipped Areas for Play (NEAPs) / Locally Equipped Areas for Play (LEAPs) and natural areas of play.

The scale, typology, location and connectivity of the KP1 Green Infrastructure is informed by the principles contained in the OPA Green Infrastructure Strategy and any proposals should have regard to this document (and the biodiversity strategy) in addition to the KP1 Design Guide.

Figure 3.1 presents an extract of the Green Infrastructure elements from the Regulatory Plan.

The Green Infrastructure network for KP1 should comprise the following:

- **Informal Open Space** - A range of multifunctional spaces including:
  - **Dollman Common** - 'scene-setting' informal open space for KP1, provides a natural area for play, a duck pond, spaces for community interaction and footways to connect to other parts of KP1.
  - **Wildlife Corridors** - Multifunctional informal open spaces that primarily focus on the creation of protected habitat for GCN but that also provide a range of opportunities for recreation and wider planting strategies.
  - **Civic Spaces** - More formal, harder spaces that provide a focus for community interaction in the development areas;
  - **Allotments and Orchards** - Productive landscapes to include community gardens as well as retained, replenished and proposed orchard spaces.
  - **Residential Pocket Parks** – an additional intimate amenity open space resource within residential parcels to include elements of natural play;
  - **Retained Ridge and Furrow** – areas of retained Ridge and Furrow that are protected and articulated through interpretation boards;
  - **A428 Corridor** – an area of structural planting along this key existing movement corridor that seeks to protect and enhance existing landscape assets.
  - **Proposed Structural Landscaping** - Larger scale block planting of native species to provide screening to include species for biodiversity enhancement.
  - **Water: Design and Management** - Water Sensitive Urban Design (WSUDs) initiatives and processes are integral to the design of the wider informal open space network;
  - **Private and Semi-Private Space** - Gardens and parking courtyards provide an important contribution to the landscape and streetscene.
- **Formal Open Space** – provision for formal sports, recreation and play including:
  - **Formal central park area:** providing an area for sports pitches as well as informal recreation and formal and informal play.
  - **Play Areas:** children's play areas to include a combined NEAP / LEAP, a natural area of informal play and other informal play provision to be accommodated within a network of green infrastructure.

The above listed multi-functional spaces are explained further in the rest of this chapter. An overview of informal and formal open space is illustrated in Figure 3.2.

Figure 3.2: Informal and Formal Open Space highlighted on KP1 Regulatory Plan

3.2 Informal Open Space

Character and Form

The informal open space helps create the landscape setting for KP1. It will perform a variety of functions and accommodate a number of activities including walking, exercise, relaxation, habitat creation, allotments, and community gathering.

The key structural element of the informal open space are the wildlife corridors which seek to facilitate extensive habitat creation works for the conservation of GCNs.

The open spaces across the development recognise the importance of fully accessible spaces for all ages and abilities. Drop kerbs, gentle gradients, shared surfaces, tactile paving and contrasting materials and bandings will be developed at the appropriate design stages. Street furniture will include provision of benches with back and arm rests to assist with standing and sitting.

Illustration of informal open space.

Location

- The location of informal open spaces are fixed on the Regulatory Plan.

Size / Scale

- Wildlife corridors – see chapter 3.2.1.
- Other informal open space, see Regulatory Plan.

Function & Features:

- Wildlife corridors including a variety of new and existing ponds, linked by a mosaic of planting habitats including hedgerows, trees and grassland.
- Incorporation of additional green corridors which help consolidate connections in the green infrastructure network in areas not defined as 'wildlife corridors';
- Connecting a network of existing and proposed ponds / waterbodies and habitat areas;
- Opportunities for informal recreation;
- Integration of existing and proposed vegetation – including hedgerows, trees and grassland;
- Integration of waterbodies and SuDS;
- Walking and cycling routes;
- Spaces and features that present informal play and exercise opportunities for example Trim trails and 'play on the way' using landform modeling and use of reclaimed and informal materials (timber, stones etc)
- Provision for seating including timber benches and other features that will help animate the space for recreational use.
- Educational features to provide information about ecology and conservation by a combination of signage and information boards to encourage interaction between residents and habitats;

Precedent - informal open space corridors.

Precedent - a mosaic of compatible habitats.

Precedent - informal, natural play elements.

3.2.1 Wildlife Corridors

Character and Form

A network of Wildlife Corridors are required to provide protected and improved habitat to preserve the existing colony of GCN found on site. This network will fulfill a variety of functions and is also required to obtain a licence from Natural England. Indicative plans of 60m and 20m wide Wildlife Corridors are illustrated in Figure 3.3 and Figure 3.4 respectively.

The following determines the location and layout of the Wildlife Corridors:

Location

- Location fixed on the Regulatory Plan. Located throughout the KP1 area - primarily linking east- west from Normandy Hill towards the School.

Size / Scale

- Primary Corridor - minimum 60m wide
- Secondary Corridor - minimum 20m wide
- Other supplementary wildlife corridors.

Function & Features

- Certain functions fixed on Regulatory plan including:
- Connecting a network of existing and proposed ponds / waterbodies and habitat areas;
- Provision of GCN hibernacular features in close proximity to existing and proposed ponds;
- Connecting existing and proposed green spaces with the wider landscape;
- A mosaic of appropriate habitats is to be created to include long grass, scrub, shrubs and native tree planting;
- Hedgerows – to be retained where required and enhanced to provide strong biodiversity linkages;

Function & Features continued:

- Provision for pedestrian / leisure routes compatible with habitat creation. Timber bridge structures at key locations allow GCN's to move beneath pathways. Additional bridge structures allow pedestrian movement over SUDS features.
- Provision for low impact recreation and informal play spaces including educational features and interpretation boards;
- Use of natural landforms and materials compatible with habitat creation.
- Incorporation of productive landscape in the form of orchards;
- Incorporation of areas of retained Ridge & Furrow;
- Incorporation of necessary SuDS features in accordance with the KP1 Surface Water Drainage Strategy;
- Furrow depressions will be used within the wildlife corridors as SuDS features consistent with the KP1 surface water drainage strategy
- Provision of appropriate wildlife crossing points (tunnels and crossings) where corridors intersect with vehicular routes;
- NOT to include any vehicular routes apart from at defined crossing points.

Precedent - Simple bridges over SUDS channels.

GCN Corridor precedent - Marnel Park, Basingstoke

Precedent - 'Greenways' incorporating existing hedges.

Fig 3.3: Indicative plan of a 60m wide Wildlife Corridor

Fig 3.4: Indicative plan of a 20m wide Wildlife Corridor

3.2.2 Civic Spaces

Character and Form

Civic spaces within KP1, whilst part of the informal open space network, are to be more formal areas that will provide a focus for community activities and social interaction. The Green Infrastructure elements of these spaces is covered in this chapter and their built form is addressed separately in Chapter 6.

The Civic Spaces will provide a network of high-quality useable destination points that provide a focus for community activities.

A more formal approach to design and use of materials is required to distinguish these spaces from the more naturalistic 'pocket parks'.

The design of the Civic Spaces, as well as for open spaces across the development, will recognise the importance of fully accessible spaces for all ages and abilities. Drop kerbs, gentle gradients, shared surfaces, tactile paving and contrasting materials and bandings will be developed at the appropriate design stages. Street furniture will include provision of benches with back and arm rests to assist with standing and sitting.

Civic Spaces will be located at:

- **Dollman Farm** – the juxtaposition of the retained orchard, proposed allotments and mix of uses commercial and community associated with the retained Farm building provides an opportunity for a focal courtyard space;

Locations

- Location of civic spaces as shown on the Regulatory Plan including within the Mixed Use areas at:
- Dollman Farm
- In front of the Primary School main entrance
- Incidental smaller spaces within detailed plot layouts

Size/scale

- To be determined in detailed applications but to be proportionate to the scale of adjacent uses.

Function & Features:

- Social, cultural, informal recreation as a focus for community interaction;
- Ensuring connections to the wider pedestrian and cycle network;
- Formal design with predominantly hard landscape to accommodate community gatherings / events;
- Planting within the Civic Spaces is to be more ornamental and structural in form and robust enough to deal with higher levels of usage.
- Provision of more formal seating, appropriate street furniture and lighting to ensure usability throughout the day;
- Use of higher quality materials for paving and other hard landscape features;
- Incorporation of public art to animate the spaces.

Precedent - combined planters/seating.

Precedent - appropriate materials for setting.

Precedent - use of high quality materials.

3.2.3 Allotments & Orchards

Character and Form

Food production areas have been incorporated into the KP1 green infrastructure network and the disposition of orchards and allotments has been designed to ensure compatibility with GCN habitat creation, to include the following:

- **New and retained orchard planting** within Dollman Common and along the avenue entrance to KP1.
- **New orchard planting** will be provided in the Wildlife Corridors as this is a compatible use with GCN habitat.
- **A community orchard** will be established around the existing orchard to the south of Dollman Farm which will be partially retained in KP1. A process of phased replenishment will be undertaken around the retained trees. This will involve the reintroduction of the often rare existing varieties.
- **Community allotments** are located in the Dollman Farm area, a key community destination space within KP1 with a close relationship to the existing, retained orchard. Locating the community garden in this space ensures good access for servicing, deliveries and utilities, including water and electricity.

Note on orchard species: Most of the cultivars for the existing rare varieties are available commercially as trees but could alternatively be propagated using graft wood if required. As the virus status of the existing Dollman Farm stock is unknown, it is not advisable to use graft stock from site but specialist nurseries and cultivar collections situated around the UK are to be contacted to provide grafting stock.

An indicative plan of community orchards and allotments at Dollman Farm is illustrated in Figure 3.5.

Locations

- Allotments and orchards fixed on Regulatory Plan including:
- Dollman Farm:
  - Community Allotments;
  - Community orchard focused on existing retained orchard; and
  - Orchard planting within Dollman Common.
- Proposed Orchard planting within Wildlife Corridors

Size / scale

- Broad areas shown on Regulatory Plan.
- The precise size and subdivision of plots to be determined in detailed proposals.

Function & Features

- Productive landscape - allotments and orchards that create opportunity for community food production;
- Design of food production areas should encourage education of the productive landscape; use for community events and habitat conservation;
- Orchard planting in Wildlife Corridors will require a grass cutting regime compatible with GCN habitats;
- Orchard planting varieties within the wildlife corridors will comprise more readily available cultivars to maximise availability of stock;
- A flexible approach to allotment plot layout will facilitate efficient use of space;
- A range of allotment plot sizes should be provided – 250sqm as standard with also half and quarter plots;
- New planting in the Community Orchard will comprise varieties with a close relationship to those of existing trees for heritage and conservation;
- Appropriate fencing and signage for all, water supply required for allotments.

Precedent - flexible allotment shapes and sizes

Precedent - kitchen/community gardens

Precedent - accessible community orchards

Fig 3.5: Indicative plan of Dollman Farm and Community Orchard

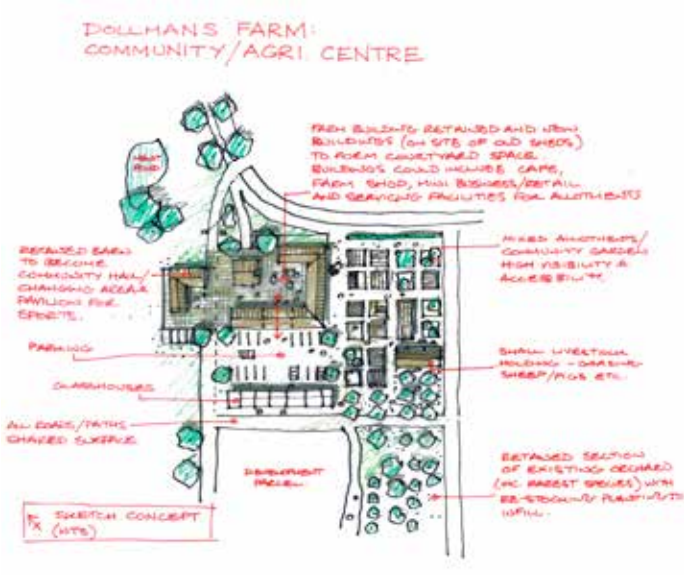
Dollman Farm - courtyard space formed by new and retained buildings.
May include shops, kitchen gardens and community facilities.

Allotments - community garden area provides a variety of plot sizes and utilises the Dollman Farm facilities.

Potential glasshouses to complement community allotment food production.

Community Orchard - central strip of retained mature trees to form the backbone of a replenished orchard layout.

note: design shown is indicative only and subject to development during associated Reserved Matters application.



Illustrative concept sketch for Dollman Farm.

Aerial photograph showing Dollman Farm and the Orchard

3.2.4 Informal Play including Residential Pocket Parks

Character and Form

Additional play and recreation elements are to be located throughout the development in the form of natural play elements and pocket parks.

As smaller naturalistic areas located within residential parcels, these pocket parks will be intimate spaces for local residents, benefiting from the natural surveillance of surrounding dwellings. They will provide a visual break in the built development and their design will be compatible with and proportionate to the surrounding dwellings.

The Pocket Parks will recognise the importance of fully accessible spaces for all ages and abilities. Drop kerbs, shared surfaces, tactile paving and contrasting materials and bandings will be developed at the appropriate design stages. Street furniture will include provision of benches with back and arm rests to assist with standing and sitting.

Pocket parks will be characterized by:
- native tree and shrub planting;
- areas of open space;
- natural play features;
- seating and other distinctive features to provide identity and assist in wayfinding.

Locations
- Minimum of five as shown on the Regulatory Plan
- To be designed as part of residential development parcels.
- Smaller, more intimate spaces proportionate to the scale of surrounding built development.

Function & Features
- Community interaction.
- Natural play features.
- Exercise features including trim trails.
- Native shrub and tree planting.
- Open grassed areas
- Seating

Fig 3.6: Concept - Pocket Parks within residential areas

Precedent of residential pocket park, Accordia, Cambridge

Precedent of residential pocket park, Accordia, Cambridge

Pocket Park, Accordia, Cambridge

Precedent of informal play, Great Notley Country Park

Precedent of play set in landscape, Milton Keynes

Precedent of Pocket Park in build up area, Copenhagen

3.2.5 Normandy Hill and Retained Ridge and Furrow

Character and Form

Areas of existing Ridge and Furrow have been identified for retention to ensure preservation of this key local historic landscape feature in accordance with strategies developed alongside English Heritage.

The historical land uses of the site can be traced back to records from 1608 when the ridge and furrow features were already in existence, formed by historic ploughing methods. Therefore, a policy of limited intervention is to be adopted to retain the unique character and features whilst allowing access routes to provide a multifunctional green space.

The Ridge and Furrow is a key element of the wider informal open space network providing a significant contribution to the amenity open space across KP1. The provision of mown grassed footpaths across the main Normandy Hill Ridge and Furrow area will facilitate public access to this open space and provide connections to the Green Infrastructure network.

A range of informal recreational activities can be carried out on this dramatic landform, and retention and stewardship will help to achieve Natural England's Green Space Accessibility standards for both the SUE and Hillmorton. The Ridge and Furrow itself represents a focus for a range of educational and cultural initiatives and the provision of interpretation boards will help provide information on the formation of the landscape through historic farming methods.

A long term land management strategy will be put in place to ensure retention of ridge and furrow in a new field pattern sustainably managed and grazed by cattle and sheep to conserve its landscape character.

An indicative plan of Normandy Hill ridge and furrow is illustrated in Figure 3.7.

Locations

- Retained Ridge and Furrow area on Normandy Hill - to the western edge of KP1;
- Belts of retained Ridge and Furrow will also be incorporated into the wider green infrastructure network within wildlife corridors.

Size / Scale

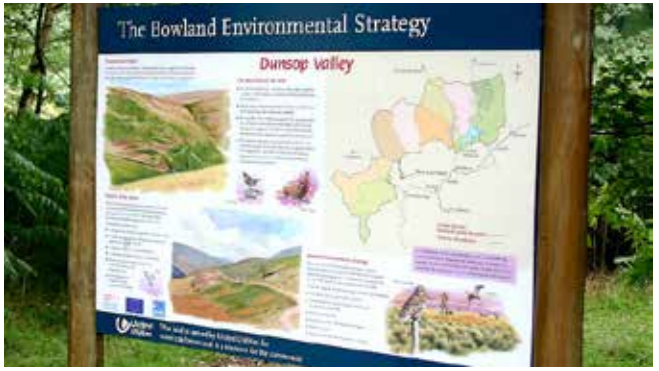
- In total across all phases approximately 17ha of Ridge and Furrow is to retained on Normandy Hill;
- Additional belts of retained Ridge and Furrow will be contained within the wildlife corridors.

Function

- Heritage and Archaeology conservation
- Habitat creation and GCN conservation
- Mown grassed pedestrian routes to provide connections to the wider green infrastructure network.
- Education through the provision of interpretation boards
- Provision of a green corridor adjacent to the retained Ridge and Furrow including:
  - Structural planting (appropriate hedgerow, scrub and woodland mixes) – outside of the retained ridge and furrow but serving to strengthen and enhance existing field boundaries, will be provided at the base of Normandy Hill.
  - Habitat enhancement and creation with new and existing GCN ponds and hibernacular.
  - Provision of pedestrian routes through the corridor with timber crossing points at intersections with SuDS features to facilitate GCN crossing.

Precedent - informal walking routes across hill.

Precedent - Green corridor with 'woodland' edges.



Precedent - educational signage

Fig. 3.7: Indicative plan of Normandy Hill interface between area of retained ridge & furrow and wildlife corridor

3.2.6 A428 Corridor

Character and Form

As a result of the proposed highway improvements the environment along the A428 corridor will be subject to change. It is essential that as part of the evolving character of this corridor a responsible approach to the stewardship of the existing green infrastructure is undertaken including preservation and enhancement of existing trees and hedgerows.

The landscape features will be incorporated into the corridor where they make a positive contribution to the overall environmental character. A process of replanting and replenishment will be undertaken to preserve the green character of the site edges as well as provide an attractive outlook for new development.

As part of the improvements to the corridor a new strategic cycle route will be provided as well as links into the SUE pedestrian circulation network. Therefore lighting design and consideration of the location and alignment of routes in relation to planting must be a key design consideration to ensure good visibility and safety. See indicative plan in Figure 3.8.

Fig 3.8: A428 Corridor - Indicative Layout Plan Extract

Precedent of cycle route. Cycle/ pedestrian route to be provided along northern side of A428.

Location

- Strip of retained enhanced landscape planting between A428 and KP1 residential area north of A428.
- Strip of landscape (retained, replenished & enhanced planting including hedgerows) between the A248 and the commercial development area south of the A428.

Size / Scale

- On the northern side of the A428: a belt of planting (including hedges, verges and trees) is to be minimum 5m deep between A428 and KP1 dwellings.
- On the southern side of the A428: the depth, shape and design of the landscape strip is to be confirmed in detail design, related to commercial proposals. The Regulatory Plan illustrates an indicative green hatch on the edge of the commercial parcel.

Function

- Screening with a mix of shrub and tree planting
- Habitat protection and enhancement
- Incorporation of the new strategic cycle route (on northern side of the A428).

Note regarding adoption:

- It is intended that the cycle / pedestrian route along the northern edge of the A428 corridor and the verge (with hedgerows and other landscape elements) are to be adopted by County Highways (Warwickshire County Council).

Structural landscape planting to site edges helps to screen dwellings.

Precedent - Combination of retained hedges and trees and proposed dense buffer planting along A428.

3.2.7 Structural Landscaping

Character and Form

Appropriate planting helps define the character and function of an area. Key areas of structural landscaping in the form of belts and pockets of tree and shrub planting will be provided to help provide definition and enhance biodiversity across KP1.

Such structural planting will be characterised by 'woodland' planting mixes that will vary in terms of their design focus depending on location and function.

The proposed mixes will form the backbone of initial planting but it is expected that these species will be supplemented by natural colonisation of appropriate species - including fruiting species such as Blackberry - over time.

Precedent - Structural landscaping - woodland mix.

Locations

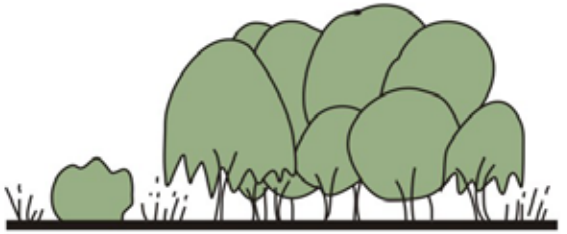
- Planting belts within the commercial areas to provide plot definition and screening;
- Planting within the residential areas and wildlife corridors which will provide a more open, varied and dynamic habitat including native broadleaf species with appropriate understorey which will allow views to filter through and access to the public for informal recreation;
- Buffer planting around infrastructure elements including the pumping station and substations which will comprise a dense block of native planting for screening, with limited access apart from when carrying out maintenance;
- Residential woodland planting will be provided to supplement the habitat creation within the wildlife corridors in addition to helping structure the street scene, framing key views and reinforcing local identity.
- Planting within the wider informal open space network will help define existing and retained field boundaries and provide enclosure to green spaces, in particular at the base of Normandy Hill.

Size / Scale

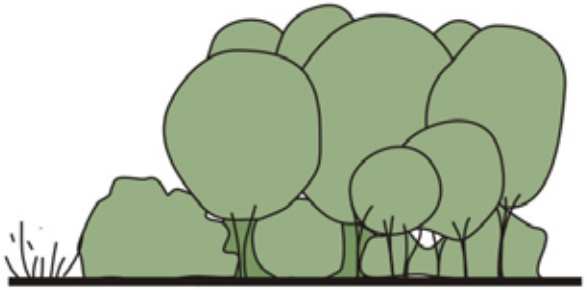
- Blocks on Normandy Hill to provide a minimum width of 10m to provide significant habitat.
- May be narrower in some areas when used for screening and plot definition.

Function & Features

- Habitat creation
- Plot definition
- Screening
- Visual amenity
- Informal recreation



Valley Woodland - native trees, some shrub planting, meadow edges. Tree species e.g. willow, alder, ash, oak, and poplar.



Woodland belt with dense shrub edge, native trees e.g. oak, ash, hornbeam, lime, cherry, holly and privet.

Fig 3.09 Illustration of woodland planting

3.2.8 SuDS Design Approach

Character and Form

The multifunctionality of the green infrastructure network mean that Sustainable Drainage Systems (SuDS) will be an important consideration and influence on the design of open space. This section sets out the design considerations in relation to green infrastructure with further details in Chapter 9, Technical Details (see 9.12 Foul & Surface Water Management Strategy). Full details are provided in the KP1 Surface and Foul Water Management Strategy.

SuDS features in KP1 will respect the sites drainage pattern and seek to protect, restore and enhance natural wet areas. Initiatives will also be adopted through residential design to reduce surface water run-off and improve water quality. The priority is to collect, treat and store storm water through measures that utilise green infrastructure whilst protecting residential amenity.

The SuDS network will facilitate the capture of rainwater in Water Sensitive Urban Design (WSUDS) features as close to source as possible. SuDS features will be designed to enhance the character of the local areas whilst integrating planting and hardscapes in accordance with the wider KP1 design.

WSUDS is a holistic approach to water management and urban design providing an opportunity to create places in harmony with water and deliver multiple benefits. Spaces are created that are sensitive to the needs of the natural water cycle and are attractive, functional and valued. The approach has the potential to manage flooding, water pollution and provide local sources of water. It brings together communities and a wide range of disciplines designing and managing the built and natural environments.

The following will be incorporated into the SuDS network:

- Incorporation of swales and SuDS features in the street corridors, with reference to the KP1 water management strategy;
- SuDS features at grade in communal spaces and courtyards to capture and treat excess runoff from roofs and the courtyard area.
- Provision of connections to convey water to SuDS features in open spaces or to storage for landscape irrigation.
- Permeable paving on shared and unadopted surfaces with filtering substrates to treat and store water for reuse.
- SuDs features will be chosen as appropriate from a palette of SuDS options including:
  - Swales - broad, shallow channels covered by grass and vegetation are designed for both dry or wet conditions and contribute to the wider green infrastructure network.
  - Ponds - basins with permanent pools of water. Acting as a SuDS feature, they also have a biodiversity and recreational value.
  - Filter Drains - These feature a trench filled with permeable material into which runoff is collected from the edge of the paved footway/cycleway, then stored and conveyed.
  - Permeable paving - Pavement construction is designed to allow rainwater to infiltrate through the hard surface into an underlying storage layer (where soil conditions allow).
  - Extended Detention Basins - These features are depressions designed to detain runoff for a period of time to meet both volume objectives and water quality criteria. They differ from wet ponds in that there is no large permanent pool of water in the basin.
  - Rain Gardens - Small garden areas which capture rainwater from roofs, assisting controlled infiltration or re-use for garden irrigation, vehicle washing and other non- potable applications.

Source control is an important consideration of the hard and soft landscape design to achieve the following impermeable area targets:

- Residential: 50%
- Employment: 75%
- Primary and secondary road corridors: 85%

Precedent - Balancing ponds/detention basins

Precedent - Urban Swale

3.2.9 Water design and management of risk

Management of Risk

As part of the design of water features consideration must be given to the associated risk management and mitigation.

The Common Law duty of care for a site operator to the public is to “take reasonable care”. This can be defined as “what the reasonable person would have foreseen as being necessary”. Therefore a responsible and considered view of risk assessment should be undertaken when locating and designing facilities at the SUE and - if required - to provide additional measures to help mitigate that risk.

The following should be taken into account in the design of water bodies:

- SuDS features will be predominantly dry - it is reasonable to expect in times of high water, people will stay out of / away from the water.
- Safe play within these dry or shallow SuDS features is to be expected in supervised conditions;
- GCN ponds are deeper (varying in depth from 1m to 2.5 to 3m depending on type) but several design features will be incorporated to maximise their safety:

- Proximity: where possible the ponds are to be set away from footpaths and widely used areas. Where close to paths or busy places then planting is to be used (including dense and thorny species) to keep people away from the edges.
- Visibility: the public must be made aware of the ponds either because they are visible from distance or - where screened by planting - signage is to be provided.
- Construction – New ponds will have shallow, sloping sides and no vertical edges to help with exit from the water.

In some cases the following may be required, however only where it is deemed necessary and appropriate:

- Signage and life saving equipment may be provided at key points to help mitigate areas of specific risk.
- Fencing may be provided but this should be undertaken following an assessment of risk.

Interaction with ponds should be actively discouraged to minimise disruption to the GCN population.

Precedent - Suds elements within residential areas

Precedent - Safe access and interaction with water

Precedent - Great Crested Newt pond

3.2.10 Private and semi-private space

Character and Form

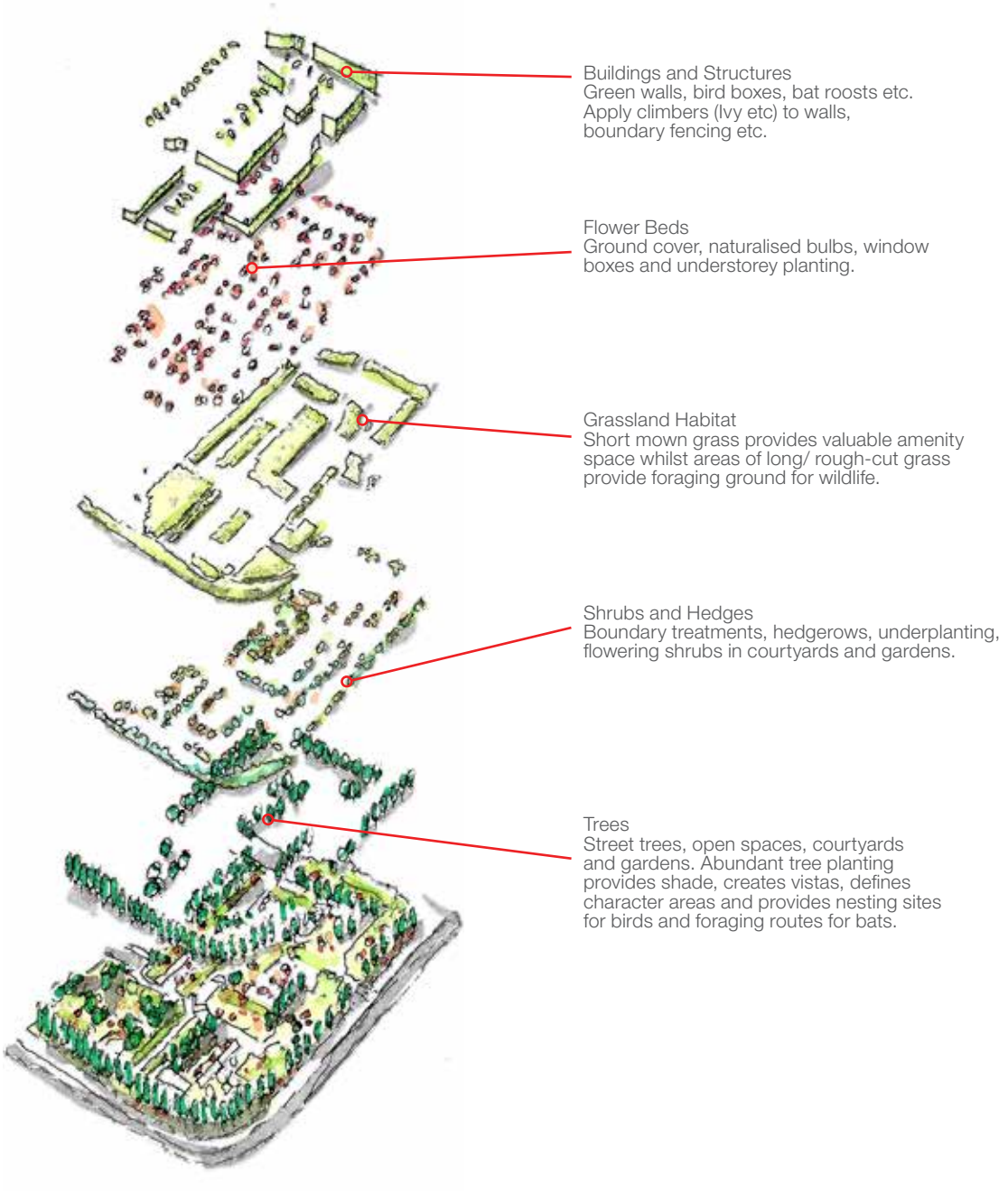
Private gardens supplement the formal and informal open space. Front gardens in particular make a valuable contribution to the street scene and help tie together a sense of uniformity and identity. Therefore, planting within these areas is an important consideration in the detailed design of residential parcels.

The following should be considered as part of residential parcel design:

- Planting in gardens and courtyard planting in residential areas should seek to supplement the green infrastructure network and contribute to habitat connectivity.
- The use of climbing plants at building facades, green 'living fence panels' and low level planting to ground floor units or next to garden walls.
- Trees are to be located within the courtyards themselves where possible to add seasonal colour.
- Trees in adjacent back gardens will be placed to have a visual impact over the garden fence.
- Planting stock in private and semi-private spaces will be partly drawn from a palette of native species and specifically include plants that have interest for local fauna.
- Planting within private gardens will include fruiting trees wherever possible.
- Planting types will maximise biodiversity, with shrub and herbaceous species selected to attract invertebrates and butterflies, and greened walls, climbers and trees to provide foraging habitat and nesting areas for birds.
- Habitat creation and wild garden elements should be incorporated into the proposals for the school to offer an additional valuable educational resource.

A layered approach to the private and semi-private spaces (see Figure 3.10) demonstrates how a diverse range of habitats and elements can be concentrated within relatively small residential areas and ensure that all elements within the Green Infrastructure are made to work hard and contribute to the overall quality of open space.

Fig 3.10: A Layered Approach to Open Space Provision - Diagram



Precedents of Landscapes in Semi-Private Amenity Space

Landscape on the threshold of private space / public space at Accordia, Cambridge

Accordia, Cambridge

Ingress Park. Kent

3.3 Formal Open Space

Character and Form

The formal open space in KP1 provides sports pitches and recreational uses as well as formal children's play areas. It has an important role in facilitating community interaction and therefore is a fundamental part of the Green Infrastructure network.

3.3.1 Central Open Space

KP1 includes a key area of formal open space, referred to as the Central Open Space. This provides a formal park landscape that will include play and sporting facilities for the community, see Figure 3.11 - an indicative plan of this space. It is focused on the provision of sports pitches and therefore will comprise a formal open grass area that will be subdivided by planting, footpaths and habitats. This will create a series of spaces compatible with a variety of possible uses - from informal play through to a flexible arrangement of formal sports pitches.

Formal tree planting will help strengthen the structure of the space and distinguish it from the interconnected, informal Wildlife Corridors. Species selection will be determined in discussion with the local authority but those that provide an attractive form as well as wider wildlife and food production benefits such as Sweet Chestnut should be considered.

It also includes a combined LEAP and NEAP play area and will potentially include a pavilion (linked to the Dollman Farm area) for use at sporting events as well as providing a focus for community interaction (see Chapter 6 on Mixed Use for more details).

The potential to accommodate sports pitches will need to consider the layout and alignment of roads and footpaths through the open space to ensure that they are compatible."

Location

- The location of the central formal open space is fixed on the Regulatory Plan.

Size/scale

- Broad area of central formal open space is fixed on the Regulatory Plan.

Function & Features:

- Formal sports provision: sports pitches
- Play area: Combined NEAP/LEAP, location fixed on Regulatory Plan
- Foot/cycle paths to provide access to and through the space.
- Community sports building to accommodate changing rooms / pavilion (potential reuse of brick L-shaped barn at Dollman Farm).
- Formal tree planting including an avenue of broadleaf trees along the main north- south pedestrian route;
- Retention of existing and provision of new hedgerows to add structure and screening to the edges of the open space and ensure privacy for adjacent residential properties;
- Retention of existing landscape assets to integrate the open space with the wider Green Infrastructure network, in particular with the wildlife corridors;
- Incorporation of ecological habitat including retention of an existing GCN pond and associated wildlife corridor connections.

The potential to accommodate sports pitches will need to consider the layout and alignment of roads and footpaths through the open space to ensure that they are compatible.

Precedent - formal Park layout.

Precedent - Avenue tree planting

Precedent - sports provision

Fig 3.11: Indicative plan of the central open space layout

note: design shown is indicative only and subject to development during associated Reserved Matters application.

3.3.2 Play Areas

Character and Form

Play, and the provision of facilities for children and young people, is a key element of a successful place. KP1 incorporates both formal play provision as well as a strategy of informal 'play on the way' that runs throughout the informal open spaces.

Formal play areas are to be provided to meet the play requirements of the OPA and to ensure that all homes are in the required walking distance of a LEAP and NEAP.

The position of the play areas has been refined within the KP1 design to include:

- **A combined LEAP/NEAP** located within the central open space to provide a high quality 'destination playground' that will maximise the potential usage of the formal play facilities.

- **An informal natural play area** within Dollman Common which is provided as a substitute for the first LEAP.

Additional play and recreation elements are to be located throughout the development in the form of informal play elements and pocket parks. Informal play can take many forms but could be as simple as a felled tree, earth mounds, rocks etc. - all intended to encourage imagination and freedom in play.

The evolving provision of play across the phase with regards design standards is discussed further in Chapter 9.

Figure 3.12 presents an indicative plan for the play area in the central open space.

Locations

- LEAP/NEAP in the Central Open Space.

- Informal natural area for play within Dollman Common (LEAP equivalent).

- Informal play and pocket park locations to be developed alongside detailed residential layouts.

- Position of play areas to have regard to:
  - Proximity of waterbodies and SuDS features;
  - Compatibility with wildlife corridors;
  - Proximity to pedestrian and cycle routes

Size / Scale

- Formal Play: Combined LEAP/NEAP comprising:
  - 1400sqm activity area;
  - 30m buffer zone to boundary of nearest dwelling.

- Informal natural area for play to develop alongside detailed residential plot layouts.
  - Activity area of at least 400m2;
  - Minimum 10m buffer zone to boundary of nearest dwelling.

- Formal Play: LEAP comprising:
  - 400sqm activity area;
  - 20m buffer zone to habitable room façade of nearest dwelling;
  - 10m buffer zone to boundary of nearest dwelling.

- Informal Play to develop alongside detailed residential plot layouts.

Precedent - Caldecott Park, Rugby

Play areas in landscape

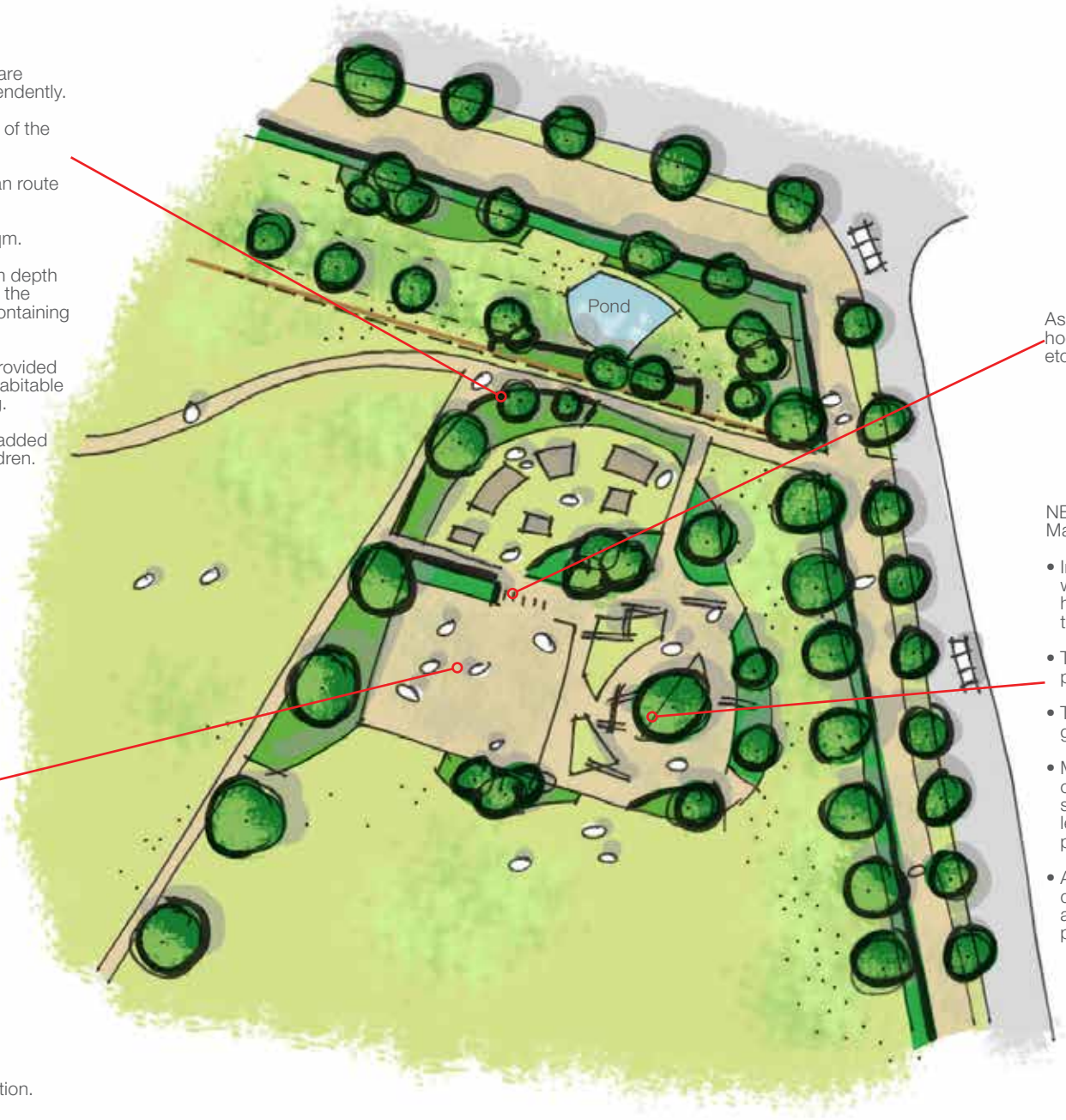
Precedent - Fairfield Park

Fig 3.12: Indicative plan of the play area in the central open space

The provision of LEAPs and NEAPs in the same location has a number of advantages including the ability to provide for a greater age range of children and increase 'family involvement'.

LEAP
Main characteristics:

- Intended primarily for children who are beginning to go out and play independently.
- To be within 5 minutes walking time of the child's home.
- To be positioned beside a pedestrian route that is well used.
- The minimum activity zone is 400sqm.
- A buffer zone of 10 metres minimum depth must separate the activity zone and the boundary of the nearest property containing a dwelling.
- A minimum of 20 metres must be provided between the activity zone and the habitable room façade of the nearest dwelling.
- To be fenced and gated to provide added security and safety for younger children.



Associated cycle parking hoops, seating, bins etc to be provided.

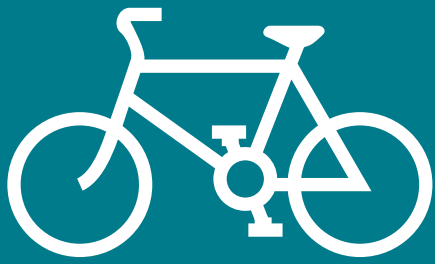
NEAP -
Main characteristics:

- Intended primarily for use by older children, who have the freedom to range further from home - within 15 minutes' walking time of the child's home.
- To be positioned beside a well used pedestrian route.
- To occupy a well drained site, with both grass and hard surfaced areas.
- Minimum activity zone is 1000sqm - to comprise an area for play equipment and structures, and a hard surfaced area of at least 465 sq m (the minimum needed to play 5-a-side football).
- A buffer zone of 30 metres minimum depth must separate the activity zone and the boundary of the nearest property containing a dwelling.

465sqm (minimum) hard surfaced area to form part of the NEAP to provide opportunity for ball-sports, skateboarding etc.

note: design shown is indicative only and subject to development during associated Reserved Matters application.

Chapter 4
Movement & Access



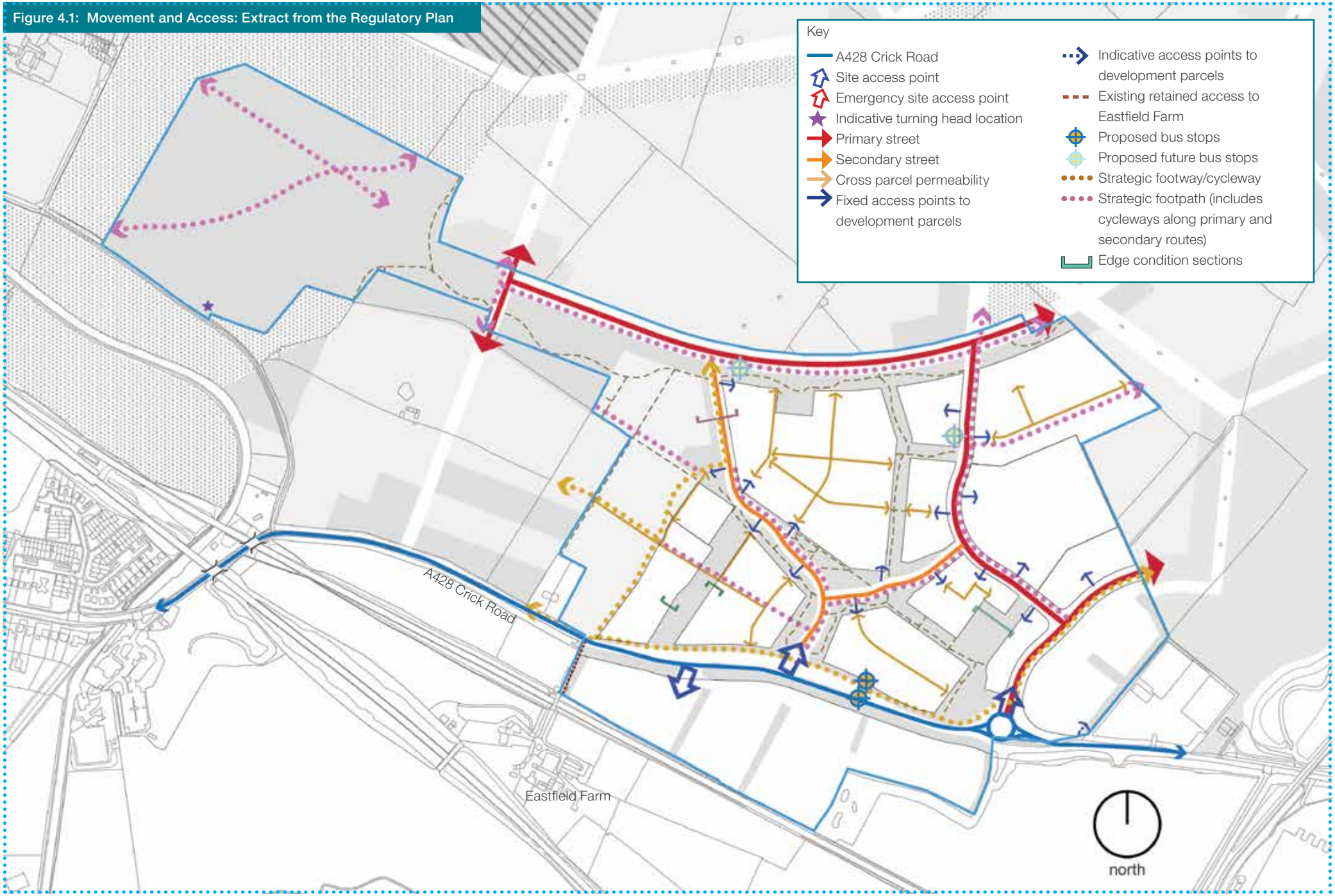
Chapter 4: Mandatory Movement and Access Design Fixes

The mandatory design fixes are set out below and shown on the Regulatory Plan. The Compliance Checklist in Appendix 1 presents a complete list of design-fix headings from the whole Design Guide.

- 4.2 Site access points: locations as shown on the Regulatory Plan and highlighted in Figure 4.1.
- 4.4 Cycle & pedestrian network: leisure routes for walking and cycling as shown on the Regulatory Plan and highlighted in Figure 4.5.
- 4.4 Bus stops: number of KP1 bus stops is a fix as shown on the Regulatory Plan and highlighted in Figure 4.5, precise location to be determined in detail design.
- 4.5 Street hierarchy: locations and types of streets as shown on the Regulatory Plan and highlighted in Figure 4.6 Street Hierarchy.
- 4.5 Design of streets: to accord with the street-type tables and street-type sections presented in Chapter 4.
- 4.7 Vehicular and cycle parking: as per standards summarised in this chapter and with greater detail provided in Chapter 9: Technical Details.

Note: the design details of some streets may be refined during the technical approval / adoption process.

Figure 4.1: Movement and Access: Extract from the Regulatory Plan



4.1 Introduction

This chapter of the Design Guide builds on the Movement and Access principles set out in the Rugby Radio Station SUE Outline Planning Application and Parameter Plans.

The overarching vision for the Rugby Radio Station SUE is to create a network of safe and secure streets forming walkable neighbourhoods. A truly mixed use development will encourage people to undertake many of their day to day trips within the site, such as trips to work, education, day-to-day shopping and community uses. By providing a comprehensive network of attractive, safe and easily legible cycle and pedestrian routes, a modal shift away from the private car to more sustainable forms of transport will be achieved. This shift will reduce environmental impact, promote healthy living and support the creation of a vibrant community life, based on active streets and accessible facilities.

This chapter of the Design Guide illustrates how the development of KP1 will build on the vision set out in the Outline Planning Application. It sets out how the KP1 site is to be accessed and how the network of internal streets is to be arranged around a necklace of mixed use destinations within the site. The cycle, pedestrian and bus network is illustrated and the street network and hierarchy of streets is explained. Street sections and plans illustrate how various street types are to be laid out, showing interfaces between footways, carriageways and landscape features such as grass verges and swales. Finally, this chapter illustrates key edge sections, explaining how residential frontages will address streets and a variety of green spaces.

Reserved matters applications for residential parcels should where appropriate, clearly state which streets / roads, and /or other areas, will be put forward for adoption by the Highway Authority.

4.2 Site Access Points

Points of vehicular access to KP1 are illustrated on the Regulatory Plan and Fig. 4.2, below. Vehicular access to the KP1 will be from two new junctions along the A428 Crick Road:

- One access point on the northern side of the A428 to serve the majority of KP1.
- One access point to serve the commercial plots on the southern side of the A428.
- An additional access from the A428 into the secondary street network within KP1 (as approved under a separate planning application (R14/2356).

There will also be a number of pedestrian and cycle access points such as routes to DIRFT in the east and along the A428 Crick Road.

Fig 4.2: Site Access Plan

In addition to site access points an indicative location for a turning head is illustrated. The turning head will be provided to allow vehicles to turn as Moors Lane will be stopped up at this point. The turning head is required so that any vehicles moving along this section of Moors Lane can turn back and return to the A428.

4.3 Connecting the Assets

A number of community assets will be spread across the KP1 site. Beginning in the west, these will include a new area of open space providing sports facilities and other amenities, a mixed use development around the retained Dollman Farm buildings, a new play space, and finally in the east, a new primary school which will link to another local centre in a future phase of the SUE.

The assets will be connected by a safe network of streets and pedestrian / cycleways as described in this chapter. These assets will give a natural distinctiveness and community focus to the development and are explored in more detail in the Green Infrastructure (chapter 3) and Mixed Uses Built Form (chapter 6).

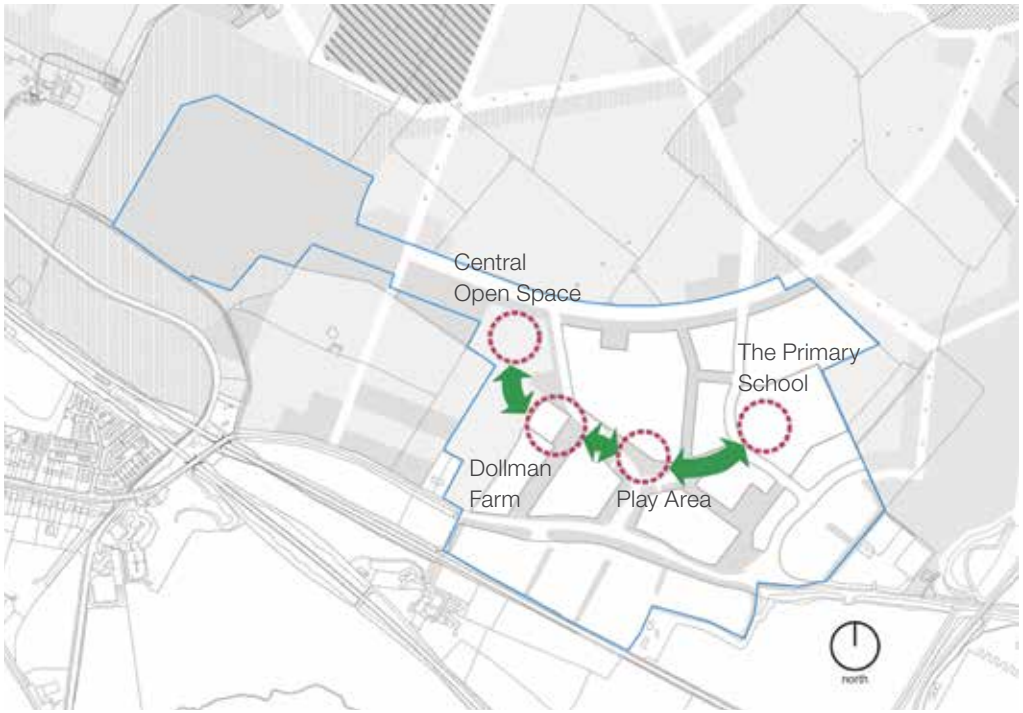


Fig 4.3: Connecting the Assets

4.4 Cycle, Pedestrian and Bus Network

A network of pedestrian and cycle routes (or a combination of both) will connect KP1 with the wider network. Providing safe routes will allow the development to connect key surrounding destinations such as the DIRFT and Rugby town centre. For ease of movement, cycle routes are to follow contours wherever possible, and adequate cycle parking must be provided, in accordance with established local authority standards. The fundamental principle is that KP1 will be a permeable network of streets, pathways and routes with a limitation of dead ends. Combined cycle and footpaths must be a minimum of 3m width.

A bus service will serve the site, running along the A428 Crick Road. A bus stop is proposed within this phase and the diagram adjacent shows this will be reachable by most within a 5 minute walk. As future phases progress, the bus routes will enter into the site and through KP1. The exact position of the bus stops will be agreed with the Transport Review Group. Bus stops will include provision for cycle parking and seating.

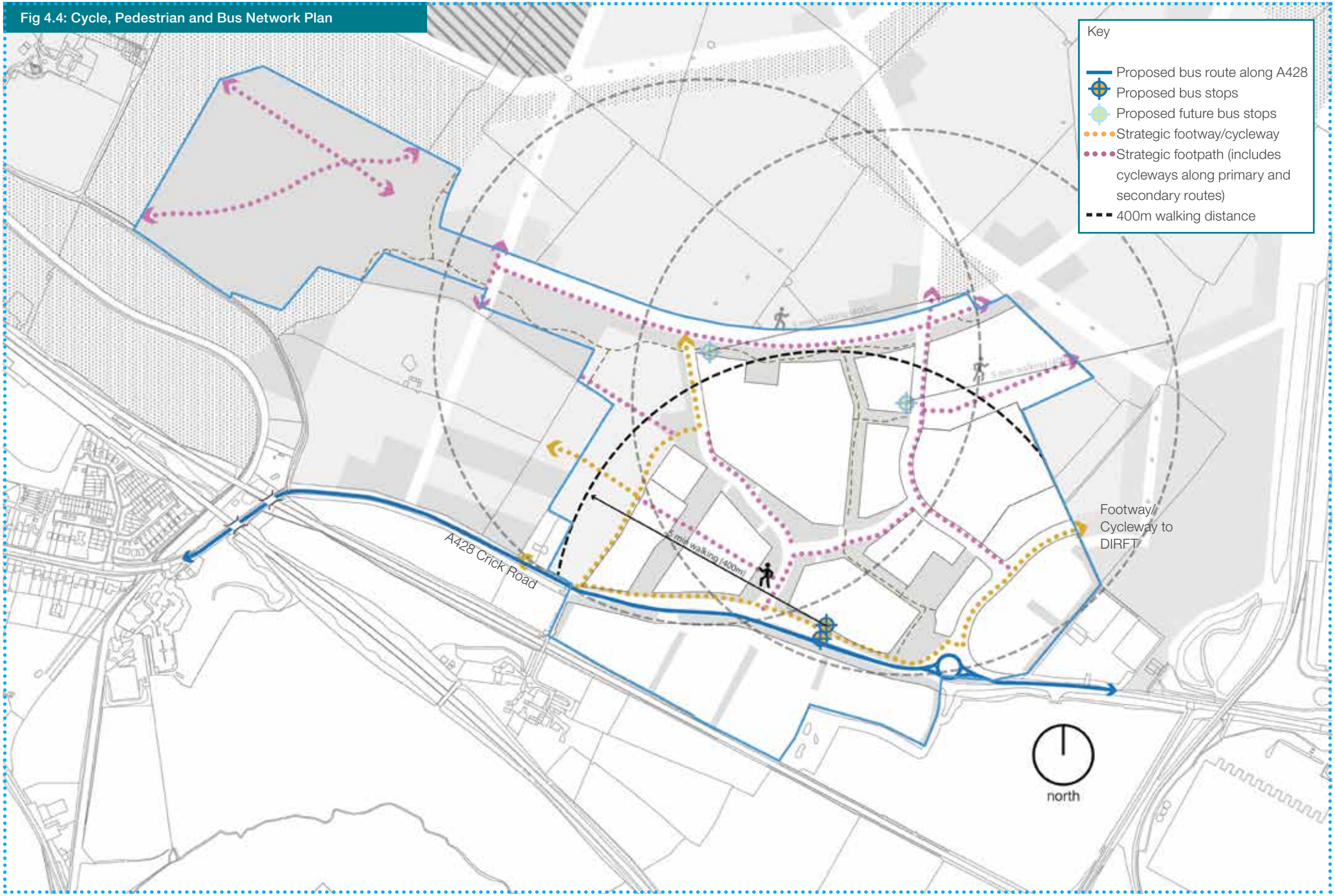
Proposed Strategic Footpaths and Footway / Cycleways

The proposed strategic non-vehicular routes within KP1 build upon those set out in the Outline Application Access and Movement Parameter Plan. Figures 4.1 and 4.5 illustrate the path of proposed strategic footpaths and footways/cycleways. Some sections of these routes run through green infrastructure, these are elements running through green space are highlighted on the Regulatory Plan. Other sections of these routes will be accommodated as part of the street corridors running thorough development parcels. The Regulatory Plan illustrates street types and related street sections in 4.5 show how footways, and footway/cycleways are provided within the highway corridor.

For further details regarding cycle, pedestrian and bus network refer to:

- 4.5 Street Hierarchy, including street sections illustrating accommodation of footpaths and footway/cycleways;
- 9.4 Public Transport; and
- 9.5 Cycling and Walking.

Fig 4.4: Cycle, Pedestrian and Bus Network Plan



4.5 Street Hierarchy

KP1 is designed to provide a well-connected network of streets of different character within the site. Variety in character and degree of enclosure of streets will be key to ensuring legibility and identity. The street design has evolved in conjunction with the site-wide green infrastructure. The hierarchy of streets is introduced here, and illustrated opposite in Fig. 4.6. Further detail for each street type is presented on the following pages with tabulated summaries and illustrations including sections.

Primary Streets

There will be a number of primary streets in KP1. On the eastern side of KP1 a primary street will connect a proposed new roundabout on the A428 Crick Road with the SUE. This street will have varying conditions because it passes a number of land uses including commercial, education and residential land parcels.

Another primary street, running along the northern edge of KP1, will connect the site from east to west. A small section of the future C-Station Avenue will connect the east-west primary route to future phases, and eventually, to the C-station building in the centre of the SUE site.

Primary streets will have dedicated cycle and footpaths alongside them, and will accommodate bus routes. They will be lined with trees and wide grass verges with swales alongside.

Secondary Streets

Two secondary streets will dissect the residential development parcels of KP1. These streets will function as distributor routes however they have been designed as neighbourhood streets with direct access to homes. In common with the Primary streets, they will also be tree lined with wide grass verges and, in part, will have swales running alongside them. Secondary streets will have cycle and footpaths alongside them.

Cross-Parcel Permeability

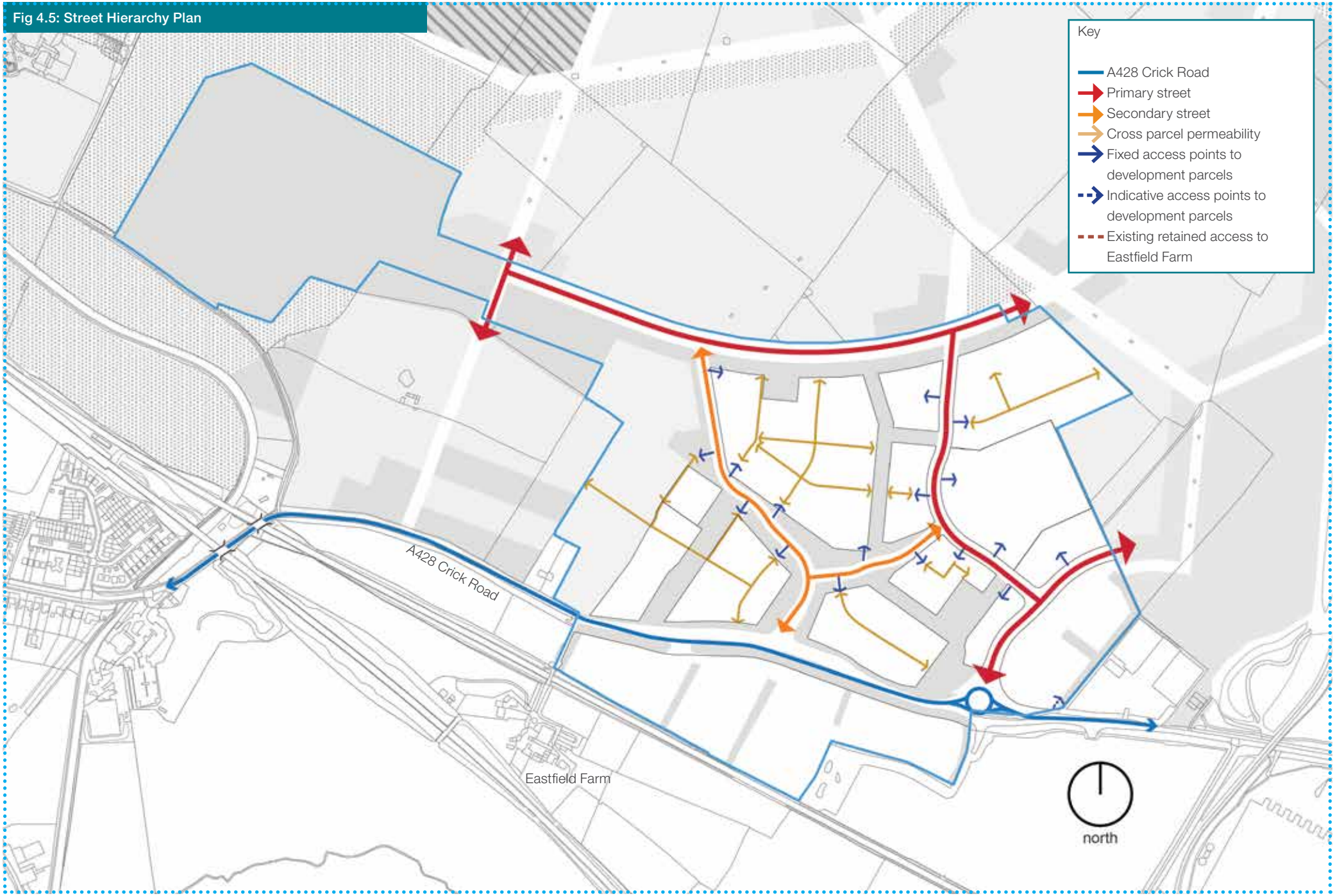
Individual development parcels will provide cross-parcel permeability through a network of tertiary streets and pedestrian / cycle routes. The cross-parcel permeability routes identified on the Regulatory Plan and in Figure 4.5 will be delivered as part of this network. Additional tertiary streets will be provided to serve dwellings and other uses within KP1. The location and layout of the tertiary street network will follow the Plot Layout Rules set out in chapter 5.3.

Typically, tertiary streets will only be used by people living or visiting that area, and will therefore be narrower and less formal in character than secondary streets. Longer tertiary streets will be tree lined on one side and could contain areas of on-street parking. They must contain a variety of traffic calming measures to increase safety for pedestrians and cyclists. Short tertiary streets may have a dropped kerb line and no road markings to reduce speeds and allow for pedestrian priority.

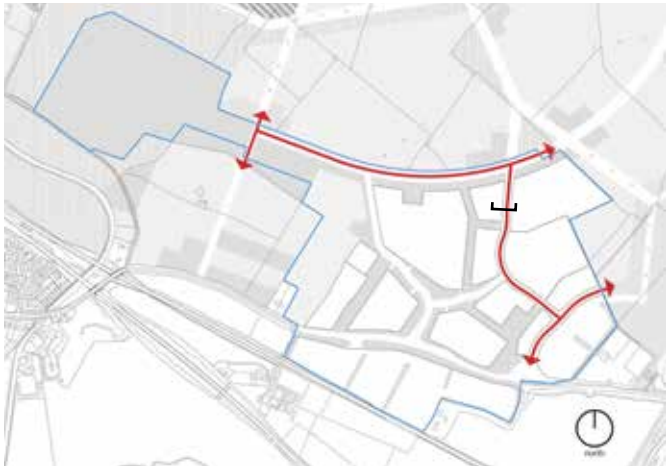
Tertiary Streets as Spaces

The lowest order streets can also create public spaces with shared surfaces, landscape features and low vehicular speeds.

Fig 4.5: Street Hierarchy Plan



4.5.1 Primary Street 1

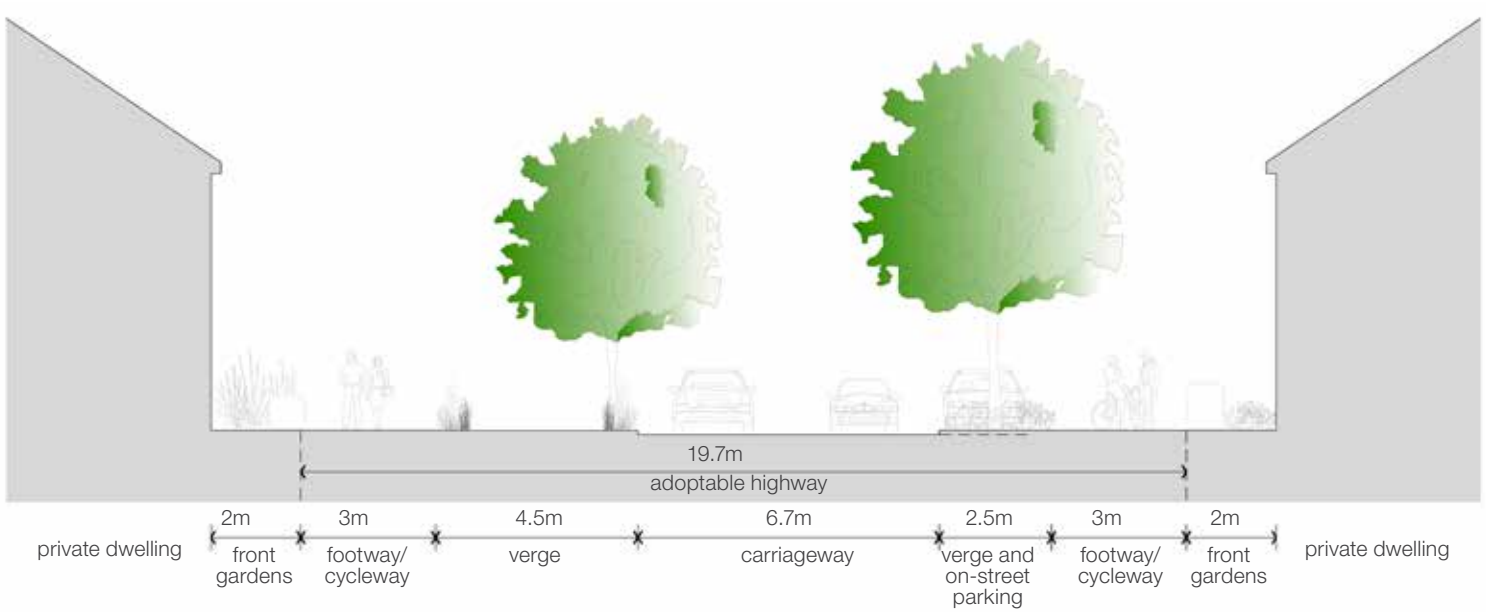


Key Plan

Primary Streets	
Maximum design speed	30mph
Access	
Junction - minimum spacing	30m
Junction - minimum visibility	48m
Junction radius	6 -15m
Direct vehicular access to properties	no
Street Landscaping	
Verge width	2.5 - 4.5m
Street trees	yes
Planting palette	yes
SuDS/swales	no

Highway Features	
Width of adoptable highway	19.7m
Minimum carriageway width	6.7m
Footway/Cycleway	3m
Bus access	yes
On-Street parking	yes
Traffic-calming measures	Yes
Statutory undertaker provision	no
Road markings	yes
Service strip	no
Street lighting	yes

Illustrative View



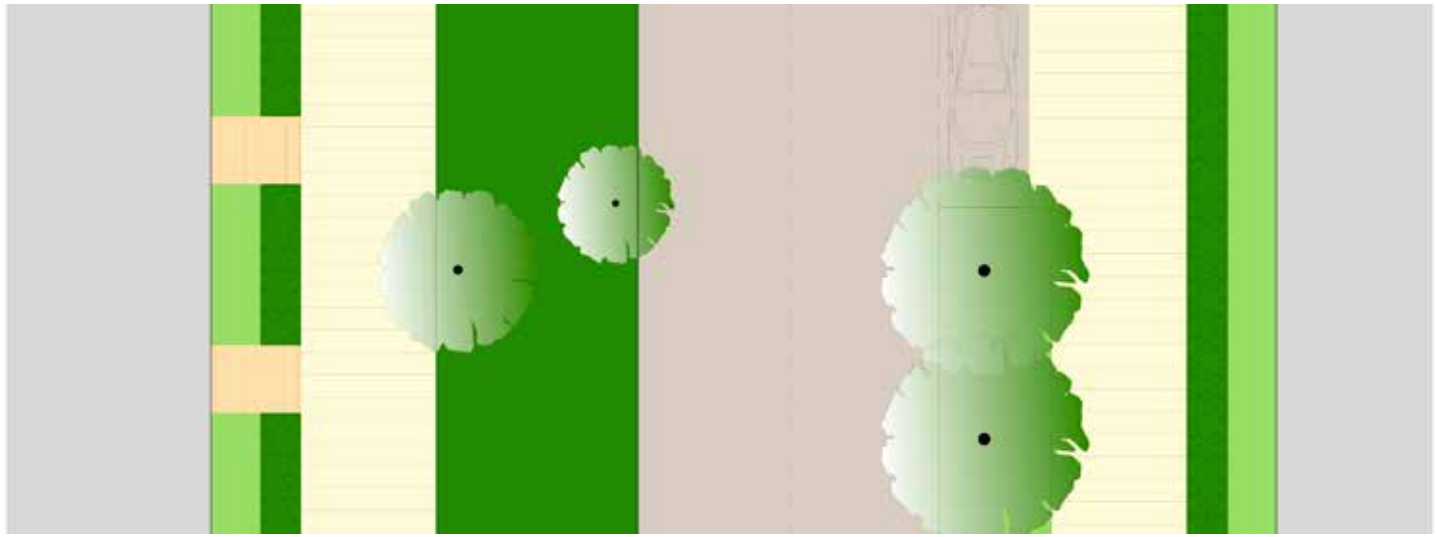
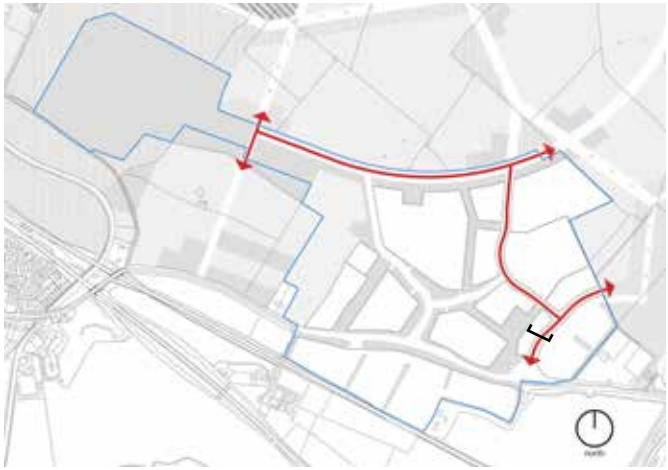


Fig 4.6: Primary Street 1 Section and Plan

Note: Example cross section.

Note: Streets to be self-calming due to the horizontal alignment.

4.5.2 Primary Street 2

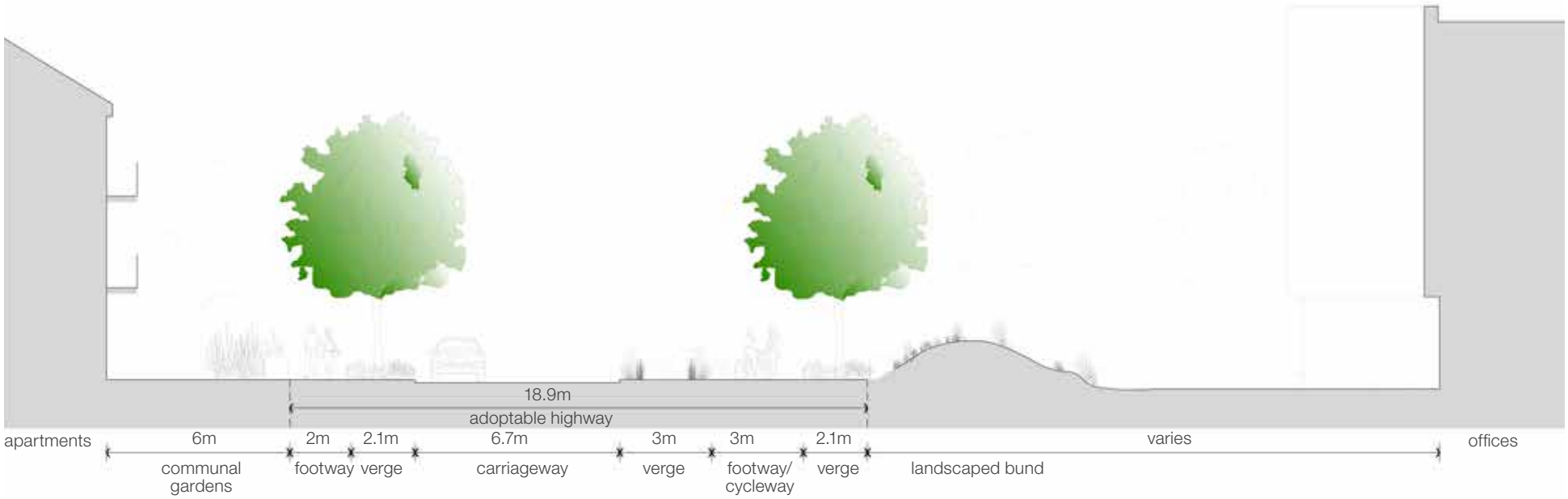


Key Plan

Primary Streets	
Maximum design speed	30mph
Access	
Junction - minimum spacing	30m
Junction - minimum visibility	48m
Junction radius	6 -15m
Direct vehicular access to properties	no
Street Landscaping	
Verge width	2.1- 3m
Street trees	yes
Planting palette	yes
SuDS/swales	no

Highway Features	
Width of adoptable highway	18.9m
Minimum carriageway width	6.7m
Footway/Cycleway	2 - 3m
Bus access	yes
On-Street parking	no
Traffic-calming measures	yes
Statutory undertaker provision	no
Road markings	yes
Service strip	no
Street lighting	yes

Illustrative View



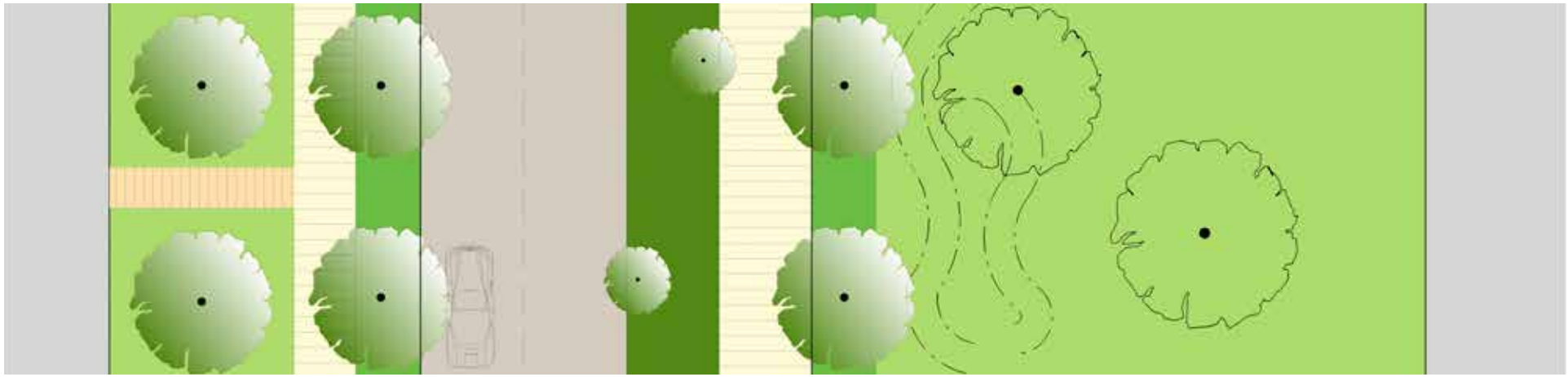
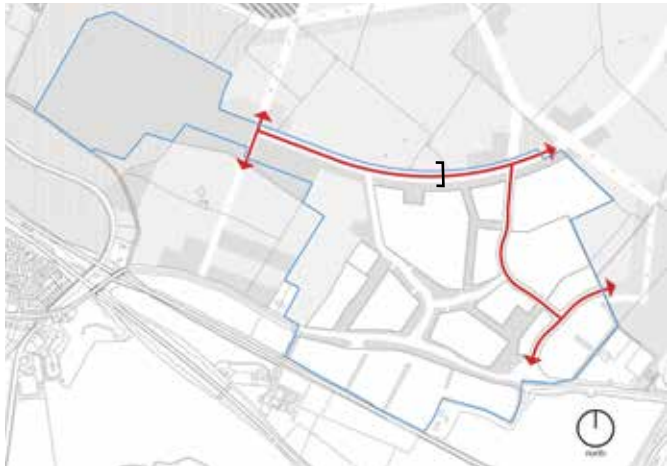


Fig 4.7: Primary Street 2 Section and Plan

Note: Example cross section.

Note: Streets to be self-calming due to the horizontal alignment.

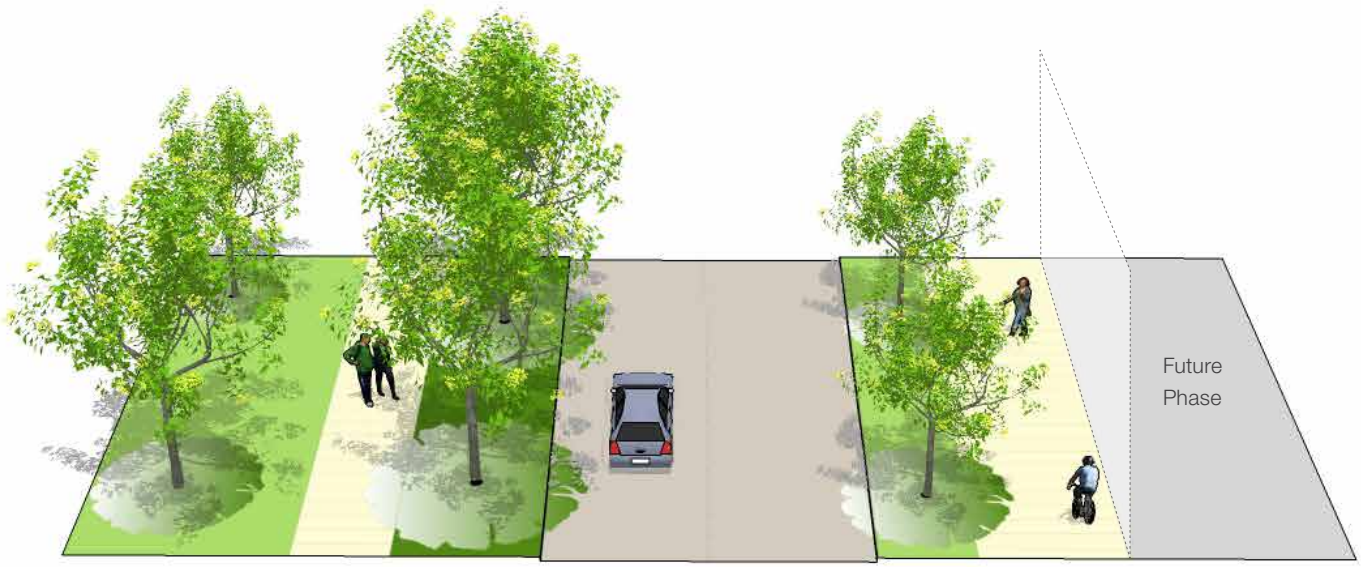
4.5.3 Primary Street 3



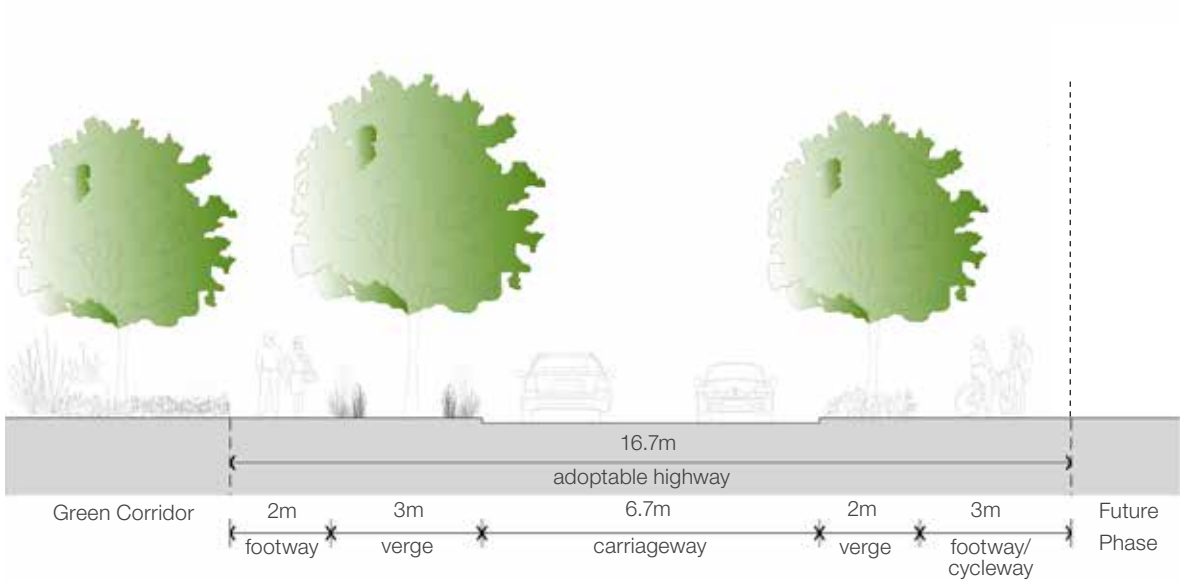
Key Plan

Primary Streets	
Maximum design speed	30mph
Access	
Junction - minimum spacing	30m
Junction - minimum visibility	48m
Junction radius	6 - 15m
Direct vehicular access to properties	no
Street Landscaping	
Verge width	2 - 3m
Street trees	yes
Planting palette	yes
SuDS/swales	no

Highway Features	
Width of adoptable highway	16.7m
Minimum carriageway width	6.7m
Footway/Cycleway	2 - 3m
Bus access	yes
On-Street parking	no
Traffic-calming measures	yes
Statutory undertaker provision	no
Road markings	yes
Service strip	no
Street lighting	yes



Illustrative View



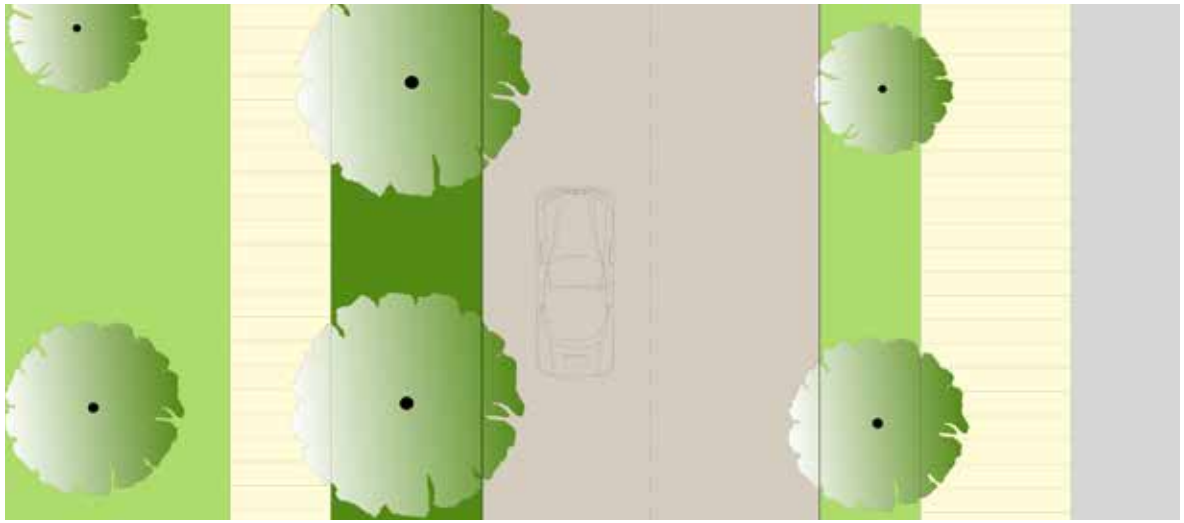


Fig 4.8: Primary Street 3 Section and Plan

Note: Example cross section.
Note: Streets to be self-calming due to the horizontal alignment.

4.5.4 Secondary Street

Key Plan

Secondary Streets	
Maximum design speed	20mph
Access	
Junction - minimum spacing	30m
Junction - minimum visibility	33m
Junction radius	6 - 8m
Direct vehicular access to properties	yes
Street Landscaping	
Verge width	1.5 - 4m
Street trees	yes
Planting palette	yes
SuDS/swales	no

Highway Features	
Width of adoptable highway	15.5-18m
Minimum carriageway width	6m
Footway/Cycleway	2 - 3m
Bus access	no
On-Street parking	no
Traffic calming measures	yes
Statutory undertaker provision	no
Road markings	yes
Service strip	no
Street lighting	yes

Illustrative View

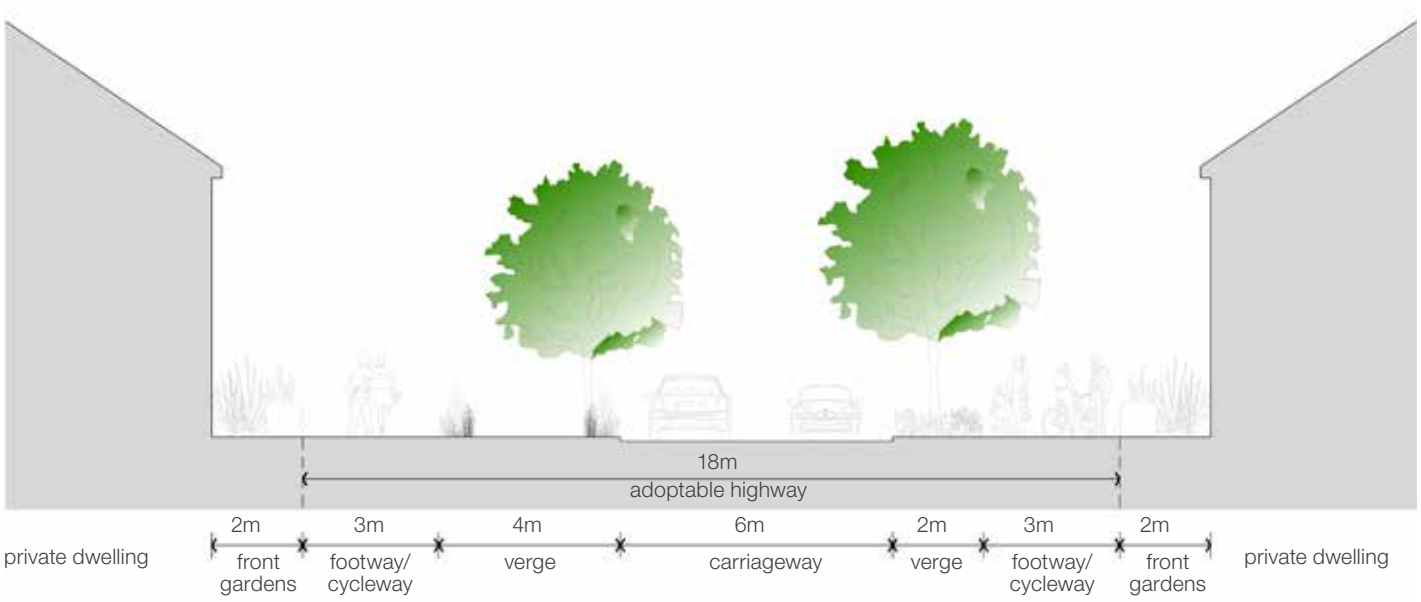


Fig 4.9: Secondary Street Section and Plan

Note: Example cross section.

Note: Streets to be self-calming due to the horizontal alignment.

4.5.5 Tertiary Street 1

Key Plan

Tertiary Streets	
Maximum design speed	20mph
Access	
Junction - minimum spacing	30m
Junction - minimum visibility	33m
Junction radius	6 - 8m
Direct vehicular access to properties	yes
Street Landscaping	
Verge width	1.5m
Street trees	yes
Planting palette	yes
SuDS/swales	To be determined within detailed design

Highway Features	
Width of adoptable highway	To be agreed at detailed design stage
Minimum carriageway width	5.1m
Footway/Cycleway	(shared surface street)
Bus access	no
On-Street parking	no
Traffic-calming measures	yes
Statutory undertaker provision	no
Road markings	yes
Service strip	no
Street lighting	yes

Illustrative View

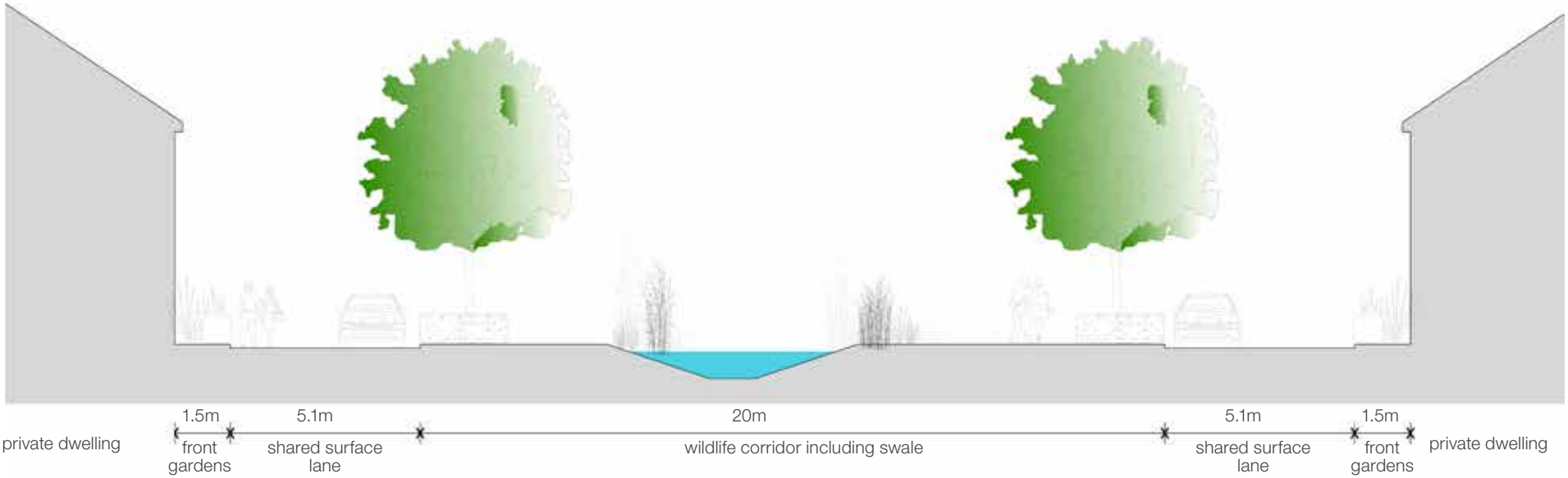


Fig 4.10: Tertiary Street 1 Section and Plan

Note: Example cross section.

Note: Streets to be self-calming due to the horizontal alignment.

4.5.6 Tertiary Street 2

Key Plan

Tertiary Streets	
Maximum design speed	20mph
Access	
Junction - minimum spacing	30m
Junction - minimum visibility	33m
Junction radius	6 - 8m
Direct vehicular access to properties	yes
Street Landscaping	
Verge width	1.5m
Street trees	yes
Planting palette	yes
SuDS/swales	To be determined within detailed design

Highway Features	
Width of adoptable highway	9.3m
Minimum carriageway width	4.8m
Footway	1.5 - 3m
Bus access	no
On-Street parking	no
Traffic-calming measures	yes
Statutory undertaker provision	no
Road markings	yes
Service strip	no
Street lighting	yes

Illustrative View

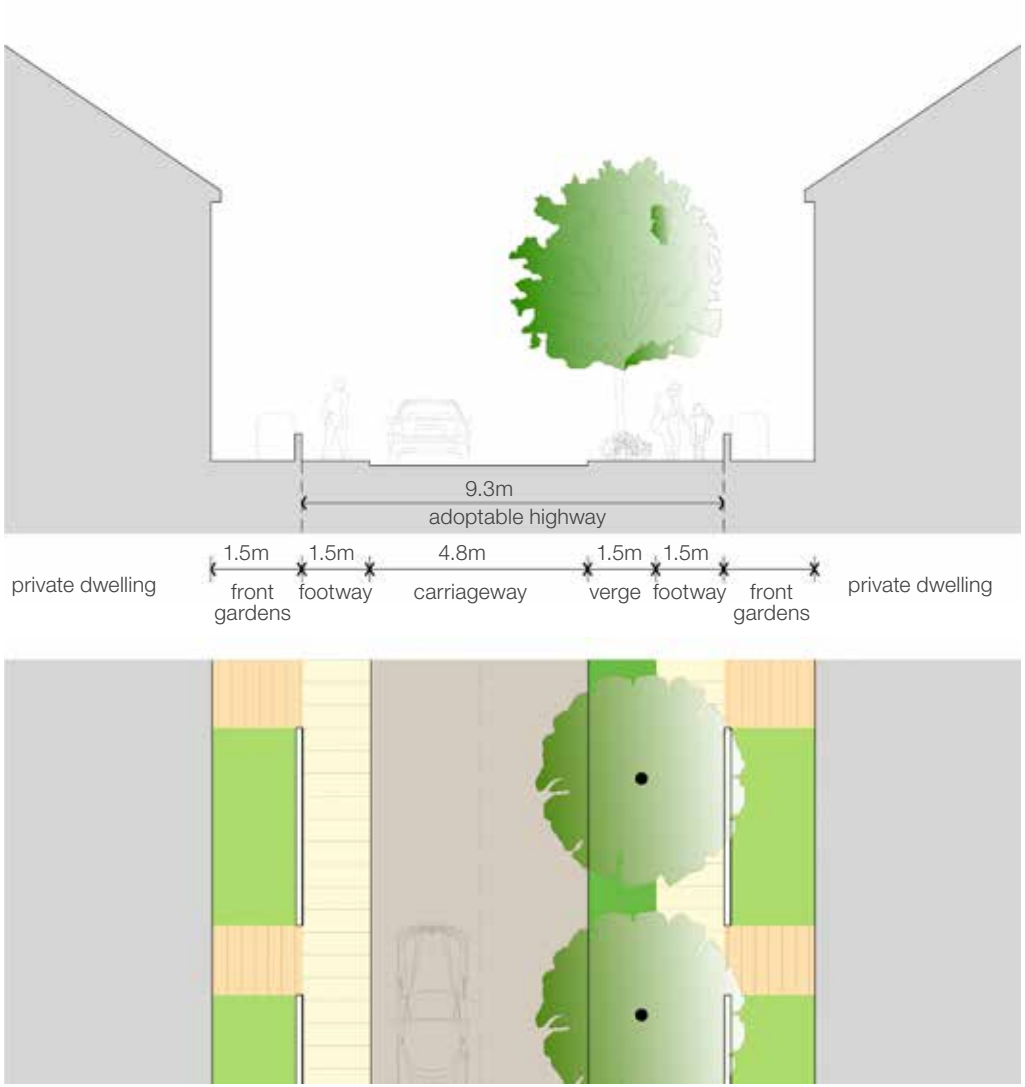


Fig 4.11: Tertiary Street 2 Section and Plan

Note: Example cross section.

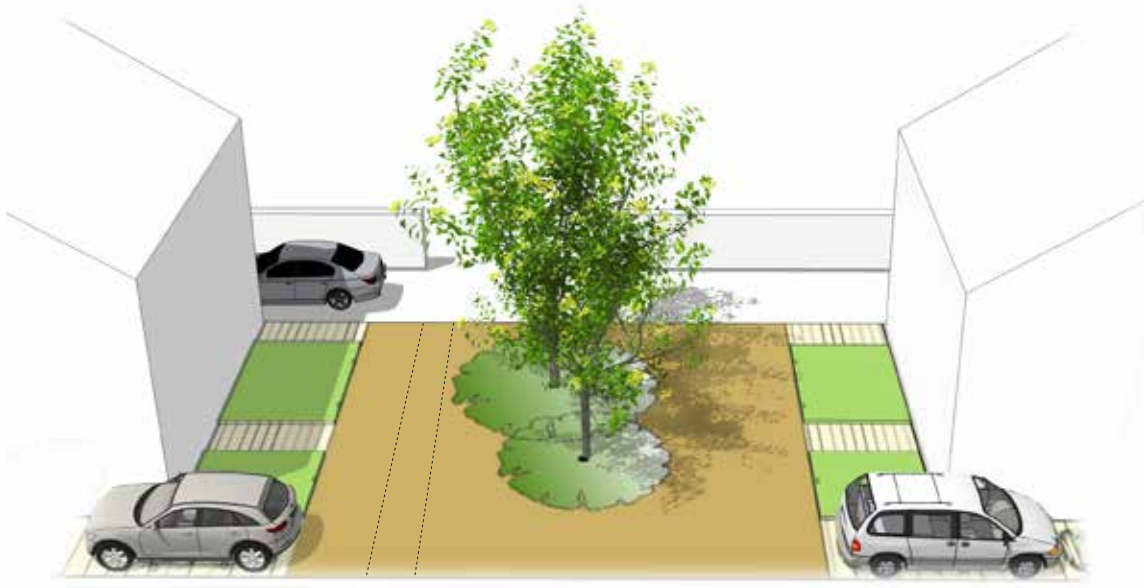
Note: Streets to be self-calming due to the horizontal alignment.

4.5.7 Tertiary Street 3

Key Plan - indicative location for tertiary street 3 sections

Tertiary Streets	
Maximum design speed	20mph
Access	
Junction - minimum spacing	30m
Junction - minimum visibility	33m
Junction radius	6 - 8m
Direct vehicular access to properties	yes
Street Landscaping	
Verge width	1.5m
Street trees	yes
Planting palette	yes
SuDS/swales	To be determined within detailed design

Highway Features	
Width of adoptable highway	To be agreed at detailed design stage
Minimum carriageway width	4.8m
Footway/Cycleway	(shared surface street)
Bus access	no
On-Street parking	no
Traffic-calming measures	yes
Statutory undertaker provision	no
Road markings	yes
Service strip	1m
Street lighting	yes



Illustrative View

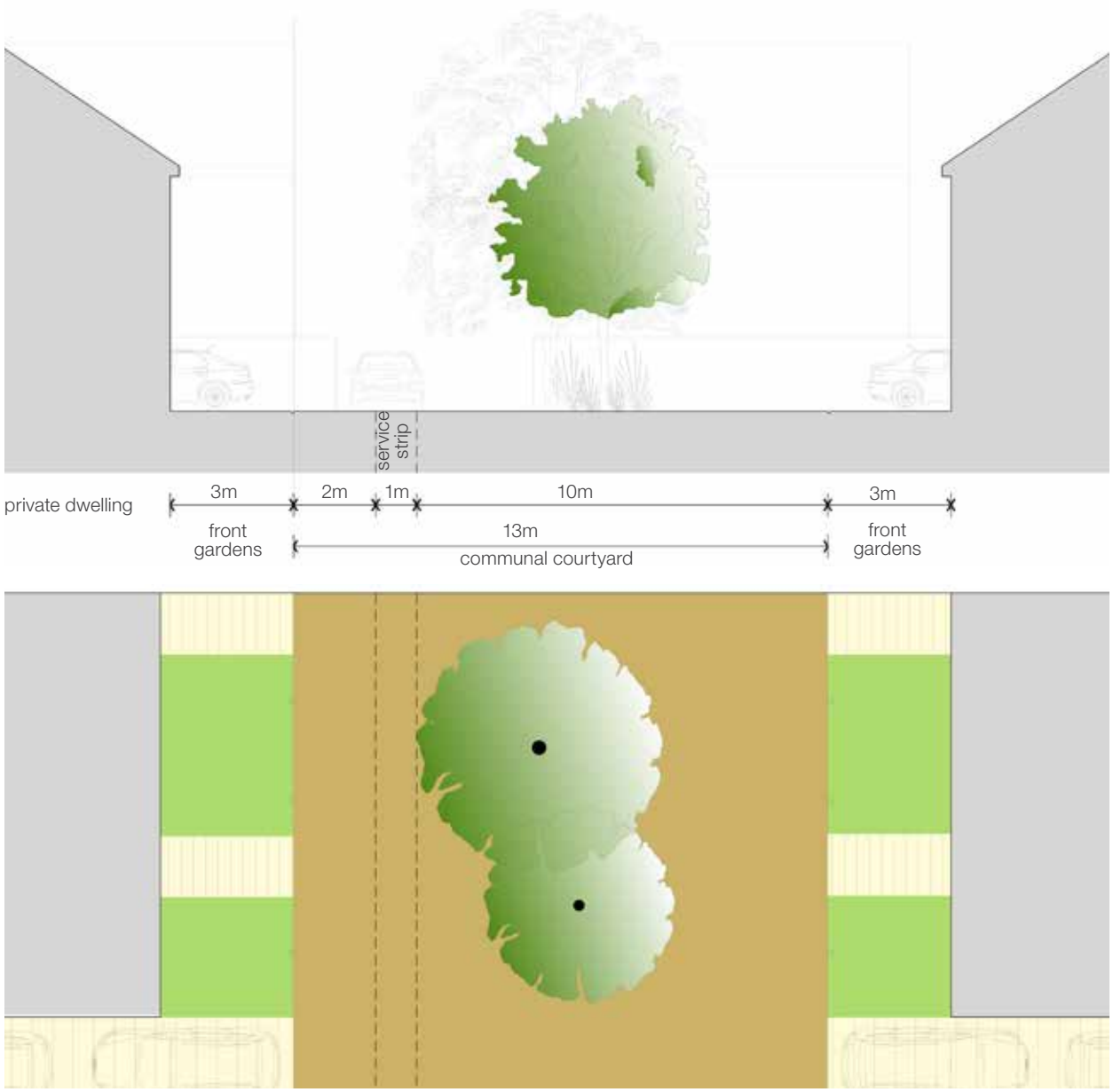


Fig 4.12: Tertiary Street 3 Section and Plan

Note: Example cross section.

Note: Streets to be self-calming due to the horizontal alignment.

4.5.8 Tertiary Streets as Spaces

Tertiary streets will be designed as spaces within which vehicles, pedestrians and cyclists share equal priority. This form of tertiary street is appropriate for streets that provide access to dwellings within the centre of development parcels, i.e. away from the primary movement network of KP1.

Where tertiary streets are also intended to function as spaces, the following design principles will be followed, as demonstrated in the illustrative examples opposite in Figures 4.13 to 4.16.

Key plan

Design Principles:	
a.	Parking areas will be demarcated in a low key manner, for example, with granite setts
b.	Where street parking is provided, the number of spaces will not exceed four in a row
c.	Parking areas will be defined by landscaping such as trees, hedges and planted verges
d.	Buildings surrounding the space will create enclosure through the appropriate use of boundary walls and dwelling frontages
e.	Central drainage channels will be provided to drain surface run off within spaces, whilst also acting as a traffic-calming measure
f.	High-quality surface materials will be used to create an attractive environment for pedestrians, cyclists and vehicles (see sub-chapter 8.7 for details on materials)
g.	A minimum of 4.8m will be provided for vehicles moving through the space. The carriageway does not require definition through materials and should merge with the surrounding spaces
h.	A minimum of 6m clear width will be provided to allow cars to access parking spaces
i.	Street furniture, such as benches and cycle parking, will be provided as necessary to encourage informal use by residents to encourage activity within spaces

Examples of streets as spaces and appropriate use of materials (Upton, Northamptonshire)

Illustrative examples:

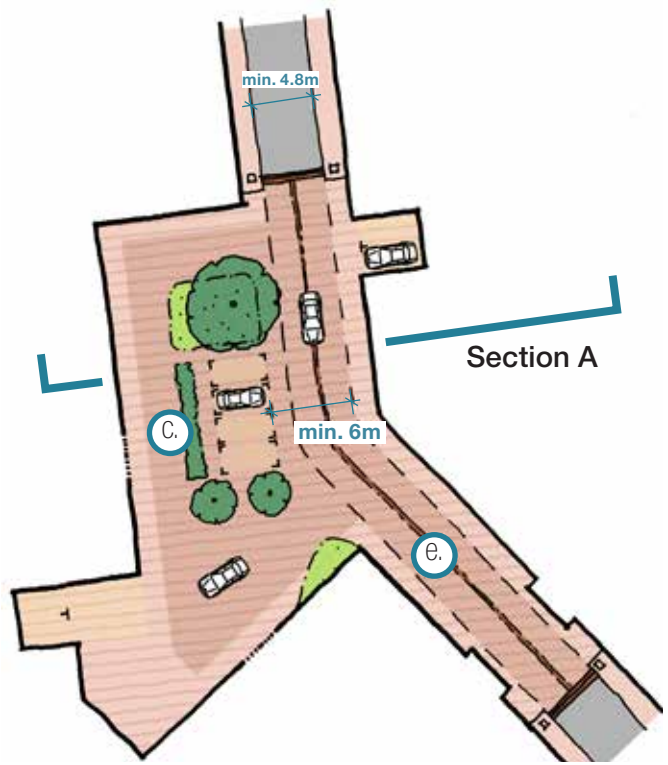


Fig 4.13 Example plan A of tertiary street as space

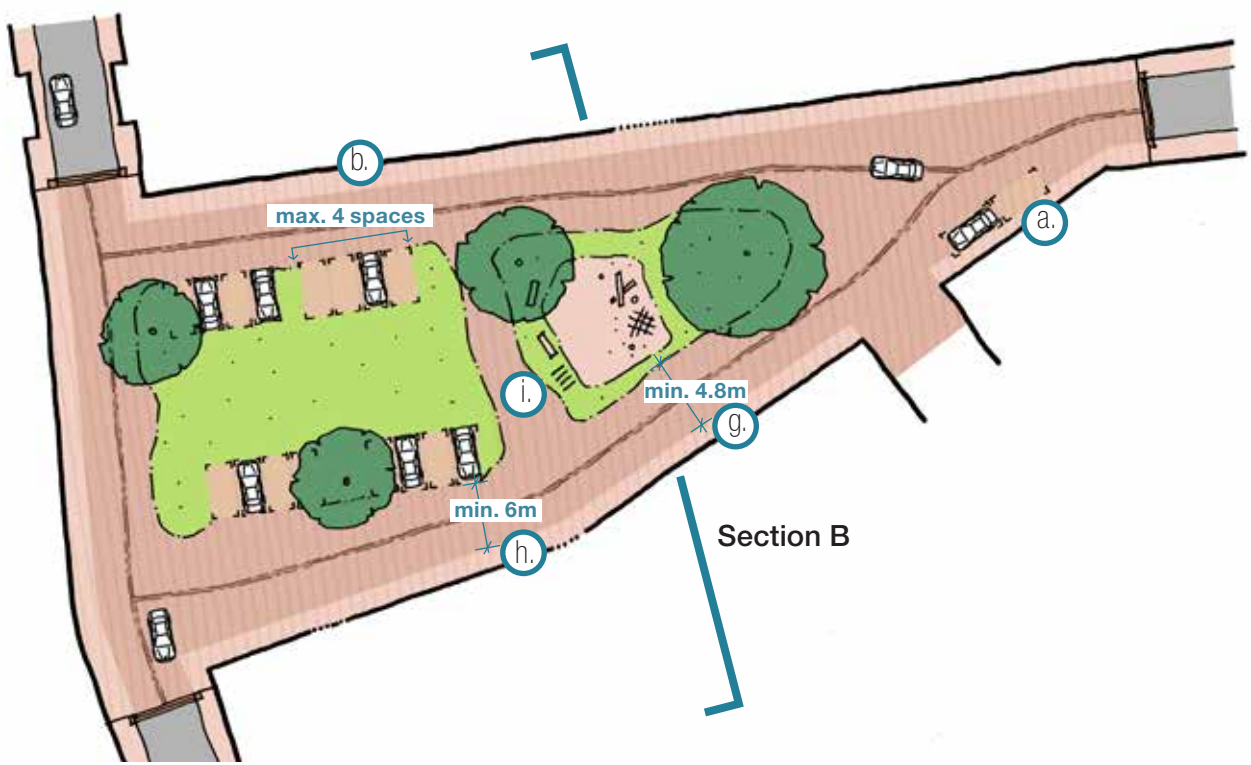


Fig 4.14 Example plan B of tertiary street as space

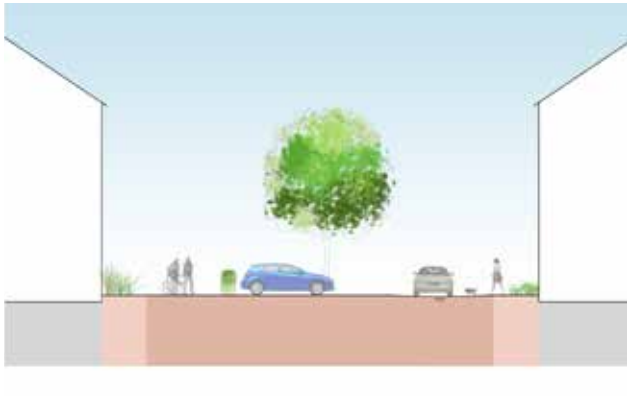


Fig 4.15 street section A through plan A

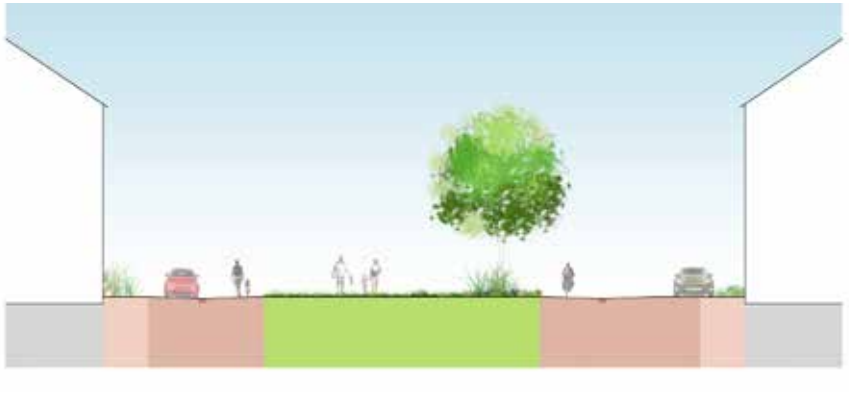


Fig 4.16 street section B through plan B

Key:

- 1-2m defensible space
- shared surface
- parking area
- drainage channel

4.6 Edge Sections

The sectional drawings over the following pages provide an indication of character, landscaping and relationship between built form, open space and streets along residential development edges.

Edge-condition sections are annotated on the Regulatory Plan. Reserved Matters applications must demonstrate how these sections have been considered and incorporated within the design.

4.6.1 Edge Section 1

The Community Orchard

The Community Orchard will be overlooked by homes on both sides, which will be accessed along a narrow lane. A pedestrian pathway will run along one edge of the lane, with a softer green verge running alongside the orchard.

Key Plan

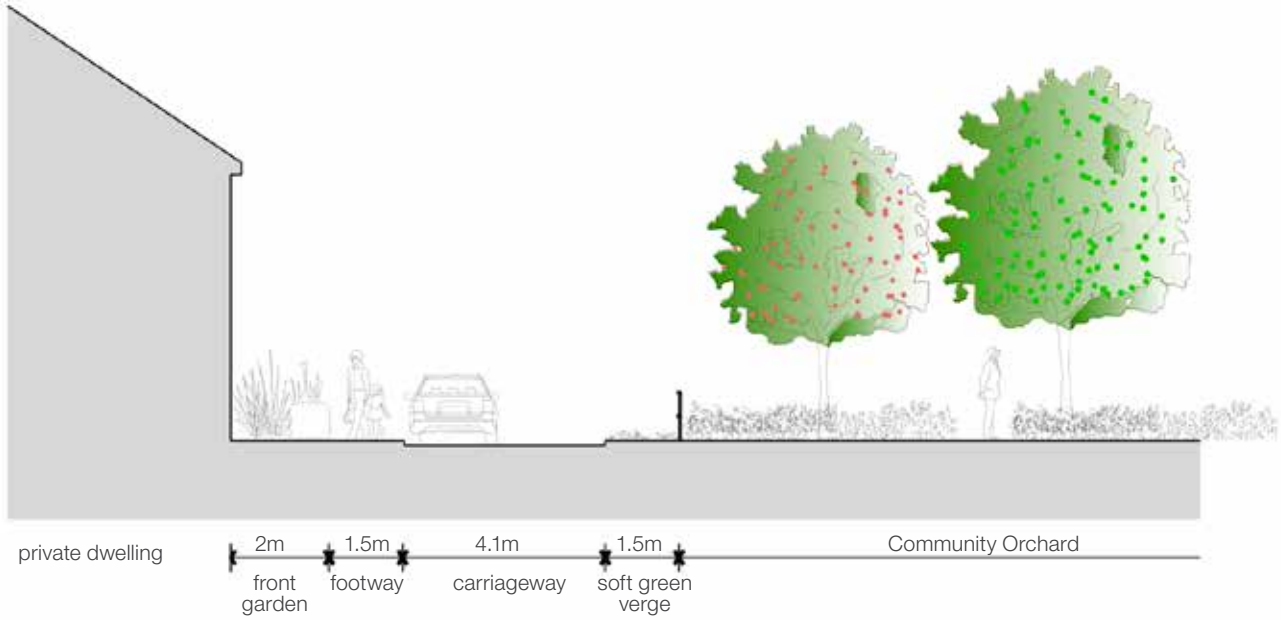


Fig 4.17: The Community Orchard - Cross Section

4.6.2 Edge Section 2

Central Open Space

The eastern boundary of the Central Open Space is lined with a 10m wide wildlife strip which connects an existing newt pond to the wildlife corridor to the north. A combined LEAP/ NEAP (play area) is also positioned along this edge, which requires a 30m minimum buffer to nearby dwellings.

Key Plan

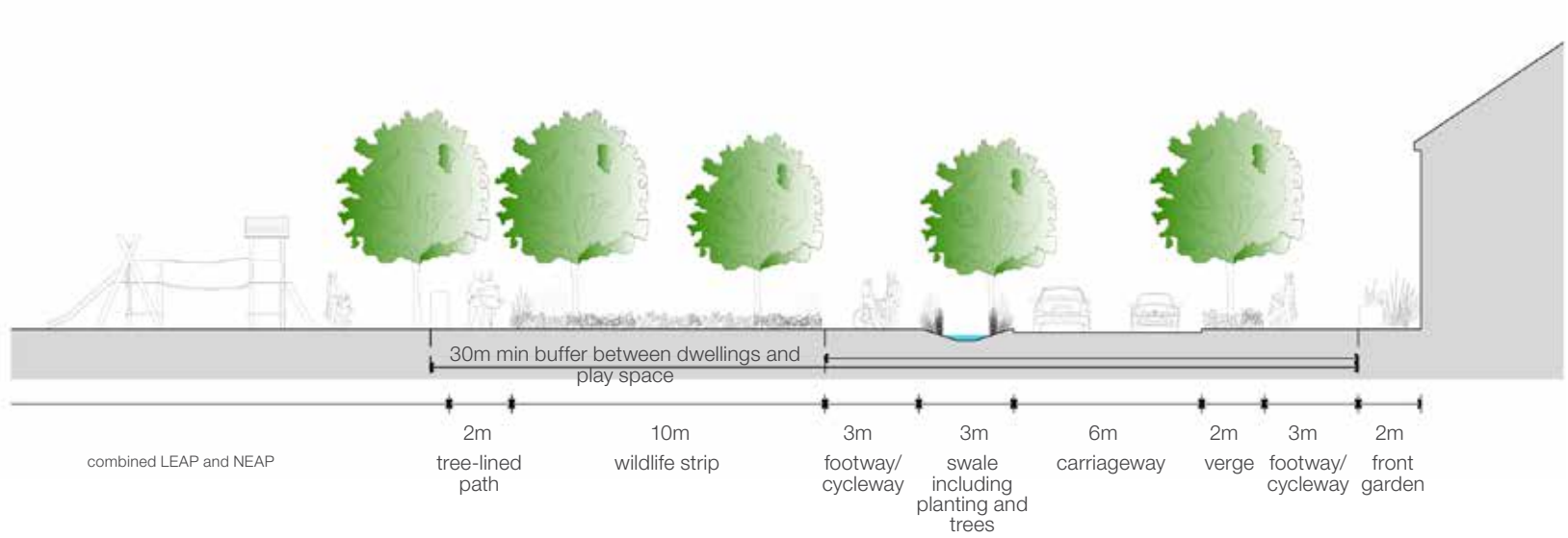


Fig 4.18: The Central Open Space - cross section

4.6.3 Edge Section 3

The Wildlife Corridor

The wildlife corridors are in close proximity to dwellings. Where possible, wildlife strips of long grass are positioned around existing newt ponds to buffer them from play areas and pedestrian paths.

Key Plan

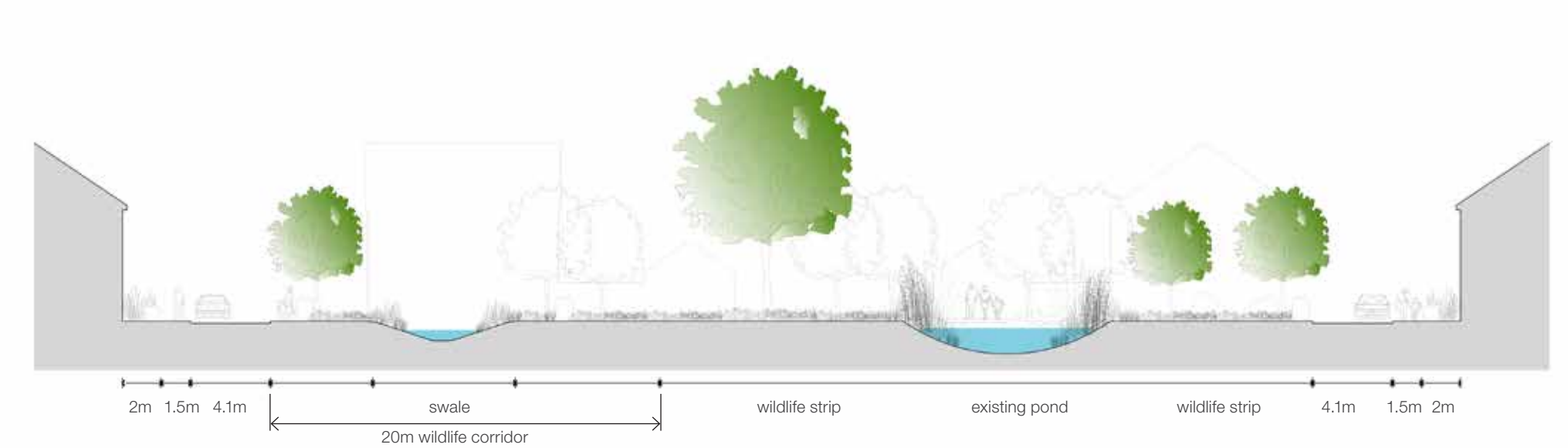


Fig 4.19: Wildlife Corridor - Cross Section

4.6.4 Edge Section 4

A428 Crick Road

To the north Crick road is lined with a narrow landscape buffer behind which is a cycle and footpath and a lane accessing dwellings. A wider landscape buffer will line the south of Crick Road where it runs alongside the commercial land parcels.

Key Plan

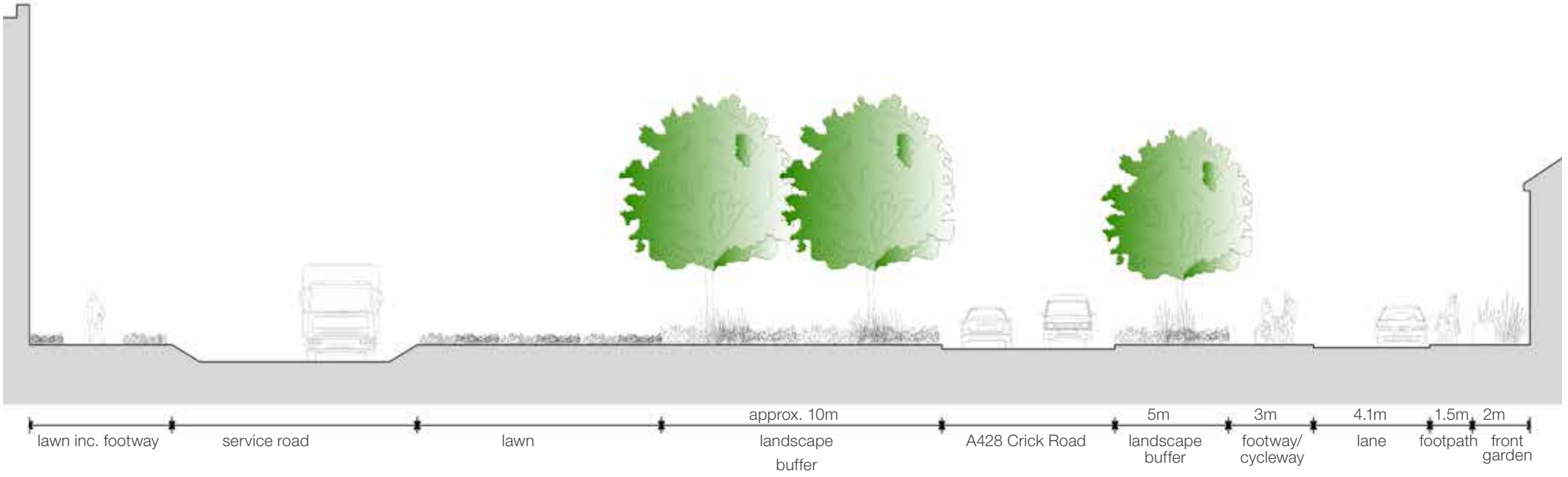


Fig 4.20: A428 Crick Road - Cross Section

4.7 Vehicle & Cycle Parking

The overall residential parking ratio for the completed development will be in the order of 1.5 spaces per dwelling across the Site, unless otherwise agreed by RBC, with a range from no parking for some apartments up to a maximum of 3 spaces for some larger units.

For further details regarding parking refer to chapter 9.3: Car and Cycle Parking Standards.

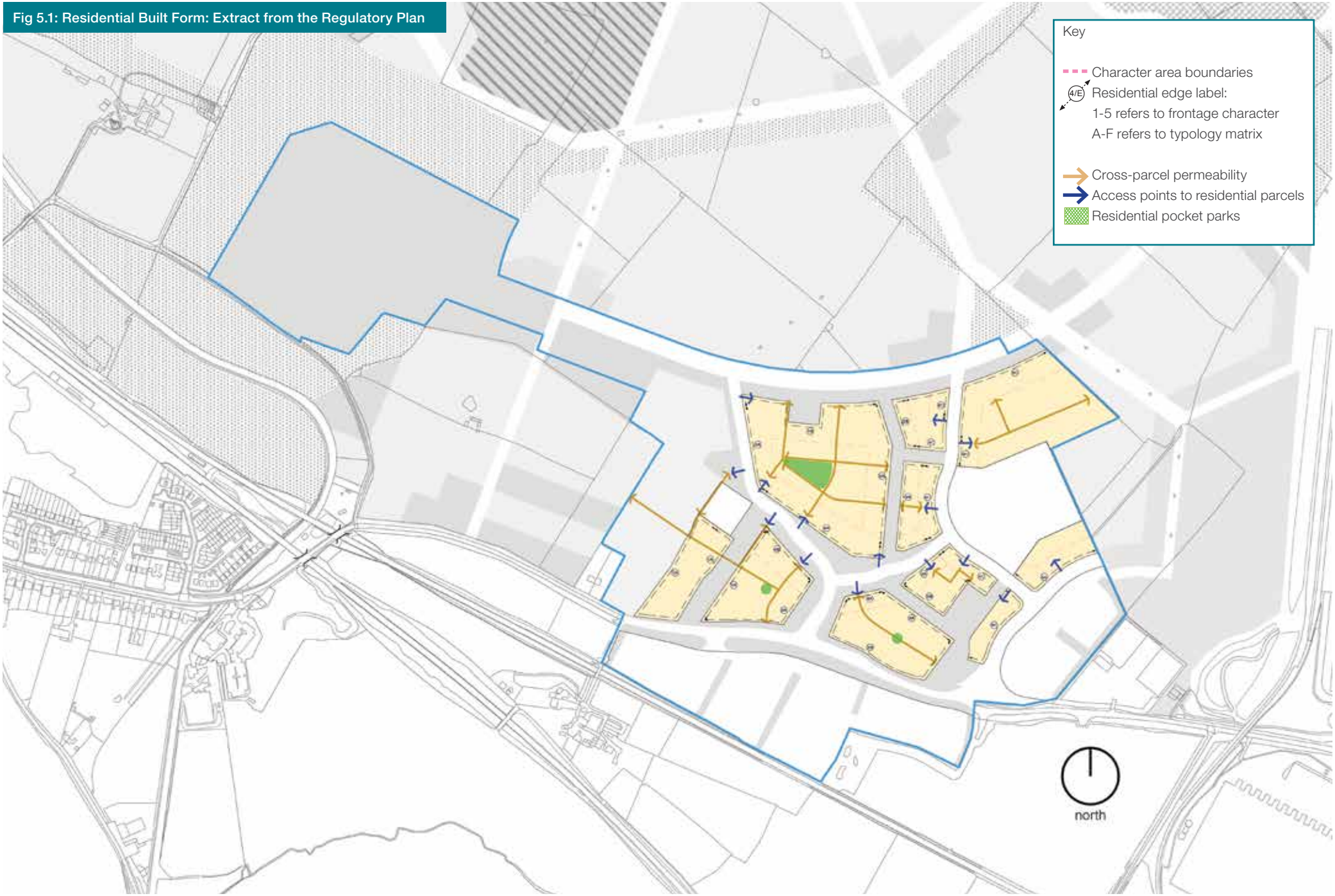
Chapter 5
Residential Built Form

Chapter 5: Residential Built Form Mandatory Design Fixes

The mandatory design fixes are set out below and shown on the Regulatory Plan. The Compliance Checklist in Appendix 1 presents a complete list of design fix headings from the whole Design Guide.

- **Location of residential development parcels** as shown on the Regulatory Plan.
- **5.2 Residential Character Areas:** fixed definition of character areas that inform the choice of material palettes (see Chapter 8, Detailing the Place for further details).
- **5.3 Plot Layout Rules:** fixed design principles for the layout of residential plots, as per the tables presented in section 5.3.
- **5.4 Frontage Character:** locations for where specific residential building designs are required on the edges of parcels are as per the locations and annotations on the Regulatory Plan. Further details are fixed in Figure 5.3 Frontage Character Plan.
- **5.5 Residential plot components:** locations where specific residential building designs on the edges of parcels are required as per the locations and annotations on the Regulatory Plan. Further details are fixed in the corresponding tables under section 5.5, including:
- **5.5.1 Dwelling Typologies** – matrix listing acceptable dwelling types, including identification of where certain types are not permitted.
- **5.5.2 Parking Typologies** – matrix listing acceptable residential parking solutions.
- **5.5.3 Boundary Typologies** – identification of acceptable boundary treatments for residential plots.
- **5.6 Residential Typologies Matrices:** overview of acceptable residential building typologies, height, set back, parking and boundary treatment. Matrices are labelled A to H corresponding with locations marked on the Regulatory Plan.
- **5.7 Residential Density:** development must be designed within the density ranges fixed for parcels across KP1.
- **5.8 Key Grouping - The Gateway:** design principles for development at the entrance gateway.

Fig 5.1: Residential Built Form: Extract from the Regulatory Plan



5.1 Introduction

This chapter of the design guide builds on the residential design principles set out in the Rugby Radio Station SUE Outline Planning Application and Parameter Plans.

KP1 has the potential to deliver up to 600 homes, so how they are arranged together, and individually designed, will leave a major impression on the success of this and future phases. The overarching vision for the Rugby Radio Station SUE is to create a network of safe and secure streets forming walkable neighbourhoods, and the layout of residential streets plays a major part in this.

This chapter of the design guide refers closely to the Regulatory Plan and will set out the following;

Character Areas	The KP1 site naturally divides into four distinct character areas. These determine factors such as typologies and materials allowed for the residential development within them.
Plot Layout Rules	A set of rules to ensure the layout of residential parcels will be consistent and coherent across the KP1 site.
Frontage Character	This matrix explains how residential parcels will address key streets and open spaces, as set out in the Regulatory Plan.
Residential Plot Components	These include guidance on dwelling type, parking, boundary, treatment, setbacks and dwelling height.
Residential Typology Matrices	These relate directly to references within the Regulatory Plan and set out the requirements for edges of residential parcels, with regard to appropriate selection of Plot Layout Components.
Residential Density	Guidance on the density range within the KP1 site.
Residential Illustrative Groupings	A series of four samples which illustrate how the rules within this chapter could be applied to design a cluster of dwellings.

5.2 Residential Character Areas

The residential area of Key Phase 1 has been categorised into four Character Areas. These areas will be defined by the housing typologies, layout and materials used in their design, and are important as part of the method by which the Design Guide allows for the carefully considered selection and use of building materials. Through reference to applicable Materials Index for each Character Area, a suitable palette will be employed that creates consistency across that area, and a character complementary to neighbouring areas. The four areas are described briefly below (note the colours below relate to the plan in Figure 5.2, opposite):

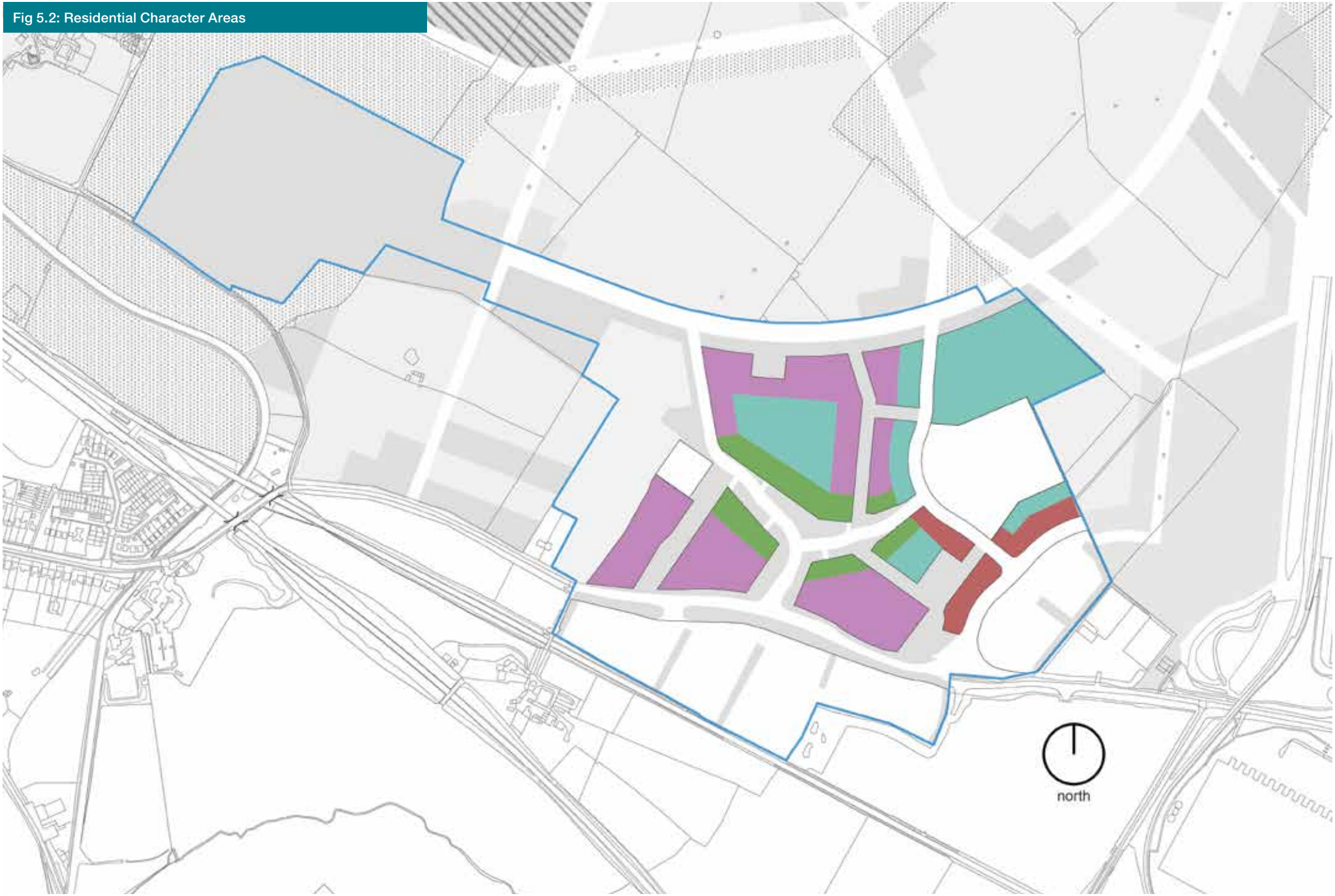
Rural Edge
Low-density housing, occasionally with larger gaps between dwellings, to create a soft development edge. Linkage may be directly between some dwellings, or achieved by car barns and individual garages. Dwellings to be predominantly 2 storey, with some 3 storey elements to emphasise key corners and frontages. A clearly defined frontage to open spaces will be provided with housing arranged in a gently staggered layout with variety in set-back distance from the public realm.

Dollman Common
Development parcels fronting the Common will feature formal arrangements of dwellings creating a strong sense of enclosure, through linked houses and through a consistent and limited set-back distance from the edge of the public realm. Increased height, through the use of 2.5 and 3 storey dwellings, is encouraged. Corners and junctions to be defined by key buildings marking their location through increased height or grandeur, with suitable corner-turning features defining gateways or prominent corners.

Formal Urban
Higher-density area characterised by a mix of terraces and semi-detached dwellings defining streets and spaces. Key buildings will be positioned at junctions and corners. Set pieces reinforce the formal layout with uniform set-backs, and building design will feature clear formal lines, symmetry and regular openings. Dwellings to be 2. 2.5 or 3 storeys, with some 3 storey dwellings located to address key frontages and spaces.

Eastern Gateway
Characterised by terraced housing and apartment buildings lining the primary route to the east of the site. Buildings to be 2, 2.5 or 3 storeys. The primary parcel frontages will display clear enclosure by predominantly 3 storey buildings that line and face the principal routes. Spacing between buildings is to be appropriately minimised. Dwellings will directly reflect the road alignment, and variety in set-back distances will be kept to a minimum.

Fig 5.2: Residential Character Areas

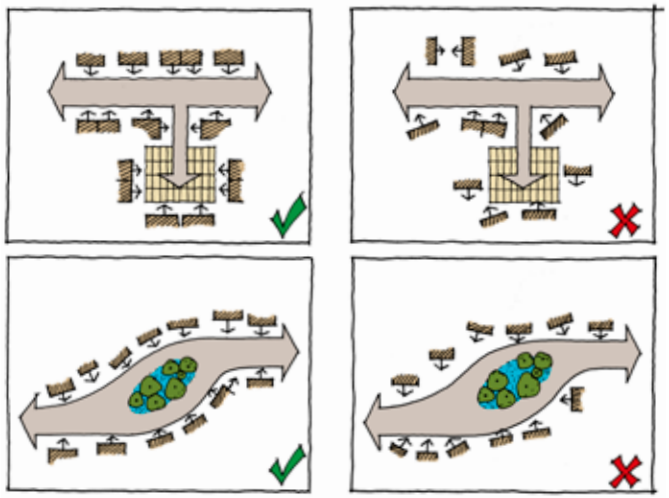


5.3 Plot Layout Rules

The following plot layout rules are to be adhered to in reserved matter applications in order to achieve a coherent framework of well-designed streets and spaces.

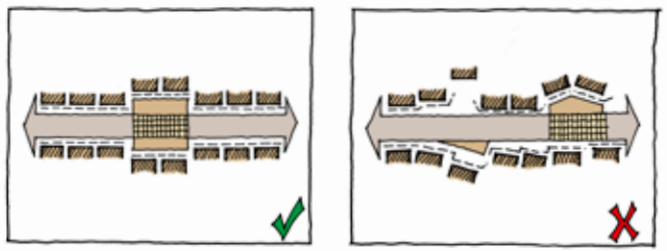
Plot Layout Rules

Building orientation will relate to routes and spaces



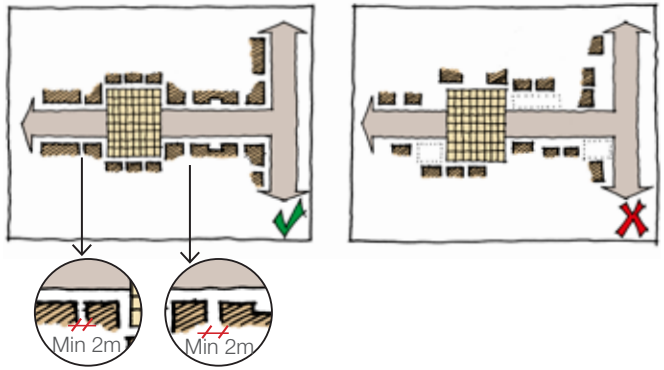
- Buildings must address routes and spaces such that their primary frontage is parallel to the edge of that route or space.
- For informal arrangements dwellings must still align to the immediate edge of the route or space it faces.
- Primary entrances to buildings must be visible from the public realm.

Building alignment will be coherent



- Building frontages must establish a common building line where they face routes or linear spaces (except in areas of lowest density e.g. the 'Rural Edge' character area where departure from this principle is permitted).
- Rear and flank walls of garages and outbuildings may be considered as components in establishing a common building line, although this must be limited.
- Along tighter streets where the distance between building frontage and back of footpath is reduced, a buffer privacy strip of at least 800mm must be maintained.
- Set-backs from an established building line will be in accordance with the permitted dimensions specified by the Typology Matrices.

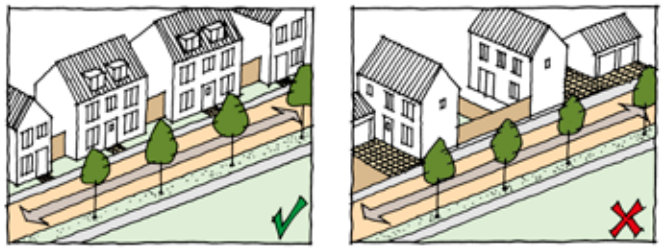
Continuity and enclosure will be achieved



- All frontages along streets and spaces must be designed to create clear definition through legible continuity of building form, linkage and positioning.
- Public and private space must be clearly distinguished through continuity of frontage.
- 'Semi-public' space arising from lack of continuity or enclosure must be avoided.
- Dwellings must be clearly separated, with a minimum of 2.0 metres clear between flank walls. This minimum dimension applies to detached, semi-detached dwellings and terraces (as shown above).

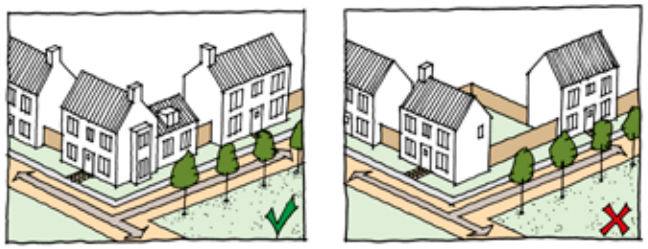
Plot Layout Rules

Routes and spaces will be addressed by active frontage



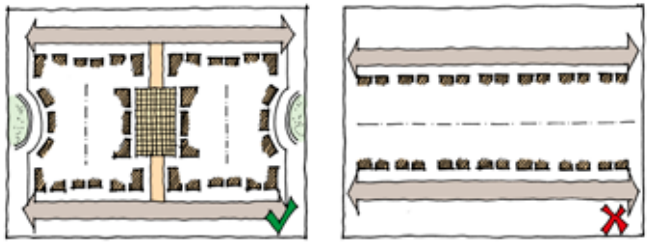
- Routes and spaces must be overlooked by windows to habitable rooms at ground and first floor levels, providing natural surveillance.
- Blank elevations largely devoid of windows must be avoided where they face or are clearly visible from the public realm.
- Active frontage must be enhanced through the use of balconies at first floor level, glazing within or alongside primary entrances, and full height projecting bays on flank elevations where appropriate.

Corners and plot sides will be positively resolved



- All buildings located on identifiable corners must positively address both directions through positioning of entrances, generous windows to habitable rooms and upper level balconies where appropriate.
- Building form must respond to defined corner locations through the largest element of the building being located directly on that corner.
- Where a corner plot forms the end of a row of street-facing dwellings, the dwelling on that corner plot may have its primary entrance positioned on its flank elevation, but must ensure active frontage on both elevations. Interest can be created through projected windows and upper level balconies.
- Simply introducing one or two windows on a flank elevation will not represent an acceptable solution of a building addressing a corner.

Groupings will form components of the Layout

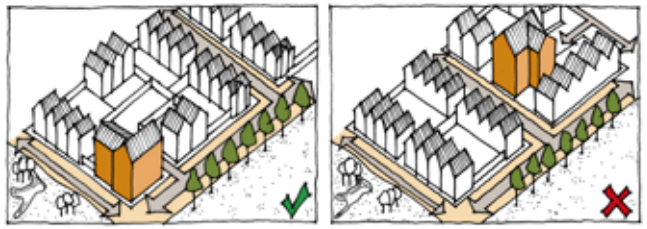


Identifiable groupings add character and function and creates a sense of place

No variation of dwelling typologies, massing or enclosure does not add character and creates no sense of place

- Within development parcels, dwellings are to be configured in identifiable groupings that define spaces of a certain character and function.
- Groupings will be discernible either as ‘clusters’ of buildings around a shared space, or configurations that address and define a particular space.

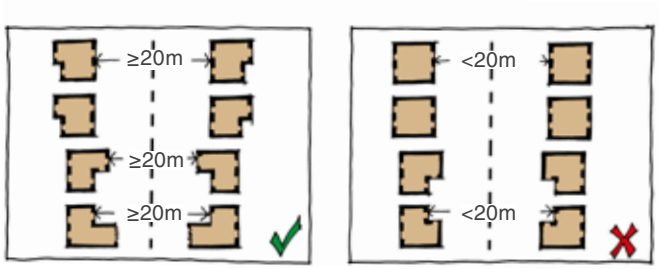
Apartments will address key frontages



- Apartment buildings of three or more storeys must be positioned to address key streets and spaces on parcel edges.

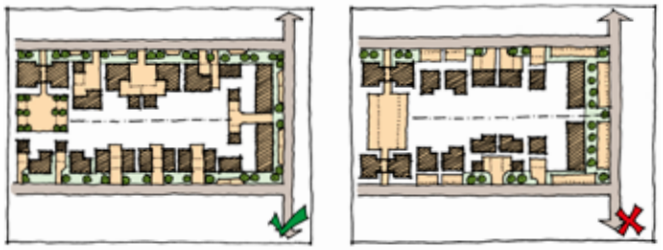
Plot Layout Rules

Privacy will be maintained



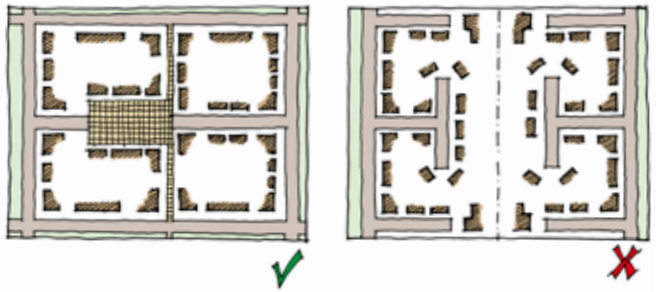
- Direct views from dwellings into dwellings through windows on their rear and flank elevations will be avoided, either by separation of >20 metres (properties back-to-back) or through appropriate design measures.
- For apartment blocks, a minimum distance of 10m must be provided between facing windows on side elevations of two apartment buildings.
- Appropriate design measures in higher-density areas include use of opaque glazing or louvres, the angling or positioning of windows to avoid direct sight lines, and the use of full-height screening to courtyards or terraces.
- No habitable room will be served only by windows comprising of opaque glass.

Car parking will have minimal visual impact



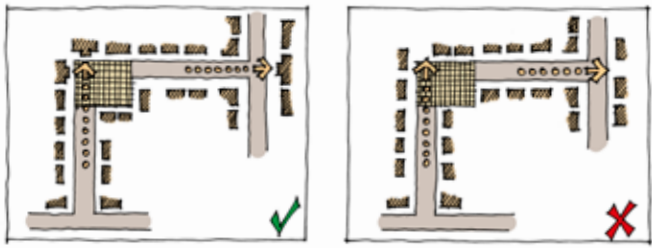
- All development parcels must utilise a variety of parking solutions and not rely on just one or two methods of accommodating cars.
- On-plot parking must be positioned such that parked cars do not sit forward of the common or the projected building line in areas of high enclosure where a layout has established street continuity or any lane within a parcel. This may be permitted along areas of lower density with larger set backs and in internal lanes / mews / courtyards.
- All private parking spaces must be located with easy access to the dwellings they serve.
- Further guidance on parking courts is set out in the Parking Typologies section.

Connections and permeability will be integrated throughout the layout



- Pedestrian and cycle routes must be interconnected and not lead to dead-ends.
- Where vehicular routes reach a terminating space pedestrian routes must continue beyond that space and connect to the nearest public route or space.
- Rigid 'hammerhead' road arrangements must be avoided.

Visual stops will be established



- Where linear spaces or routes establish a vista, that vista must either end in a defined public open space or be terminated by a 'visual stop.'
- A 'visual stop' may be a carefully positioned marker or key building or a prominent landscape feature.
- Vistas must not terminate in a view of a private driveway or garage door, or the side boundary wall to a plot.

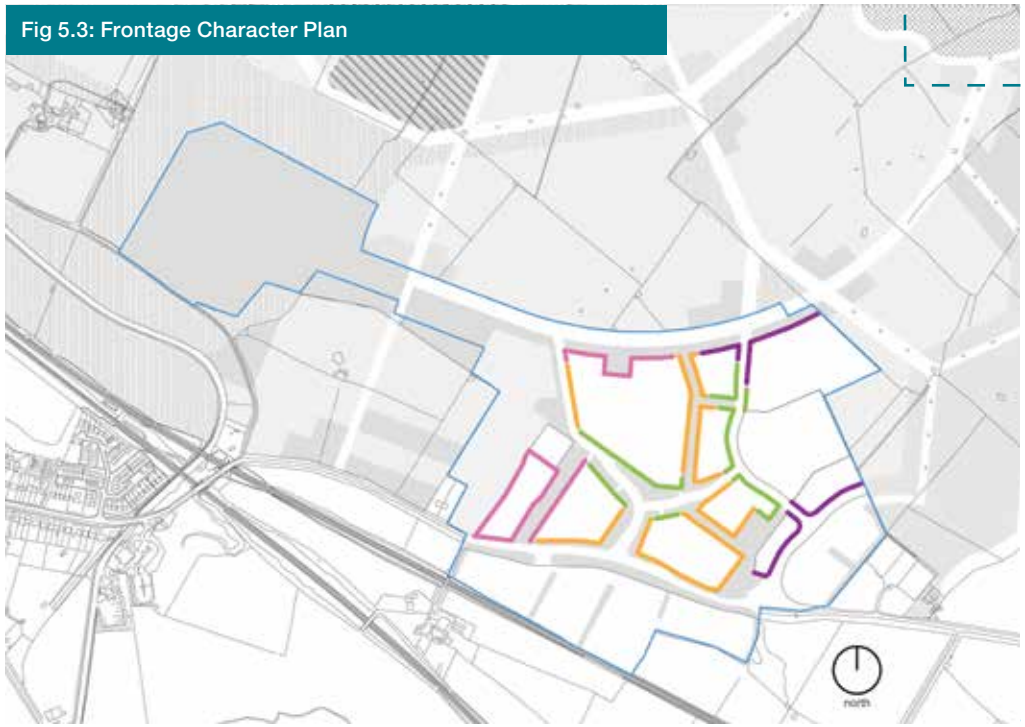
5.4 Frontage Character

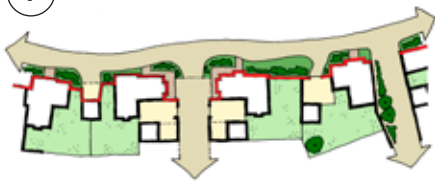
The following types of frontage character will be demonstrated along key routes and spaces throughout the KP1 site. The residential frontage label on the Regulatory Plan, as shown below, prescribes which frontage character will be used along a given edge.

Extract of the Regulatory Plan highlighting the frontage character

3/E

Fig 5.3: Frontage Character Plan



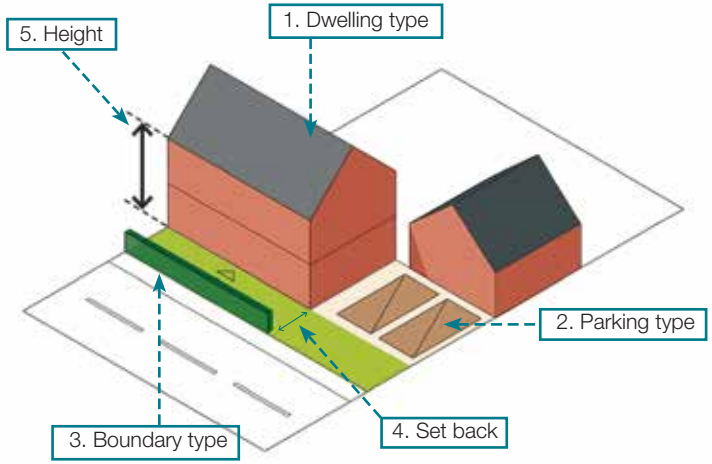
Plan Example	Frontage Character Types
1 	• Staggered frontage • Consists of predominantly detached dwellings of varying size • Frontage may include garage rear/flank walls and garden walls
2 	• Stepped frontage • Consists of predominantly detached and semi-detached dwellings • Subtle variation in set-back from public realm
3 	• Consistent frontage • Consists of dwellings of a similar typology and size, arranged on a consistent spacing with a consistent set back to create rhythm and order
4 	• Stepped, linear frontage with a high degree of enclosure • Consists of semi-detached and terraced dwellings • Detached dwellings may define corner plots
5 	• Near continuous, formal, linear frontage • Consistent grouping of typologies • Consists of semi-detached, terraced dwellings and apartments, with gaps only for access to parking and pedestrian routes

5.5 Residential Plot Components

There are five components which determine the design of a residential plot, as shown in the adjacent diagram. These residential plot components can be combined in a number of ways to achieve different forms of residential character. A library of these residential plot components is provided in sub-chapters 5.5.1-3. Reserved Matters Applications will demonstrate compliance with the prescriptions made within the Residential Components Library.

A set of typology matrices in sub-chapter 5.6 will prescribe specifically how selected plot components are to be configured along labelled edges of residential development on the Regulatory Plan. This is annotated by a letter within the circle labelling each edge. Reserved Matters Applications will demonstrate compliance with all typology matrices applicable to the parcel(s) they cover.

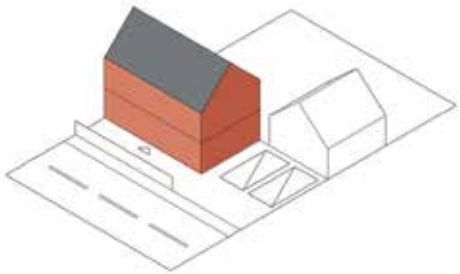
Residential plot components:



1 - Dwelling
(refer to 5.5.1 dwelling typology)

D - Detached
SD - Semi-detached
T - Terraced
U - Urban housing
F - Flats

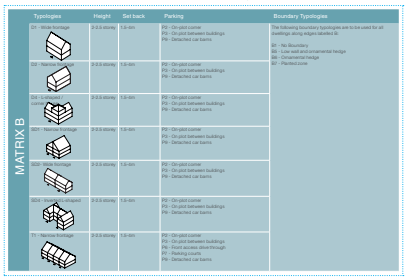
Within the middle of the residential parcel, any typology can be used except dwelling typologies NOT permitted in the relevant character area, as listed in the tables in sub chapter 5.5.1. Character areas are shown on the Regulatory Plan and set out in further detail in sub-chapter 5.2.



Text within the blue boxes explain which residential plot components are appropriate for development which is not covered by an edge label on the Regulatory Plan, i.e. residential development within the middle of parcels.

Extract of the Regulatory Plan highlighting the typology matrix label

4/B



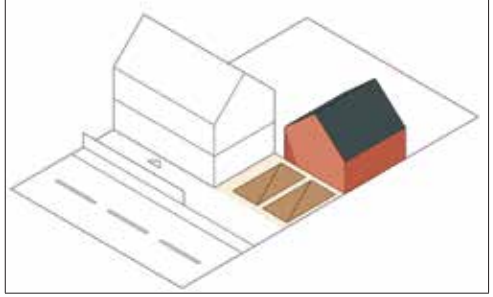
Refer to matrix B in sub chapter 5.6

2 - Parking (refer to 5.5.2 parking typology)

Parking arrangements are illustrated based on two spaces per dwelling:

P1 On-plot frontage
P2 On-plot corner
P3 On-plot between dwellings
P4 Courtyard
P5 Mews
P6 Front access drive through
P7 Rear parking courts
P8 Forecourt
P9 Detached car barns
P10 On-street

Within the middle of the residential parcel, any typology can be used except parking typologies NOT permitted in the relevant character area, as listed in the tables in sub-chapter 5.5.2. Character areas are shown on the Regulatory Plan and set out in further detail in sub-chapter 5.2. Specific parking provision for each Reserved Matters application to be agreed with RBC.

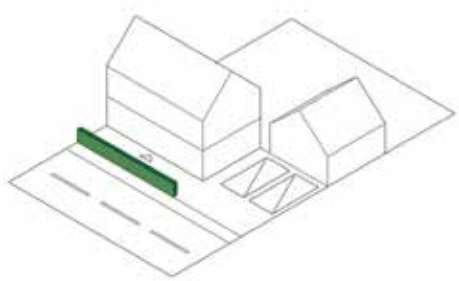


3 - Boundary (refer to 5.5.3 boundary typology)

The boundary treatment separating the private and public realm:

B1 No boundary
B2 Urban style with railings
B3 Railing on low wall
B4 Railing & hedge
B5 Low wall & ornamental hedge
B6 Hedge (ornamental / native)
B7 Planted Zone

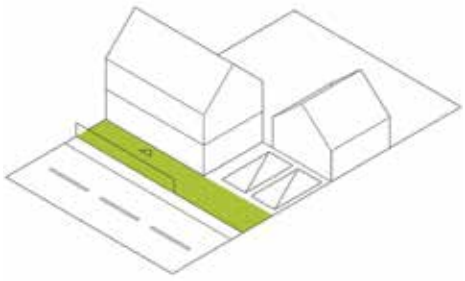
Within the middle of the residential parcel, any typology can be used except boundary typologies NOT permitted in the relevant character area, as listed in sub-chapter 5.5.3. Character areas are shown on the Regulatory Plan and set out in further detail in sub-chapter 5.2.



4 - Set Back

The set back of a dwelling is the distance in metres between the primary frontage of a dwelling and the back edge of footpath / road / public realm onto which the dwelling faces. This space is private to the dwelling and can include a front garden. The setback distance may be adjusted if required to accommodate visibility splays for safe vehicular movement.

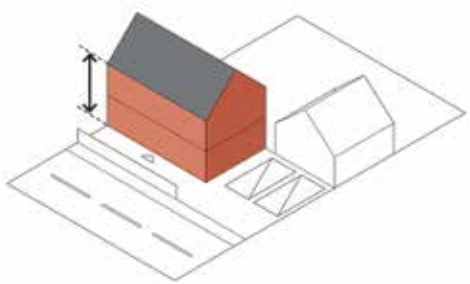
Within the middle of the residential parcel, any set back distance can be used. Designs must achieve the appropriate character as described in the character areas in sub-chapter 5.2.



5 - Dwelling Height

The dwelling height is stated as a number (or range) of storeys within the typology matrices in sub-chapter 5.6 for dwellings along labelled edges-

Within the middle of the parcel, the height of dwellings is defined by character area, as set out in sub chapter 5.2.



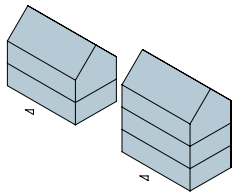
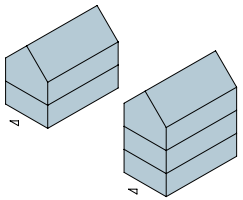
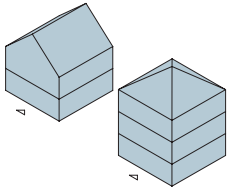
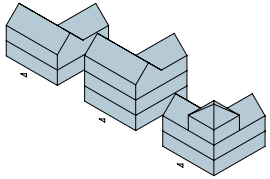
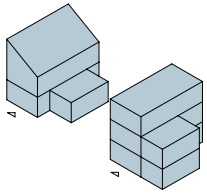
5.5.1 Dwelling Typologies Library

The appropriate dwelling typologies for residential development are described here.

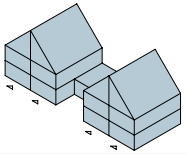
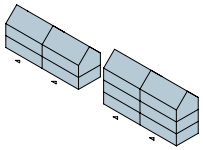
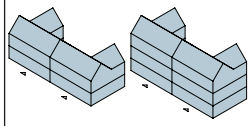
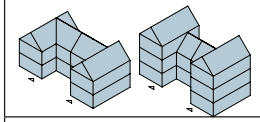
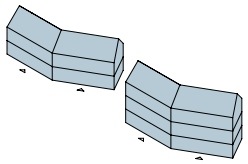
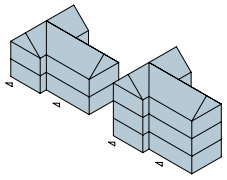
Dwelling typologies are not permitted in character areas listed within the second column of each table.

Matrices A-D in sub chapter 5.6 set out the appropriate dwelling types for each labelled edge on the Regulatory Plan.

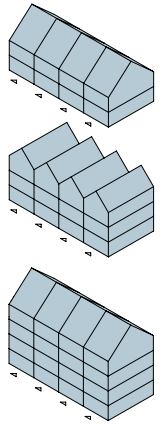
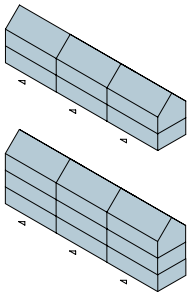
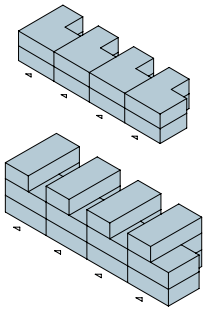
Detached Dwelling Typologies

Typology	NOT permitted in the following Character areas	Description
D1 - Wide frontage 	Eastern Gateway	• The principal frontage width is greater than the depth of the primary building form. • The principal frontage is more than 8m wide. • The ridge line is parallel to the principal frontage.
D2 - Narrow frontage 		• The principal frontage width is less than the depth of the primary building form. • The principal frontage is less than 8m wide • The ridge line is perpendicular to the principal frontage.
D3 - Villa 	Eastern Gateway	• The principal frontage width is between 90-110% of the depth of the dwelling. • The principal frontage is more than 8m.
D4 - L-shaped/corner house 		• The dwelling has two principal frontages at 90 degrees to one another. • Both principal frontages are more than 8m wide.
D5 - Linked detached 		• The mass of the secondary building form is less than 60% of the mass of the primary built form. • When the secondary building form includes a garage, the frontage of the dwelling is more than 7m wide.

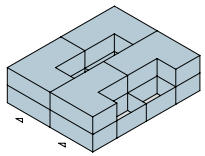
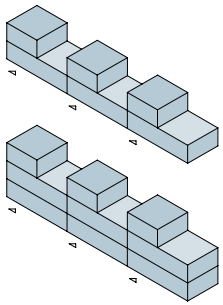
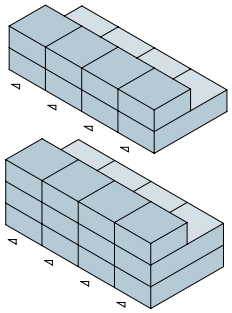
Semi - detached Dwelling Typologies

Typology	NOT permitted in the following Character areas	Description
SD1 - Narrow frontage 		• The principal frontage widths are less than the depth of the primary building forms. • The principal frontages are less than 8m wide. • The ridge line is perpendicular to the principle frontages and forms a combined pitched roof over both dwellings.
SD2 - Wide frontage 	Eastern Gateway	• The principal frontage widths are greater than the depth of the primary building forms. • The principal frontages are more than 8m wide. • The ridge lines are parallel to the principal frontages and are adjoining.
SD3 - L-shaped 	Eastern Gateway	• The dwellings have two principal frontages at 90 degrees to one another. • Both principal frontages are more than 8m wide. • Two dwellings are attached to form a U-shape.
SD4 - Inverted L-shape 		• The dwellings have two principal frontages at 90 degrees to one another. • Two dwellings are attached to form a U-shape.
SD5 - Cranked 	Eastern Gateway	• The principal frontage widths are greater than the depth of the primary building forms. • The principal frontages are more than 8m wide. • The ridge lines are parallel to the principal frontages and are adjoining. • The dwellings are cranked at an angle of between 30-45 degrees.
SD6 - T-shaped 	Eastern Gateway	• The T consists of a wide frontage (D1) and a narrow frontage (D2) adjoined. • The wide frontage unit's principal frontage is more than 8m wide. • The ridge lines are perpendicular to each other and are adjoining. • The dwellings are set perpendicular to each other.

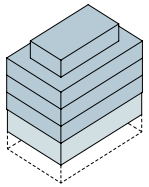
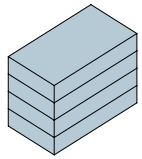
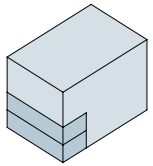
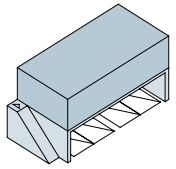
Terraced Dwelling Typologies

Typology	NOT permitted in the following Character areas	Description
T1 - Narrow frontage 	Rural Edge	• The principal frontage widths are less than the depth of the primary building forms. • The principal frontages are less than 8m wide.
T2 - Wide frontage 	Rural Edge	• The principal frontage widths are greater than the depth of the primary building forms. • The principal frontages are more than 8m wide. • The ridge lines are parallel to the principal frontages and are adjoining.
T3 - Stepped / L-shaped 	Rural Edge	• The mass of the secondary building form is less than 60% of the mass of the primary built form. • When the secondary building form includes a garage, the frontage of the dwelling is more than 7m wide.

Urban Dwelling Typologies

Typology	NOT permitted in the following Character areas	Description
U1 - Courtyard 	Rural Edge Dollman Common	• The principal frontage is more than 7m wide. • Courtyard is created using L-shaped building footprints, connected in back to back terraces. • Courtyards are more than 4x3m in size.
U2 - Side terrace 	Rural Edge Eastern Gateway Dollman Common	• The principal frontage widths are greater than the depth of the primary building forms. • The principal frontages are more than 8m wide. • The uppermost floor must consist of at least 40% amenity space in the form of a terrace.
U3 - Rear terrace 	Rural Edge Dollman Common	• The principal frontage widths are less than the depth of the primary building forms. • The principal frontages are less than 8m wide. • The uppermost floor must consist of at least 40% amenity space in the form of a terrace.

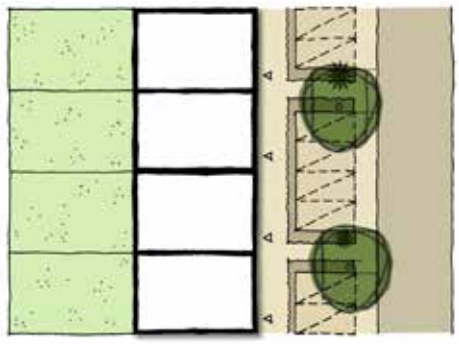
Flats Dwelling Typologies

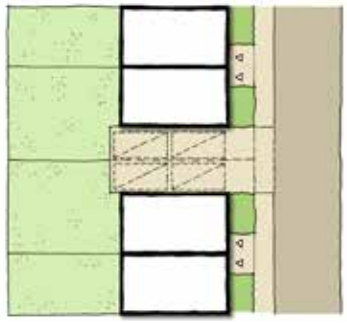
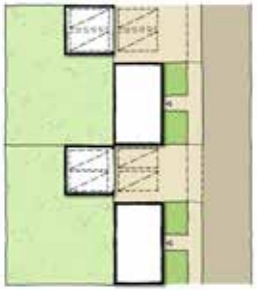
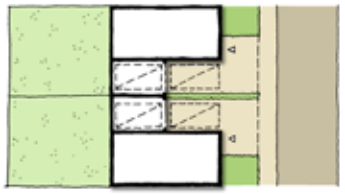
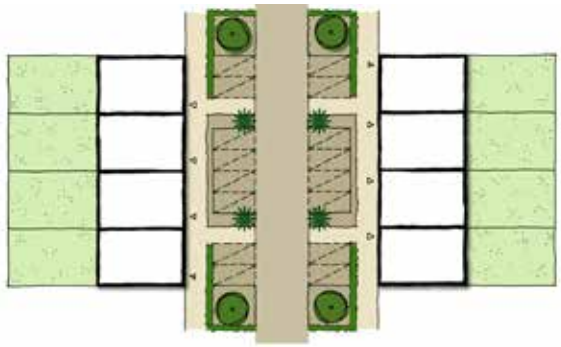
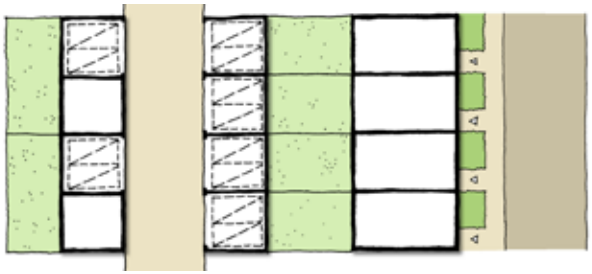
Typology	NOT permitted in the following Character areas	Description
F1 - Mixed use flat block 	Rural Edge Dollman Common Formal Urban	• The block is at least three storeys in height with a depth of no more than 12m • The internal layout does not include single-aspect north facing flats • Mixed uses may be provided at ground level
F2 - Typical flat block 	Rural Edge	• The block is at least three storeys in height with a depth of no more than 14m • The internal layout does not include single-aspect north facing flats
F3 - Duplex 	Rural Edge	• A flat within the block which is distributed over two storeys • A private entrance may be provided directly from the street at ground level • The duplex flat is not single-aspect north facing
F4 - Coach house / mews 	Rural Edge Dollman Common Eastern Gateway	• Accommodation is provided above garages within a mews or parking court arrangement • The flat provides natural surveillance to the mews or court • The flat is no more than one storey in height

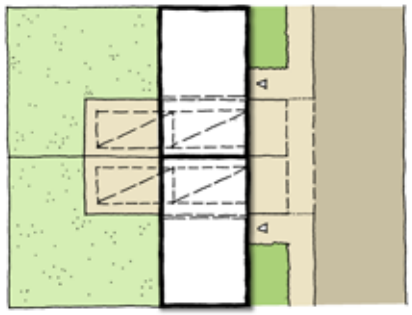
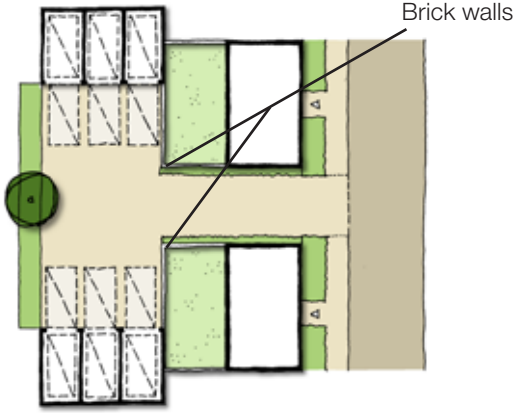
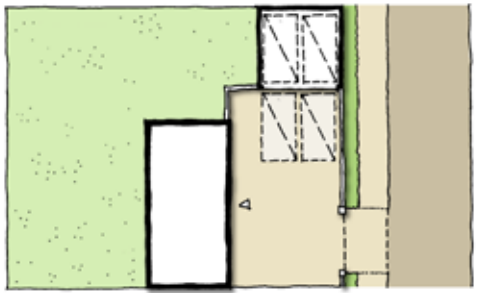
NB: Innovative typologies can be submitted for approval, the three typologies above give an example of what could be used.

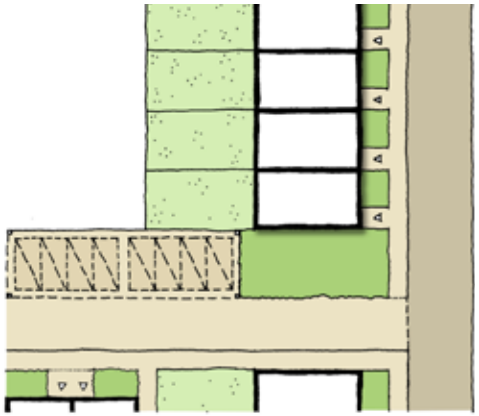
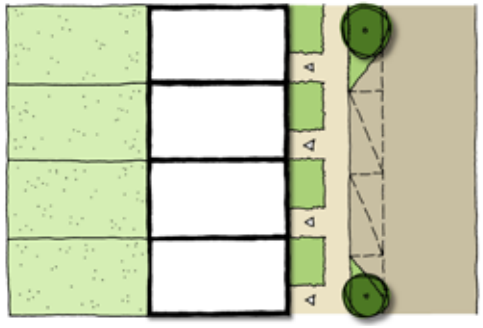
5.5.2 Parking Typologies Library

Acceptable parking solutions are illustrated below. Subsequent planning applications must demonstrate which parking solutions are used within the design, as appropriate to the relevant descriptions as set out in the following tables. Details of parking standards are provided in chapter 9: Technical Standards. Parking typologies are not permitted in character areas listed within the second column.

Typologies	NOT permitted in the following Character areas	Description / notes
P1 - On-plot frontage 	Dollman Common Eastern Gateway	• A maximum of four spaces in a row separated by landscape • Not to serve more than 8 dwellings on any one side of the street • A minimum landscape break of 1.5m wide to accommodate tree or specimen shrub planting; (this may be omitted if a large tree is planted in its place, with a limit of 8 spaces in a row) • Shrub or tree to be set sufficiently close to the road to minimise car door damage to plant stems • Medium-sized tree species to be planted no closer than 7m to the dwelling • A hard landscape treatment provides a clear space to readily manoeuvre around the parked cars  = Specimen shrub set in gravel or medium sized trees
P2 - On-plot corner 		• A maximum of four spaces • Enclosure will be provided through the use of brick walls enclosing parking bays

Typologies	NOT permitted in the following Character areas	Description / notes
P3 - On-plot between dwellings 		• Parking spaces must be set behind the building line • Spaces will be designed so as not to allow for tandem parking projecting forward of the building line • Width of parking between buildings will not exceed two spaces as shown in each example sketch Alternative layout options:  
P4 - Courtyard 	Dollman Common	• No more than four spaces landscaping • The courtyard will be designed as a whole, to create a coherent space • Hedging and landscape will be used to assist in defining the spaces • A minimum landscape break of 1.5m wide to accommodate a tree or specimen shrub planting; (this may be omitted if a large tree is planted in its place, with a limit of 8 spaces in a row) • The layout of the parking to be formed to create a rhythm to the landscape • A hard landscape treatment provides a clear space to readily manoeuvre around the parked cars  = Specimen shrub set in gravel or medium sized trees
P5 - Mews 		• Parking will be overlooked for security Alternative layout for apartments : 

Typologies	NOT permitted in the following Character areas	Description / notes
P6 - Front access drive through 	Rural Edge	• An openable screen or gate with visual permeability must be used to access parking spaces to ensure that gardens are not open to the street. Gates will be a minimum of 5.5m from the edge of the public highway carraigeway and will not open out towards the highway. • Solid garage doors must not be used for drive through parking spaces (except for a flat over garage where this will be permitted)
P7 - Rear parking courts 		• Courts to serve no more than 12 dwellings. For apartment blocks this may be increased, but courts must be sensitively designed • Enclosure will be provided to define the access of at least 4.1m, through the use of walls, where landscape strips are provided, these will be at least 600m in width • Courts will be designed as a whole to create a coherent space • To include an area of space where a medium or large tree can be located in view from the streetscene (and planted no closer than 7 or 10m to the nearest building respectively) Alternative layout for apartments : 
P8 - Forecourt 	Formal Urban Eastern Gateway	• Applies to large dwellings only • The front boundary will be walled (this must be complied with, regardless of the permitted boundary typologies set out in the typology matrices within sub chapter 5.6)

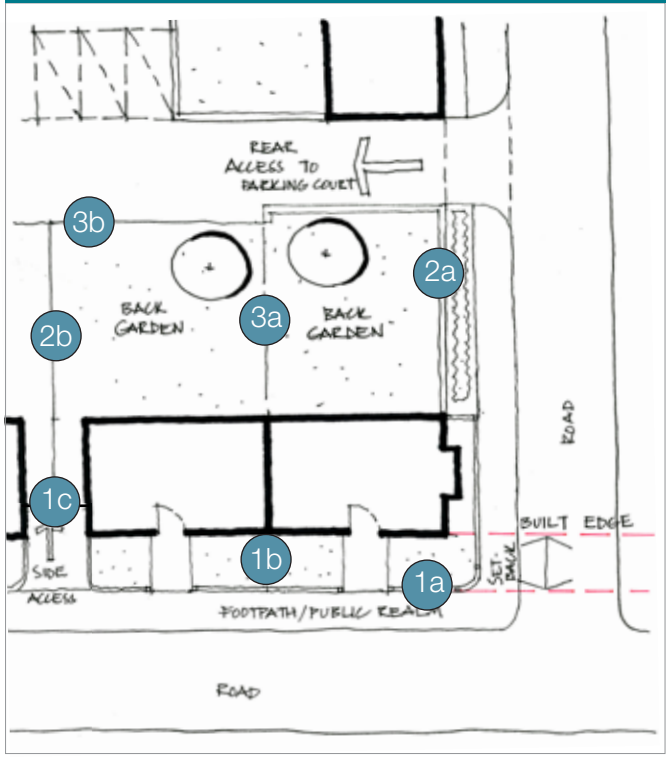
Typologies	NOT permitted in the following Character areas	Description / notes
P9 - Detached car barns 	Eastern Gateway	• No more than eight spaces in a single structure • Natural surveillance required from proximate dwellings
P10 - Visitors parking on street 	Dollman Common	• A maximum of two spaces before landscaping occurs • Medium-sized tree species to be planted no closer than 5m to the dwelling • Parking and adjacent landscape treatments will be designed to prevent unauthorised parking

5.5.3 Boundary Typologies Library

Dwelling boundaries play an important role in establishing a coherent streetscape. The choice of boundary type will depend on its location within the site, and its relationship with the public realm. The coherence of boundaries that address primary streets and spaces is of key importance.

This section of the Design Guide relates to front, side and rear dwelling boundaries. The following diagram sets out the different boundaries referred to in this section:

Fig 5.4: Boundary Typology Definition



Front boundary

1a. Front boundary addressing public realm

1b. Front boundary to demarcate property line

1c. Front boundary as linking element between dwellings

Tables on the following pages set out the appropriate front boundary typologies (1a) for residential development addressing the public realm:

B1 - No boundary
B2 - Urban-style railing
B3 - Railing on low wall
B4 - Railing and hedge
B5 - Low wall and ornamental hedge
B6 - Ornamental hedge
B7 - Planted zone

The tables explain the appropriate property demarcation treatment (1b) within the notes column. This is mandatory and must be adhered to link the front boundary treatment (1a) and property demarcation treatment (1b).

Matrices A-D in sub-chapter 5.6 set out the appropriate front boundary typologies for each specified key edge. The following design criteria will be adhered to:

- The use of treated timber fences and high solid walls (unless enclosing forecourt parking) and high hedge (more than 1.5m high) as front boundaries will not be permitted.
- Close-board fencing will not be used in front gardens/ set backs (1a) or to demarcate property boundaries (1b).
- Brick walls or close-board fencing could be used as a linking element between two dwellings (1c) but must be set back from the face wall of the dwelling by a minimum of 1m.
- Gates for pedestrian or vehicular access must be co-ordinated with the suitable adjoining front boundary treatment.
- All walls and railings are to be stepped to match slope / gradient.

Side boundary

2a. Side boundary facing public realm

2b. Side boundary between dwellings

- Side boundaries which address a street, public realm or mews, must be constructed of brick to provide continuity with the main built form (2a). The wall must not be more than 2.1m high and brick should match the dwelling, including its bonding and mortar details. Coping stones or a 'brick on edge' detail is considered appropriate. Walls will be of a consistent height. Brick boundary walls must be stepped if following a slope.
- A 500mm wide minimum planting zone is to be provided alongside the boundary wall to the back edge of the footpath. Where this is proposed alongside a public pedestrian path not associated with a highway, a minimum of 1.5m wide verge is to be incorporated to meet 'Secure by Design' requirements, and to limit opportunities for concealment.
- Timber fencing or brick walls will be used alongside boundaries between gardens or side access of dwellings (2b). This will not be more than 1.8m in height. Timber should be stained using a suitable and sustainable treatment.

Rear boundary

3a. Rear boundary between back gardens or courtyard

3b. Rear Boundary between back gardens and rear access parking courts

3c. Rear boundary to gardens abutting phasing boundary

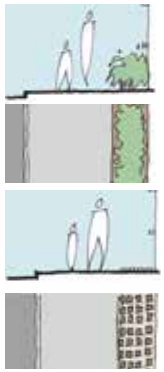
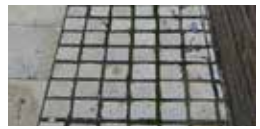
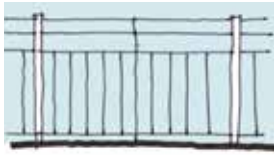
1.8m high timber close or featherboarded fencing may be used along rear boundaries between gardens (3a). Timber should be stained using a suitable and sustainable treatment.

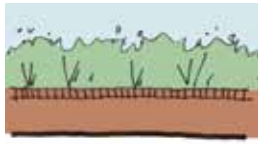
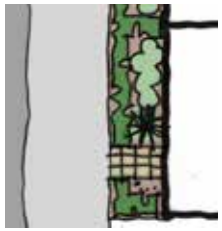
- Brick walls must be used to define rear boundaries that back onto courtyard parking areas (3b). Such walls will be between 1.8 - 2.1m high and stepped to match the slope profile.
- Timber fencing up to a maximum height of 1.5m with a 300mm trellis above, will be used for rear boundaries abutting successive phases of development (3c).

2a, 2b, 3b

3a, 2b

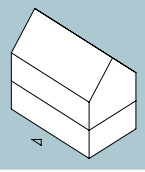
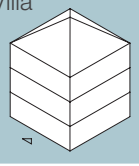
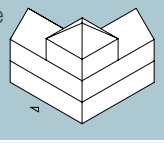
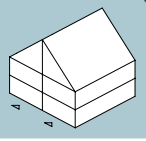
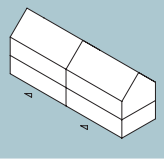
3c

Typologies	Illustration	NOT permitted in the following Character areas	Description	Notes	Examples
B1. No boundary	Plan:  Plan:	Eastern Gateway	• Set back is less than 1m (minimum 800mm to be maintained) • Hard-surface finish preferable for urban character areas • Material / surface finish should be contrasting to adjoining pavement material to differentiate ownership and demarcate defensible space • Where soft finish is provided, area should be finished with 450mm depth of topsoil to allow for low evergreen shrubs • Grass or gravel or loose materials as surface cover are not acceptable		 
B2. Urban-style railing			• Height – 1.2m max • Set back minimum 1.5m • Black / grey metal, painted • Soft landscape to allow for shrubs planting • Contemporary and in character with the street scene • Stepped	Property demarcation (1b) to be created through the same design of urban-style railing or ornamental hedge	
B3. Railing on low wall			• Height – 1.5m max • Set back minimum 1.5m • Up to 300mm high brick wall, Brick wall with brick piers & coping to match dwelling • Powder coated black or grey railings • Privacy zone – hard or soft landscape finish, to allow for shrub planting, maintained at a height of 1.5 m • Stepped • Gates to match railings	Property demarcation (1b) to be created through a same low height brick wall with the same railing OR ornamental hedge	
B4. Railing & hedge			• Height – 1.2m max • Set back minimum 1.5m • Black metal painted (or grey) • Clipped hedge of continuous species • Gates to match railings	Property demarcation (1b) to be created through same railing OR ornamental hedge	

Typologies	Illustration	NOT permitted in the following Character areas	Description	Notes	Examples
B5. Low wall & ornamental hedge		☒ Eastern Gateway	• Set back minimum 1.5m • 600mm brick wall with brick coping, clay tiles creasing, bricks to match dwelling • Hedge to grow not more than 900mm high • Stepped	Property demarcation (1b) to be created through same height low-brick wall with hedge OR ornamental hedge only.	
B6. Ornamental hedge		☒ Eastern Gateway	• Height – 0.9 / 1.2 m max • Set back minimum 2m • Post and wire fence integral to the hedge while it establishes	Property demarcation (1b) to be created through ornamental hedge of similar species and height	
B7. Planted zone	Plan: 	☒ Eastern Gateway	• Height – maximum 600mm • Low-clipped hedge with shrub planting	Property demarcation (1b) to be created through ornamental hedge of at least 600m in height	

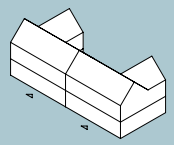
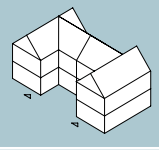
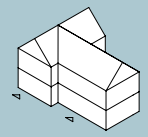
5.6 Residential Typologies Matrices A-D

MATRIX A

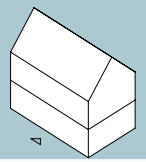
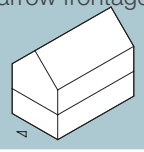
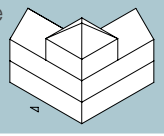
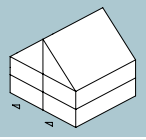
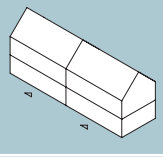
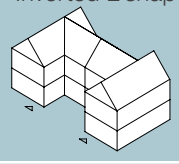
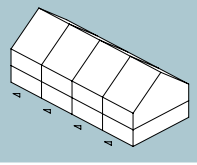
Typologies	Height	Set back	Parking	Boundary Typologies
D1 - Wide Frontage 	2-2.5 storey	1-4m	P2 - On-plot corner P3 - On-plot between buildings P8 - Forecourt	The following boundary typologies are to be be used for all dwellings along edges labelled A: B1 - No Boundary B5 - Low wall and ornamental hedge B6 - Ornamental hedge
D3 - Villa 	2-2.5 storey	1-4m	P2 - On-plot corner P3 - On-plot between buildings P8 - Forecourt	
D4 - L-shaped/ corner house 	2-2.5 storey	1-4m	P2 - On-plot corner P3 - On-plot between buildings P8 - Forecourt	
SD1 - Narrow frontage 	2-2.5 storey	1-4m	P2 - On-plot corner P3 - On-plot between buildings	
SD2 - Wide Frontage 	2-2.5 storey	1-4m	P2 - On-plot corner P3 - On-plot between buildings P8 - Forecourt	

Continued on page below

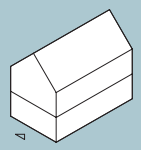
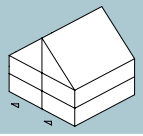
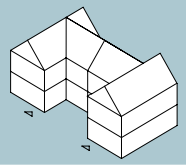
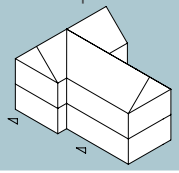
MATRIX A (CONT.)

Typologies	Height	Set back	Parking	Boundary Typologies
SD3 - L - shaped 	2-2.5 storey	2-4m	P2 - On-plot corner P3 - On-plot between buildings P8 - Forecourt	The following boundary typologies are to be used for all dwellings along edges labelled A: B1 - No Boundary B5 - Low wall and ornamental hedge B6 - Ornamental hedge
SD4 - Inverted L-shaped 	2-2.5 storey	2-4m	P1 - On-plot frontage P2 - On-plot corner P3 - On-plot between buildings P8 - Forecourt	
SD6 - T-shaped 	2-2.5 storey	2-4m	P1 - On-plot frontage P2 - On-plot corner P3 - On-plot between buildings P8 - Forecourt	

MATRIX B

Typologies	Height	Set back	Parking	Boundary Typologies
D1 - Wide frontage 	2-2.5 storey	1.5-4m	P2 - On-plot corner P3 - On plot between buildings P9 - Detached car barns	The following boundary typologies are to be used for all dwellings along edges labelled B: B1 - No Boundary B5 - Low wall and ornamental hedge B6 - Ornamental hedge B7 - Planted zone
D2 - Narrow frontage 	2-2.5 storey	1.5-4m	P2 - On-plot corner P3 - On plot between buildings P9 - Detached car barns	
D4 - L-shaped / corner house 	2-2.5 storey	1.5-4m	P2 - On-plot corner P3 - On plot between buildings P9 - Detached car barns	
SD1 - Narrow frontage 	2-2.5 storey	1.5-4m	P2 - On-plot corner P3 - On plot between buildings P9 - Detached car barns	
SD2- Wide frontage 	2-2.5 storey	1.5-4m	P2 - On-plot corner P3 - On plot between buildings P9 - Detached car barns	
SD4 - Inverted L-shaped 	2-2.5 storey	1.5-4m	P2 - On-plot corner P3 - On plot between buildings P9 - Detached car barns	
T1 - Narrow frontage 	2-2.5 storey	1.5-4m	P2 - On-plot corner P3 - On plot between buildings P6 - Front access drive through P7 - Parking courts P9 - Detached car barns	

MATRIX C

Typologies	Height	Set back	Parking	Boundary Typologies
D2 - Narrow frontage 	2-2.5 storey	1-3m	P2 - On-plot corner P3 - On plot between buildings P9 - Detached car barns	The following boundary typologies are to be used for all dwellings along edges labelled C: B1 - No boundary B5 - Low wall and ornamental hedge B6 - Ornamental hedge B7 - Planted zone
SD1 - Narrow frontage 	2-2.5 storey	1-3m	P2 - On-plot corner P3 - On-plot between buildings P5 - Mews P7 - Rear parking court P9 - Detached car barns	
SD4 - Inverted L-shaped 	2-2.5 storey	1-3m	P2 - On-plot corner P3 - On-plot between buildings P5 - Mews P7 - Rear parking court P9 - Detached car barns	
SD6 - T-shaped 	2-2.5 storey	1-3m	P2 - On-plot corner P3 - On-plot between buildings P5 - Mews P7 - Rear parking court P9 - Detached car barns	

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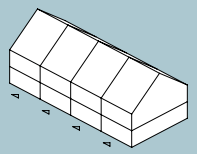
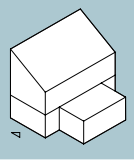
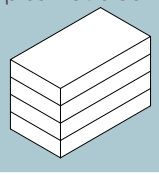
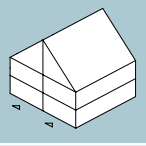
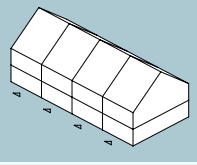
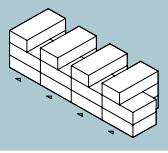
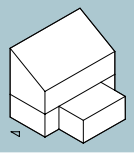
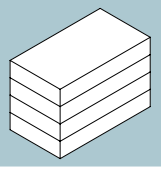
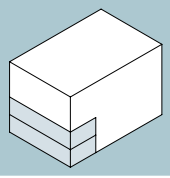
MATRIX C (CONT.)

Typologies	Height	Set back	Parking	Boundary Typologies
T1 - Narrow frontage 	2-2.5 storey	1-3m	P2 - On-plot corner P3 - On-plot between buildings P5 - Mews P6 - Front access drive through P7 - Rear parking court P9 - Detached car barns	The following boundary typologies are to be used for all dwellings along edges labelled D: B3 - Railing on low wall B4 - Railing and hedge B6 - Ornamental hedge
D5 - Linked detached 	2-2.5 storey	1-3m	P2 - On-plot corner P3 - On-plot between buildings P5 - Mews P7 - Rear parking court P9 - Detached car barns	
F2 - Typical flat block 	2-2.5 storey	1-3m	P3 - On-plot between buildings P5 - Mews P6 - Front access drive through P7 - Rear parking court	

MATRIX D

Typologies	Height	Set back	Parking	Boundary Typologies
SD1 - Narrow frontage 	2-3 storey	1-2.5m	P3 - On-plot between buildings P5 - Mews P6 - Front access drive through P7 - Rear parking courts	The following boundary typologies are to be used for all dwellings along edges labelled E: B2 - Urban style railing B3 - Railing on low wall B4 - Railing and hedge B5 - Low wall and ornamental hedge B6 - Ornamental hedge
T1 - Narrow frontage 	2-3 storey	1-2.5m	P3 - On-plot between buildings P5 - Mews P6 - Front access drive through P7 - Rear parking courts	
T3 - Stepped/ L - shaped 	2-3 storey	1-2.5m	P3 - On-plot between buildings P5 - Mews P6 - Front access drive through P7 - Rear parking courts	
D5 - Linked detached 	2-3 storey	1-2.5m	P3 - On-plot between buildings P5 - Mews P6 - Front access drive through P7 - Rear parking courts	
F2 - Typical flat block 	2-3 storey	1-2m	P3 - On-plot between buildings P5 - Mews P6 - Front access drive through P7 - Rear parking courts	
F3 - Duplex 	2-3 storey	1-2m	P3 - On-plot between buildings P5 - Mews P6 - Front access drive through P7 - Rear parking courts	

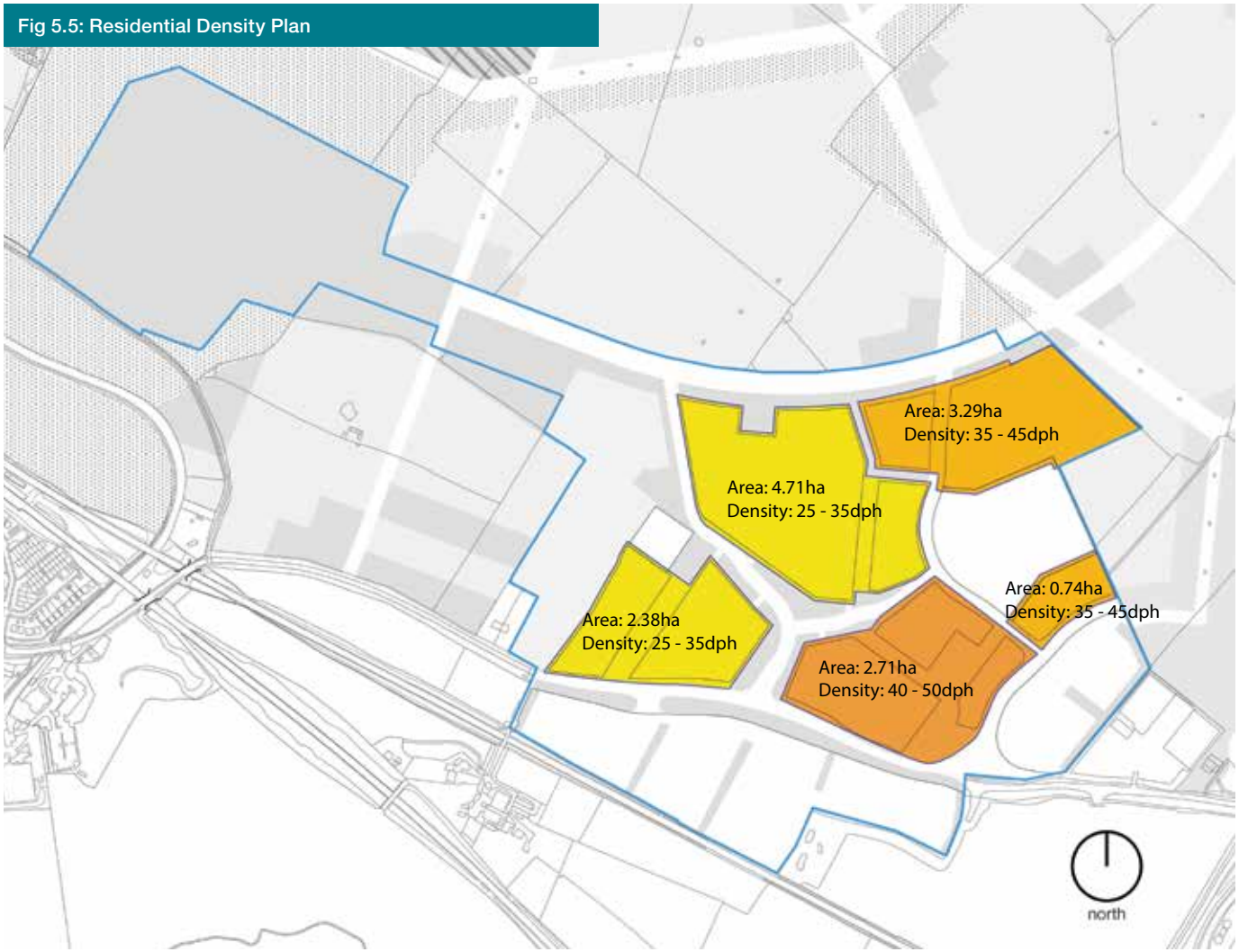
5.7 Residential Density

The density at which the residential parcels are designed will have an impact on how the KP1 development feels as a place. Lower density parcels will feel quite open, with space for larger front gardens, tree-lined streets and green open spaces. Higher-density parcels will feel more compact and urban, with less space for large gardens and green verges. It is important to remember that the parcels are relatively small and surrounded on many sides by open green spaces.

The adjacent plan in Fig 5.7 sets out guidance on density ranges for development parcels.

To create a level of diversity and a range of street and house type, the density across KP1 ranges between 25 and 50 dwellings per hectare (dph).

Fig 5.5: Residential Density Plan



* Please refer to chapter 6: Mixed Use Built Form for guidance on all mixed use areas.

5.8 Key Grouping - The Gateway

The gateway to KP1 to the east of the site is highlighted as a key grouping on the Regulatory Plan, as an area which requires special attention to design. The gateway will set a precedent for the KP1 development and therefore the integration of movement routes, landscaping and residential and commercial built form is crucial to creating a high quality first impression.

The following design principles describe the layout, massing and composition of this key area. All design principles will be adhered to; the illustrations (see Figures 5.8, 5.9 and 5.10) describe how this can be achieved.

Design Principles

- An attractive and diverse landscape design will create a natural setting to The Gateway, including orchards, retained hedgerows and meadow planting.
- A B1 office building located north west of The Gateway roundabout will positively address this prominent corner.
- Residential dwellings will positively address the landscape setting to The Gateway, with entrances along this prominent frontage.
- Pedestrian crossing points will connect to the wider strategic network of routes within KP1 and the existing context.
- Long views through to the wildlife corridors will be provided to create glimpsed views into the KP1 site.
- A focal residential building will be designed to mark the entrance to KP1, this building will be three storeys in height and will positively address both the street and the green space onto which it faces.

Fig 5.6: The Gateway - Indicative Design Principles Plan

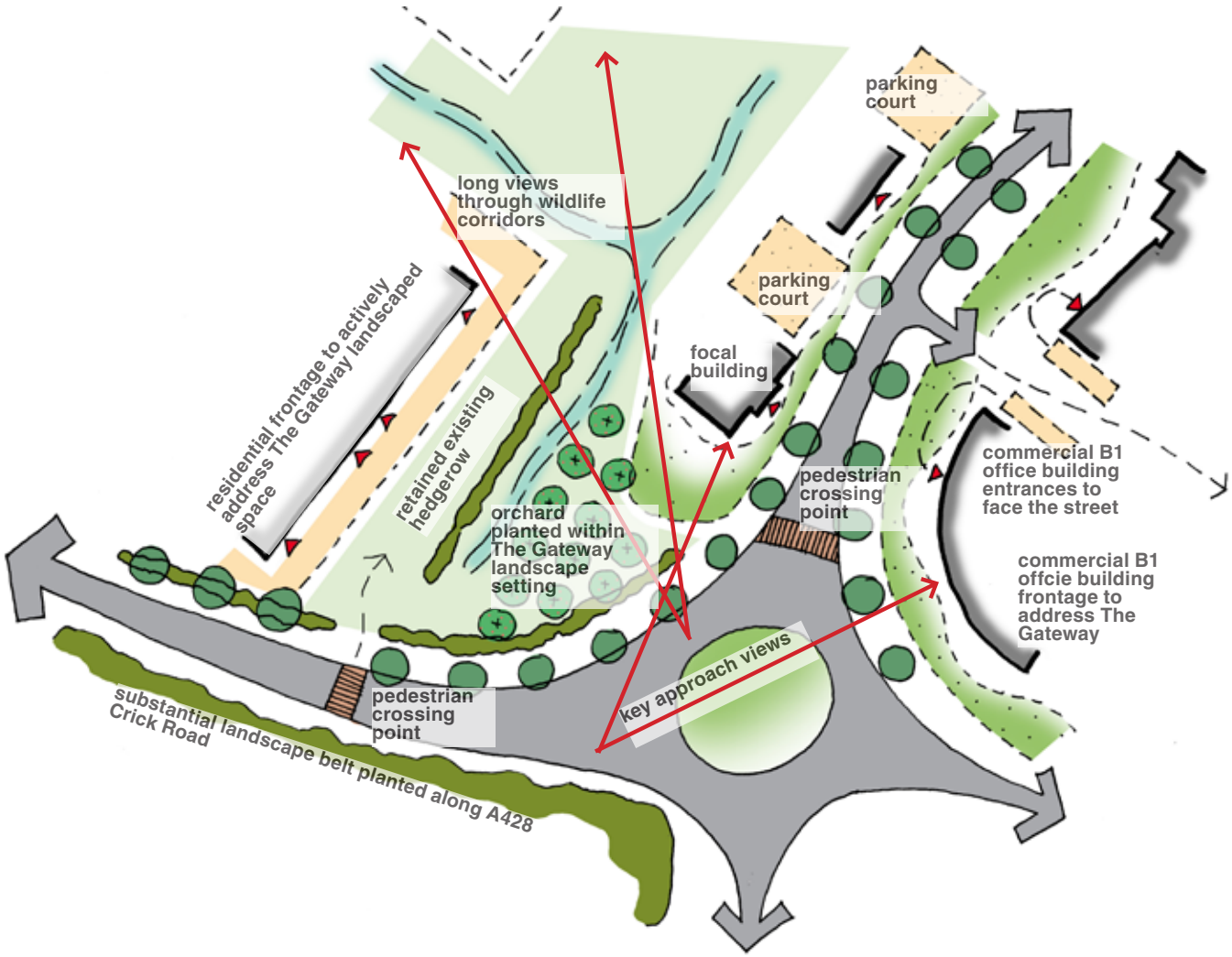


Fig 5.7: Indicative Axonometric View of The Gateway looking north

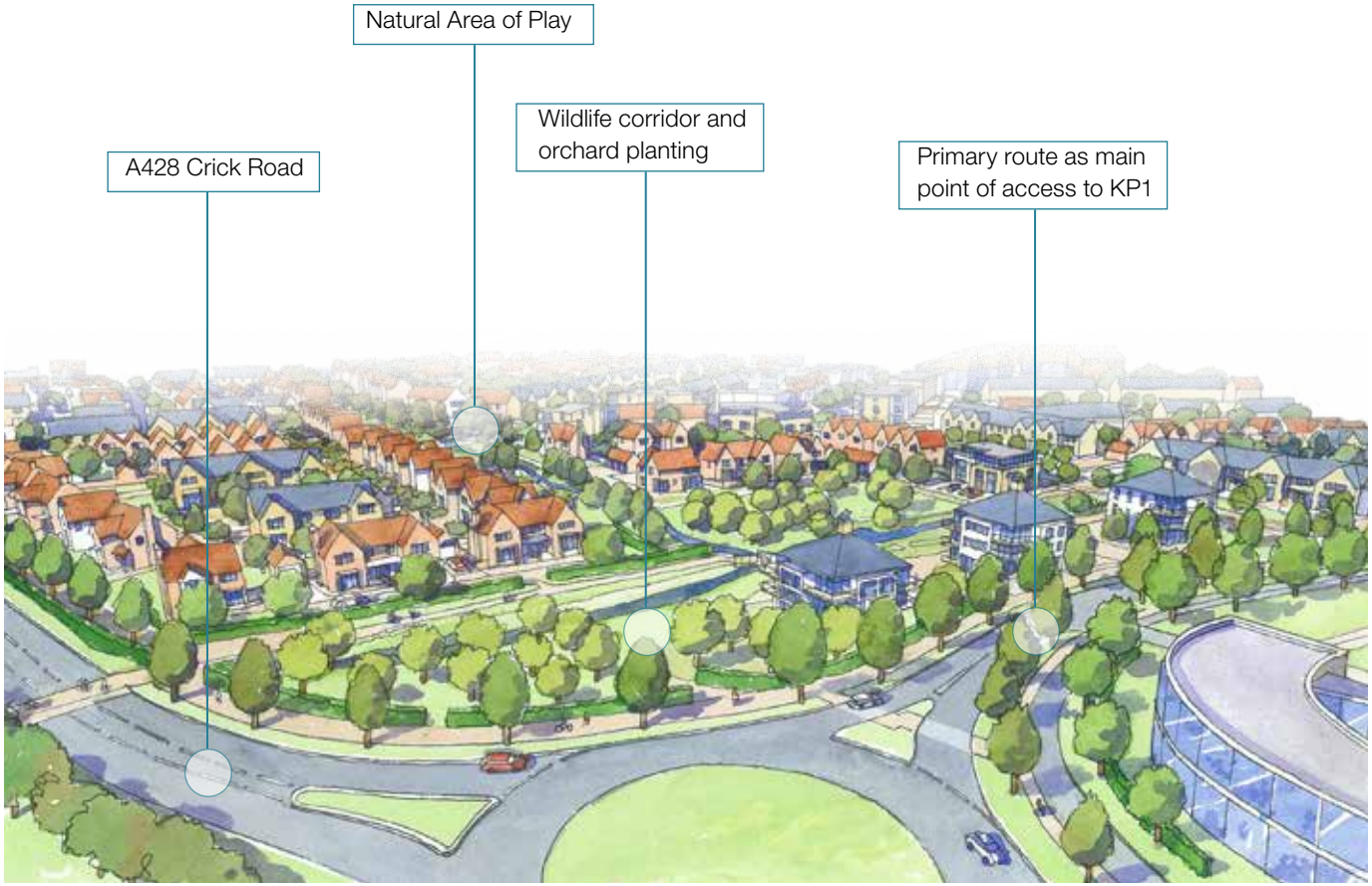


Fig 5.8: Indicative Layout: Extract from Illustrative Masterplan

5.9 Residential Illustrative Groupings Guidance

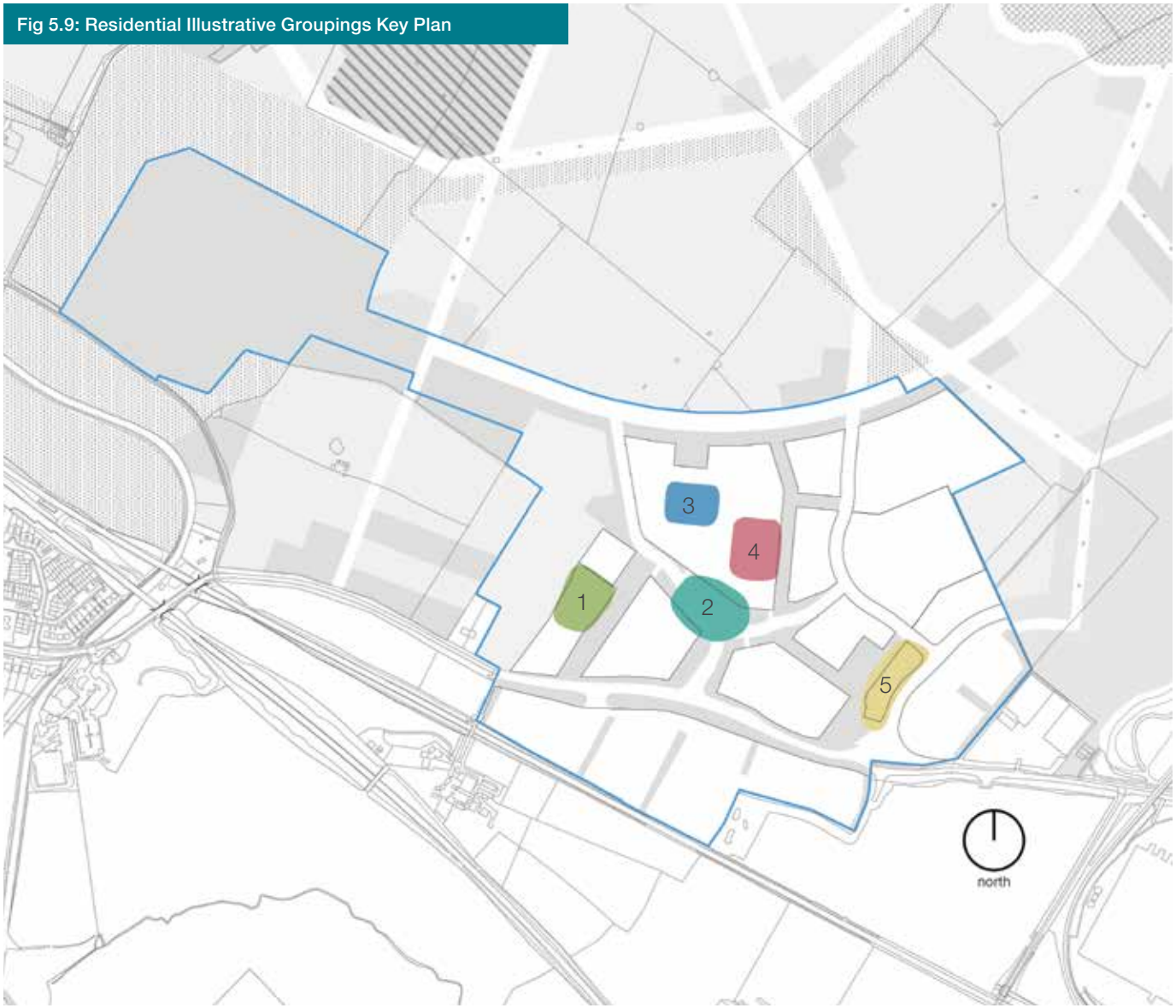
Illustrative groupings suggest how typologies, plot layout components and green space can be arranged.

Reserved Matters Applications will demonstrate how the relevant illustrative groupings have been considered and incorporated within the design.

The illustrative groupings are an indication of how dwellings can be grouped together but the detailed design of these types of groupings will need to be fully developed alongside detailed matters including a refuse strategy and consideration of lighting/adoptability. The document provides guidance on lighting and refuse collection in the latter chapters (8 & 9 respecitvely).

Illustrations for each of the illustrative groupings shown in Fig. 5.11, right, are presented on the following pages, see indicative axometric views in Figures 5.12 to 5.16.

Fig 5.9: Residential Illustrative Groupings Key Plan



Key

1 - Orchard Edge

2 - Dollman Common

3 - Pocket Park

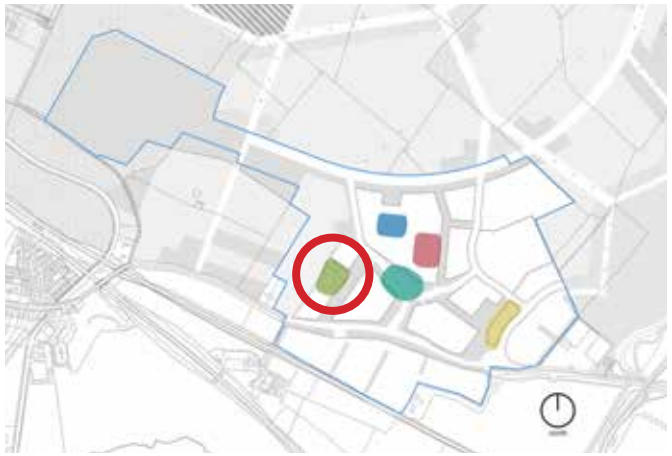
4 - Wildlife Corridor Edge

5 - The Pavilions

5.9.1 Illustrative Grouping 1

Orchard Edge

Detached homes with generous gardens are arranged between The Orchard and Central Open Space. Dwellings and garages define the frontage character and a pedestrian route bisects the plot.



Key Plan

Grouping Plan

Fig 5.10: Illustrative Grouping 1: Axonometric View

Note: The design and consideration for refuse collection and storage, lighting, adoption and public access will need to be addressed during the detailed design stage for each Reserved Matters Application.

5.9.2 Illustrative Grouping 2

Dollman Common

Dwellings will provide a defined edge and enclosure to a mature landscape setting. A series of feature buildings act as gatehouses to the interior of the residential parcel. Parking is provided away from the street frontage to allow for a parking free lane along the edge of the common.

Note: The design and consideration for refuse collection and storage, lighting, adoption and public access will need to be addressed during the detailed design stage for each Reserved Matters Application.

Key Plan

Grouping Plan

Fig 5.11: Illustrative Grouping 2: Axonometric View

5.9.3 Illustrative Grouping 3

Pocket Park

Compact dwellings overlook a shared space. Homes have a 1m privacy strip but no front wall, encouraging residents to use the shared green. Parking is provided on-plot to reduce cars within the green space.

Key Plan

Grouping Plan

Note: The design and consideration for refuse collection and storage, lighting, adoption and public access will need to be addressed during the detailed design stage for each Reserved Matters Application.

Fig 5.12: Illustrative Grouping 3: Axonometric View

5.9.4 Illustrative Grouping 4

Wildlife Corridor Edge

Short terraces of dwellings overlook the 20m wide wildlife corridor. Rear parking barns and garages are provided to allow for a parking-free lane along the edge of the corridor.

Key Plan

Grouping Plan

Note: The design and consideration for refuse collection and storage, lighting, adoption and public access will need to be addressed during the detailed design stage for each Reserved Matters Application.

Fig 5.13: Illustrative Grouping 4: Axonometric View

5.9.5 Illustrative Grouping 5

The Pavilions

Blocks of apartments are arranged as pavilions in a landscaped space. The three-storey pavilions share a communal car park with parking spaces laid out in short runs.

Key Plan

Grouping Plan

Note: The design and consideration for refuse collection and storage, lighting, adoption and public access will need to be addressed during the detailed design stage for each Reserved Matters Application.

Fig 5.14: Illustrative Grouping 5: Axonometric View

Chapter 6

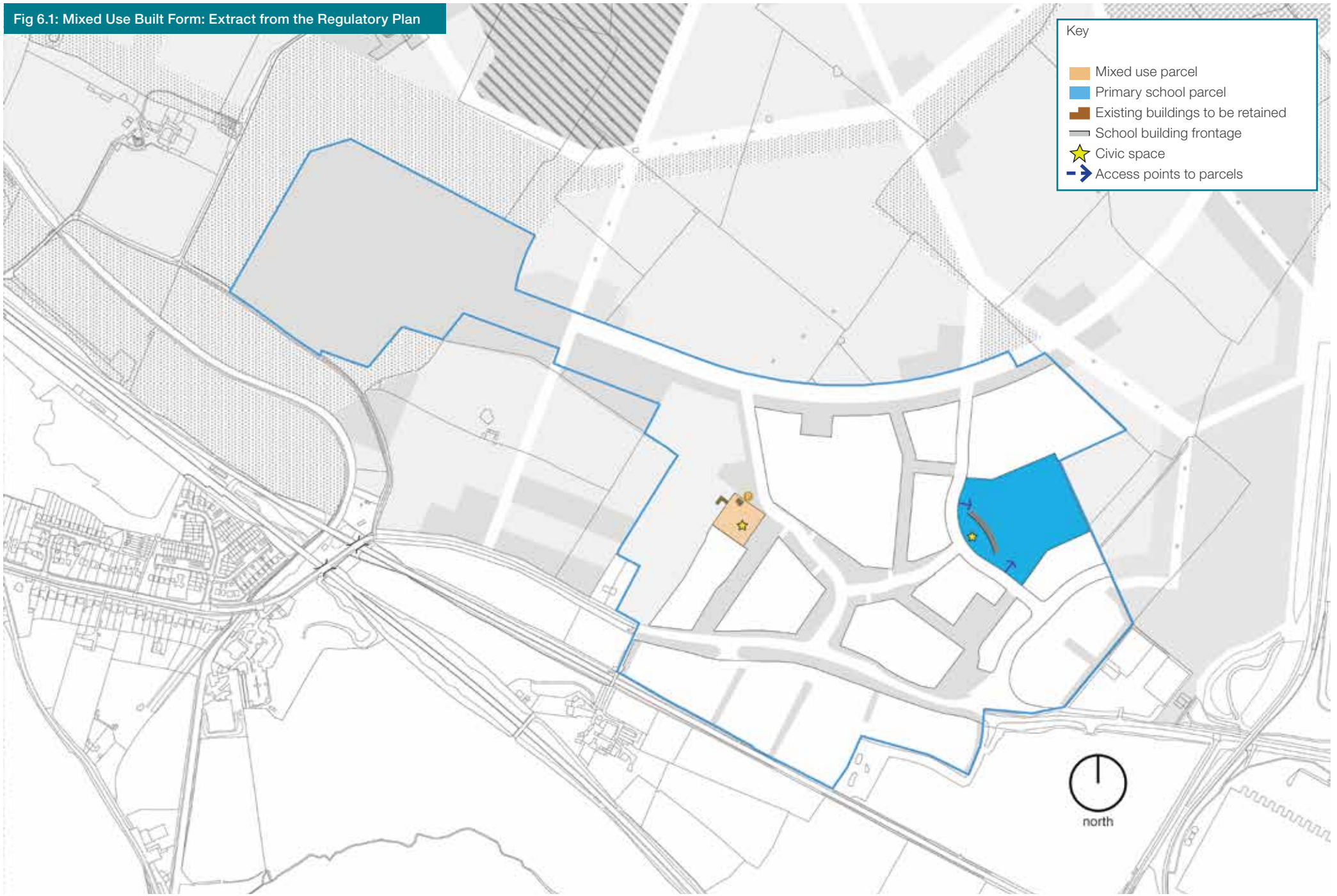
Mixed Use Built Form

Chapter 6: Dollman Farm Mixed Use Area and Primary School Mandatory Design Fixes

The mandatory design fixes are set out below and shown on the Regulatory Plan. The Compliance Checklist in Appendix 1 presents a complete list of design-fix headings from the whole Design Guide.

- **Location of mixed use development parcels** as shown on the Regulatory Plan.
- **6.3 Dollman Farm Mixed Use Area** design fixes listed and illustrated by indicative reference figures.
- **6.4 The Primary School Area** design fixes listed and illustrated by indicative reference figures.
- **6.5 Architectural principles for Mixed Use Built Form** listing detailed design considerations.

Fig 6.1: Mixed Use Built Form: Extract from the Regulatory Plan



6.1 Introduction

This chapter of the Design Guide builds on the mixed use design principles set out in the Rugby Radio Station SUE Outline Planning Application and Parameter Plans. The overarching vision for the Rugby Radio Station SUE is to create a truly mixed use development that encourages people to undertake many of their day-to-day trips within the site, such as trips to work, education, day to day shopping and community uses. Connecting the mixed use assets across the site supports a vibrant community life based on active streets and accessible facilities.

This chapter of the guide will introduce the two mixed use areas of KP1. It will establish the rules that determine how these areas are arranged and explain design and massing principles. A number of drawings within this chapter illustrate how the area could look and are for guidance only.

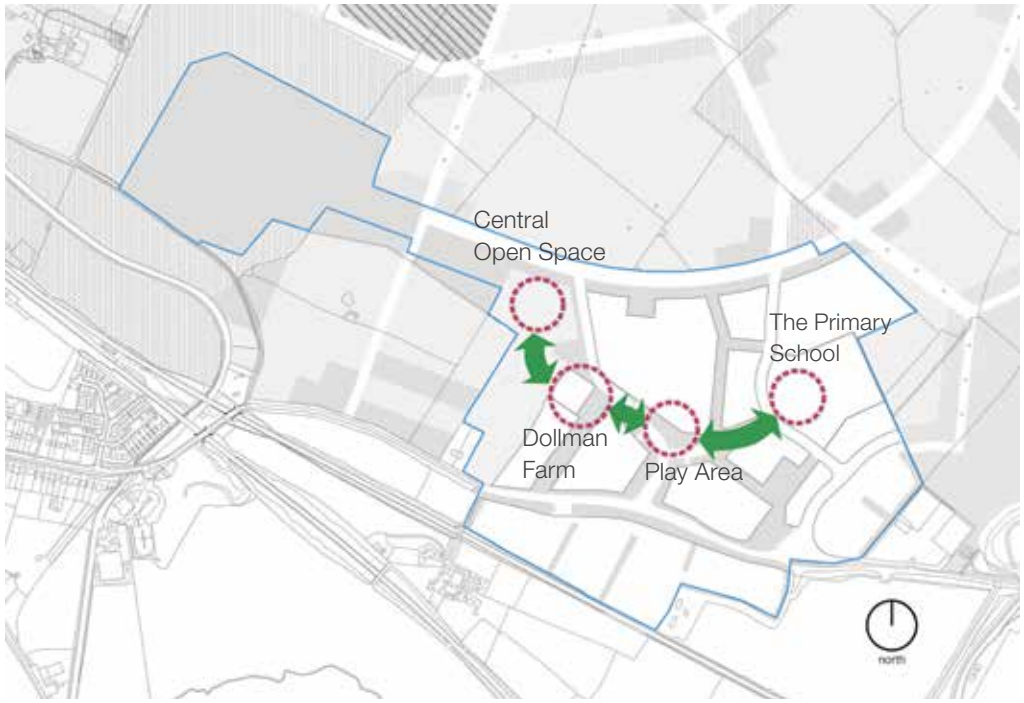


Fig 6.2: Connecting the Assets

6.2 Mixed Use Character Areas

Each mixed use area is specific to its location and are therefore explained individually. Figure 6.3 (opposite page) shows the location of the mixed use character areas, as listed below.

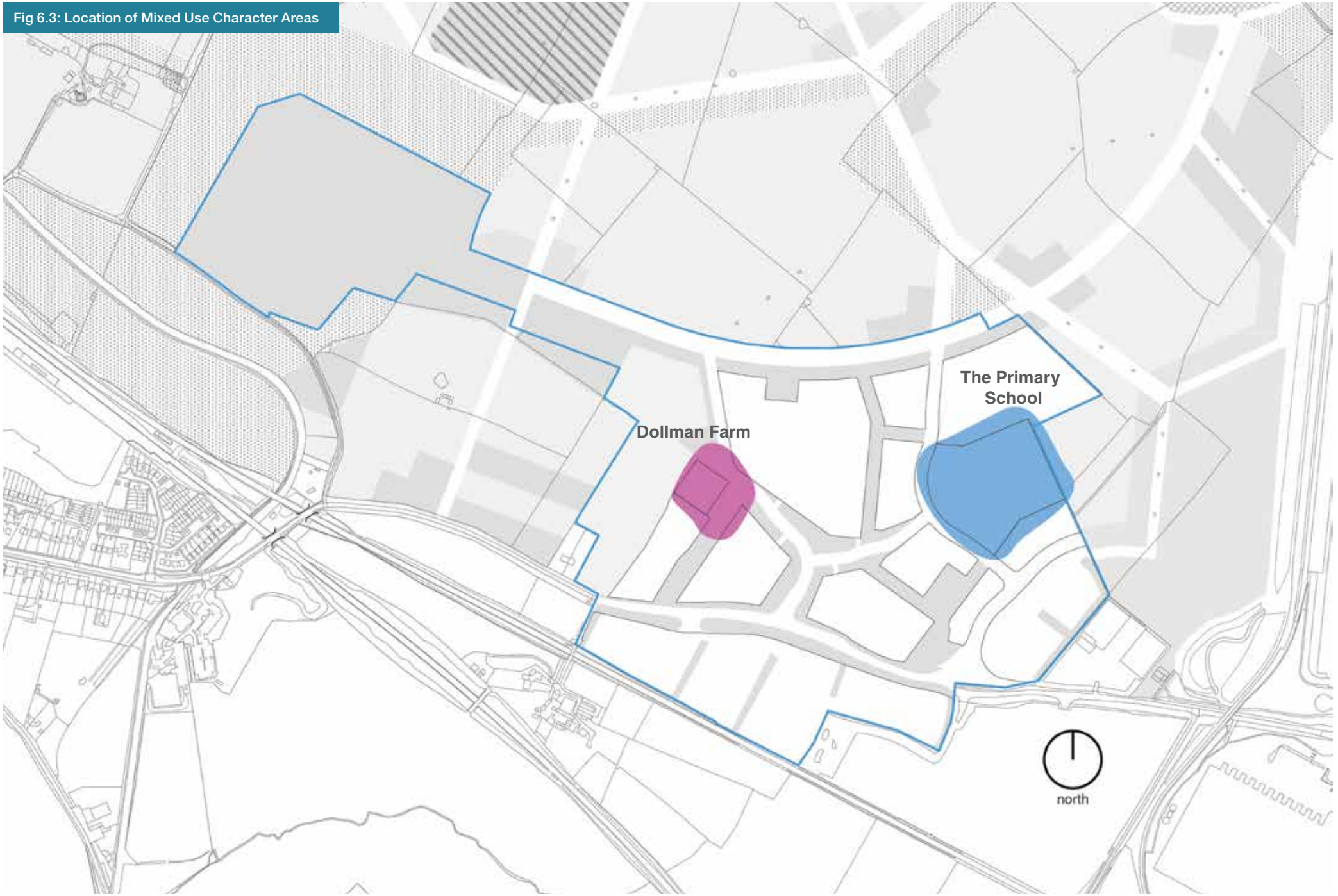
Dollman Farm

A collection of buildings arranged around the existing buildings at Dollman Farm. A range of land uses could be accommodated including potential for a shop and café and cater for the surrounding green spaces such as the community orchard, allotments and playing fields in the central open space.

The Primary School

The primary school will be a major attraction and it sits in a prominent position on the KP1 site along a primary route. Staff parking is provided within the school grounds as is a drop off and pick up area.

Fig 6.3: Location of Mixed Use Character Areas



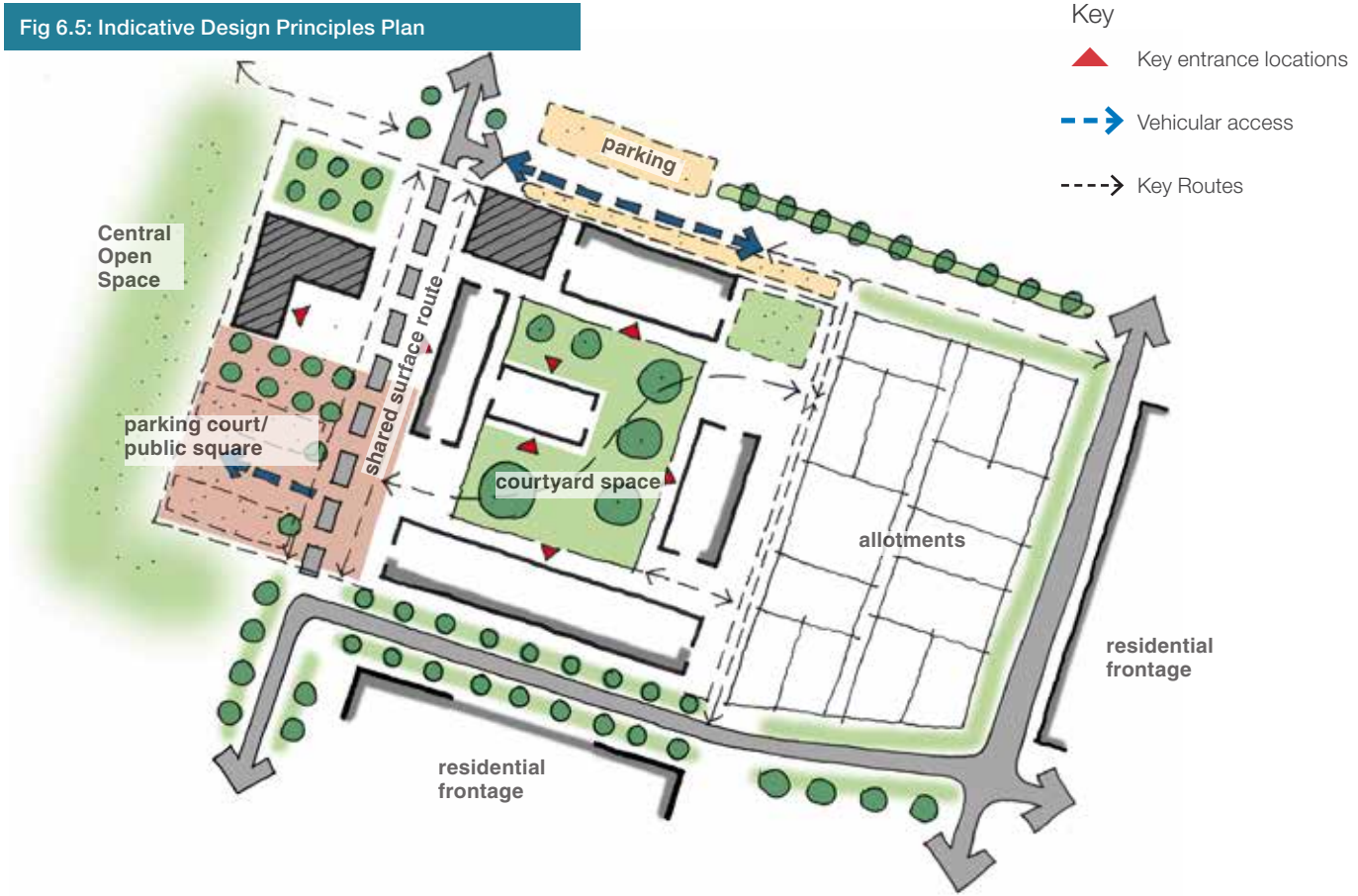
6.3 Dollman Farm

Flg 6.4 Location Plan

Dollman Farm will provide mixed use development in the western part of KP1. It is centred upon two buildings that are to be retained: a 19th century two-storey brick farmhouse and a single storey L-shaped brick barn out building. The buildings have a key position within the KP1 proposals, as they will address the Central Open Space to the west and the allotments and community orchard to the south and east.

Dollman Farm will incorporate sensitive extensions to the existing buildings and provision of new buildings.

Fig 6.5: Indicative Design Principles Plan



Location:

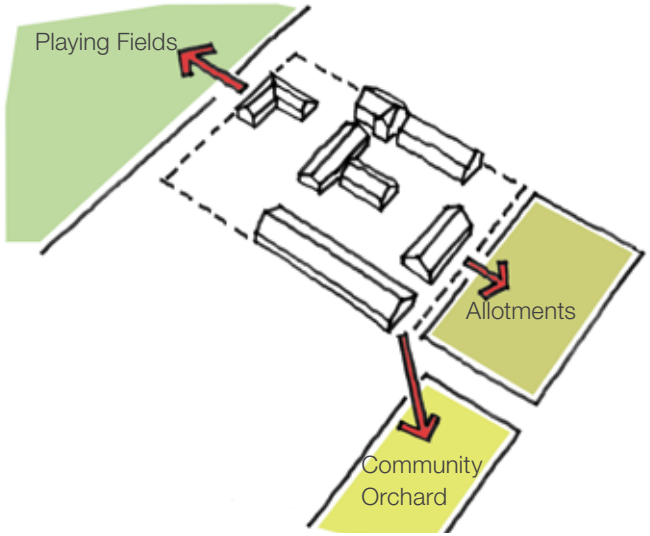
- Position and size of mixed use area fixed on Regulatory Plan

Land Uses

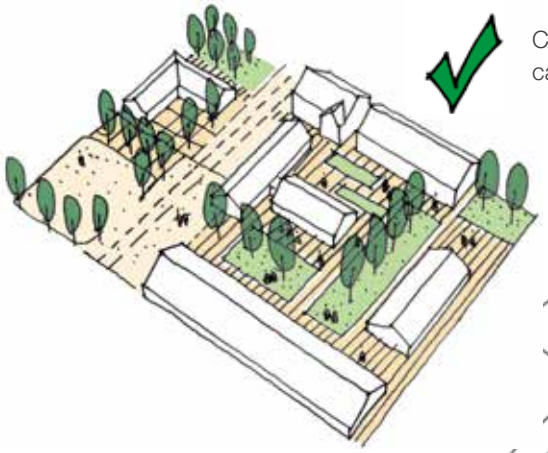
- To ensure vibrancy and viability a mix of uses should be provided in Dollman Farm.
- Dollman Farm is part of a wider area of mixed use defined in the OPA as Local Centre 3.
- In total the land uses within OPA Local Centre 3 (of which Dollman Farm is part) shall include:
  - A1 (retail) - up to 500sqm;
  - A3/A4/A5 (restaurants, pubs/bars) - up to 250sqm;
  - B1 (offices) - up to 7,200sqm;
  - C3 (residential);
  - D1 (non-residential institution not including Primary/Secondary School) - up to 300sqm. This could include a community farm, community meeting space, changing rooms / pavilion associated with the central open space;
- Dollman Farm could include a proportionate range of floorspace in accordance with, and not exceeding, the figures for Local Centre 3.

6.3.1 Dollman Farm Layout and Massing Principles

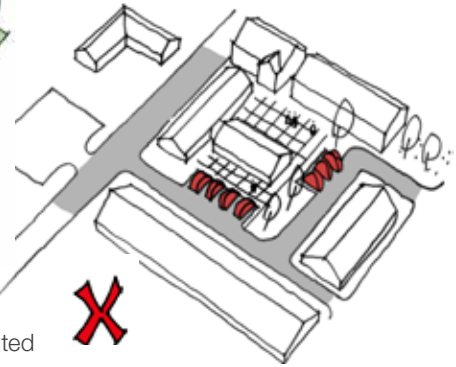
1. Building Uses to Complement Surrounding Uses



2. Creating a Place

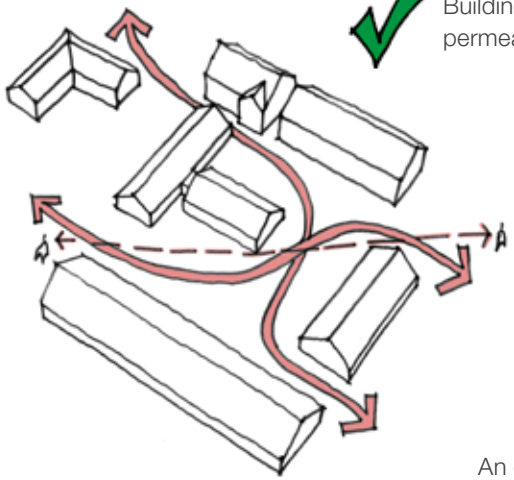


Create a series of small car free spaces

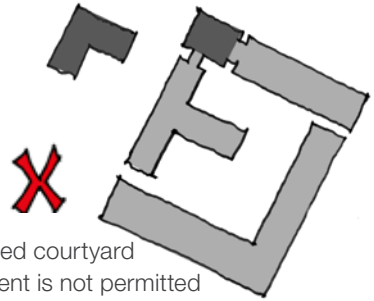


Parking and vehicular routes though the farm are not permitted

3. Permeability

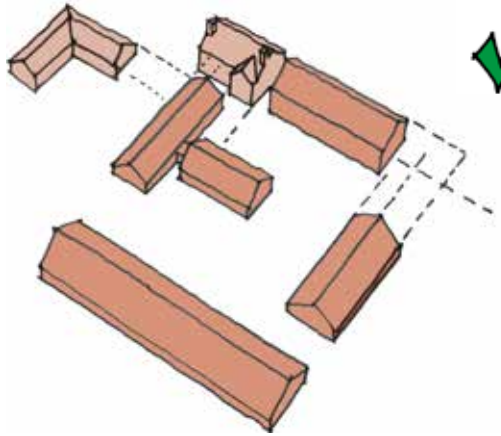


Buildings should allow for pedestrian permeability and views through the Farm



An enclosed courtyard arrangement is not permitted

4. Respecting the Existing Buildings



New buildings must respect and relate to the scale and massing of the existing buildings

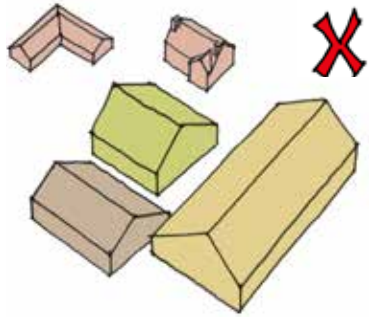


Fig 6.6: Indicative Axonometric View of Dollman Farm looking south

Fig 6.7: Indicative Layout: Extract from Illustrative Masterplan

Design approach:

- Retention and conversion of the farmhouse building;
- Retention and conversion of the L-Shaped redbrick barn located to the west of the farmhouse;
- New buildings should complement the existing buildings and must be arranged as per the layout principles.
- A central civic space, or series of smaller spaces, should be created as a focal point for the mixed use area, a setting for the mixture of retained and proposed buildings.
- Building height limited to 12m in total (see 9.2 for more details on building heights);
- Buildings orientated with active frontages to address adjacent open spaces and community uses, with plant rooms/servicing located away from key spaces.
- Parking will be positioned to the north and west with the courtyard spaces car free.
- The location for parking for the sports pitches is shown on the Regulatory Plan.

Fig 6.8: Indicative view of Dollman Farm

English Heritage regional headquarters, Cambridge

Contemporary and historic buildings, Health Centre, Cheltenham

6.4 The Primary School

The primary school is located in a prominent position in KP1 with good physical and visual relationship with the community facilities at Dollman Farm.

Location:

- Position and size of the primary school is fixed on Regulatory Plan.

Design approach:

- The primary school will be located in a prominent position on the eastern edge of the Key Phase 1 site, along a primary road.
- The school building is to address the western edges of its site allowing the school playground and playing fields to sit to the east.
- The entrance to the school will be from the western side.
- The school will be connected to a network of cycle and footways to encourage walking to and from school.
- It will also be served by a bus service along the primary road.
- Building height limited to 12m for the Primary School site (see 9.2 for more details on building heights);
- The School building represents a local landmark for the scheme in a prominent position. Code-breaking elements and architectural features which allow the school to be established as a distinct landmark will be considered at reserved matters stage as part of the detailed school evolution.

Fig 6.11: Indicative Layout: Extract from Illustrative Masterplan

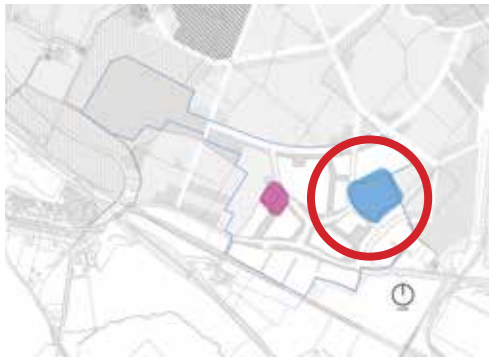


Fig 6.9: Location Plan

Fig 6.10: Indicative Design Principles Plan

Fig 6.12: Indicative View of the Primary School area

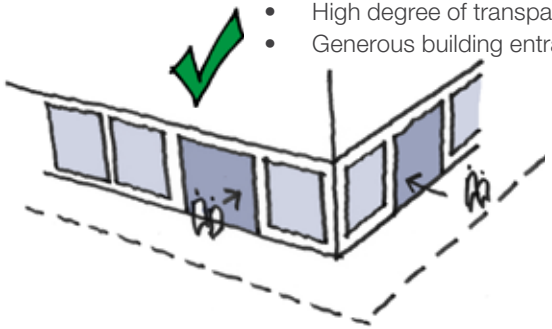
Distinctive architecture to highlight key building entrances, Peter Scott Centre, Barnes

Generously glazed facades overlooking play areas, John Perryn Primary School, London.

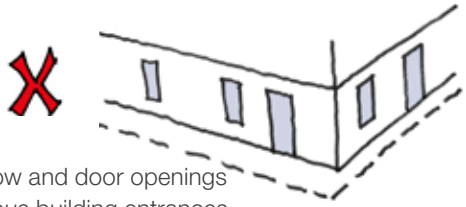
Smaller spaces directly outside classrooms, Takely Primary School, Essex

6.5 Architectural Principles for Mixed Use Built Form

1. Non Residential Active Frontages

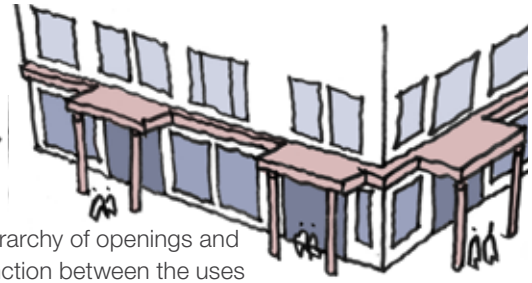


- High degree of transparency
- Generous building entrances

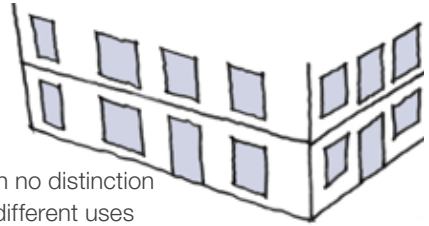


- Small window and door openings
- Inconspicuous building entrances

2. Distinction Between Uses

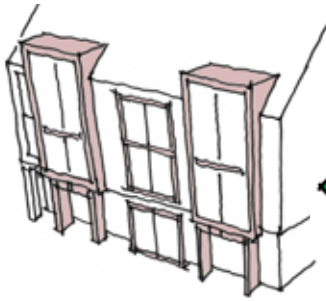


- A hierarchy of openings and distinction between the uses

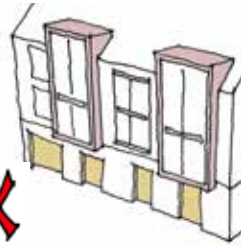


- Repetitive with no distinction between the different uses

3. Design Coherance Between Uses



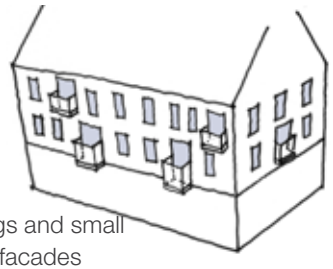
- Building facades designed in unison
- Building elements interrelate over floor levels



- Building facades designed in isolation
- Lack of interrelation over floor levels

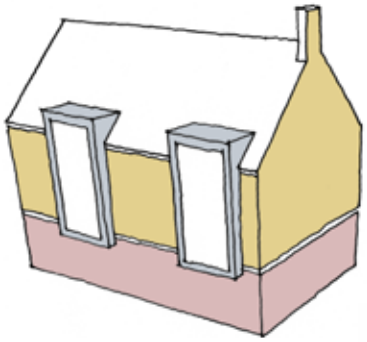
4. Windows and Balconies

- Generous openings and balconies on primary facades

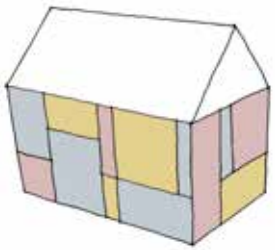


- small window openings and small balconies on primary facades

5. Form and Materials



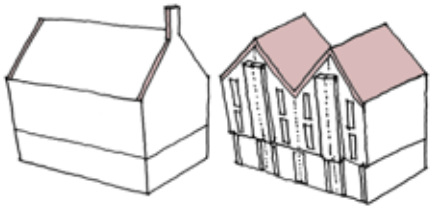
- Clear materiality logic with material changes for specific built elements



- Illogical and random material changes

6. Roof Form

- Simple and coherent roof forms which relate to the building form.



- Overcomplicated forms
- Overly decorative or excessively overhanging eaves

Chapter 7

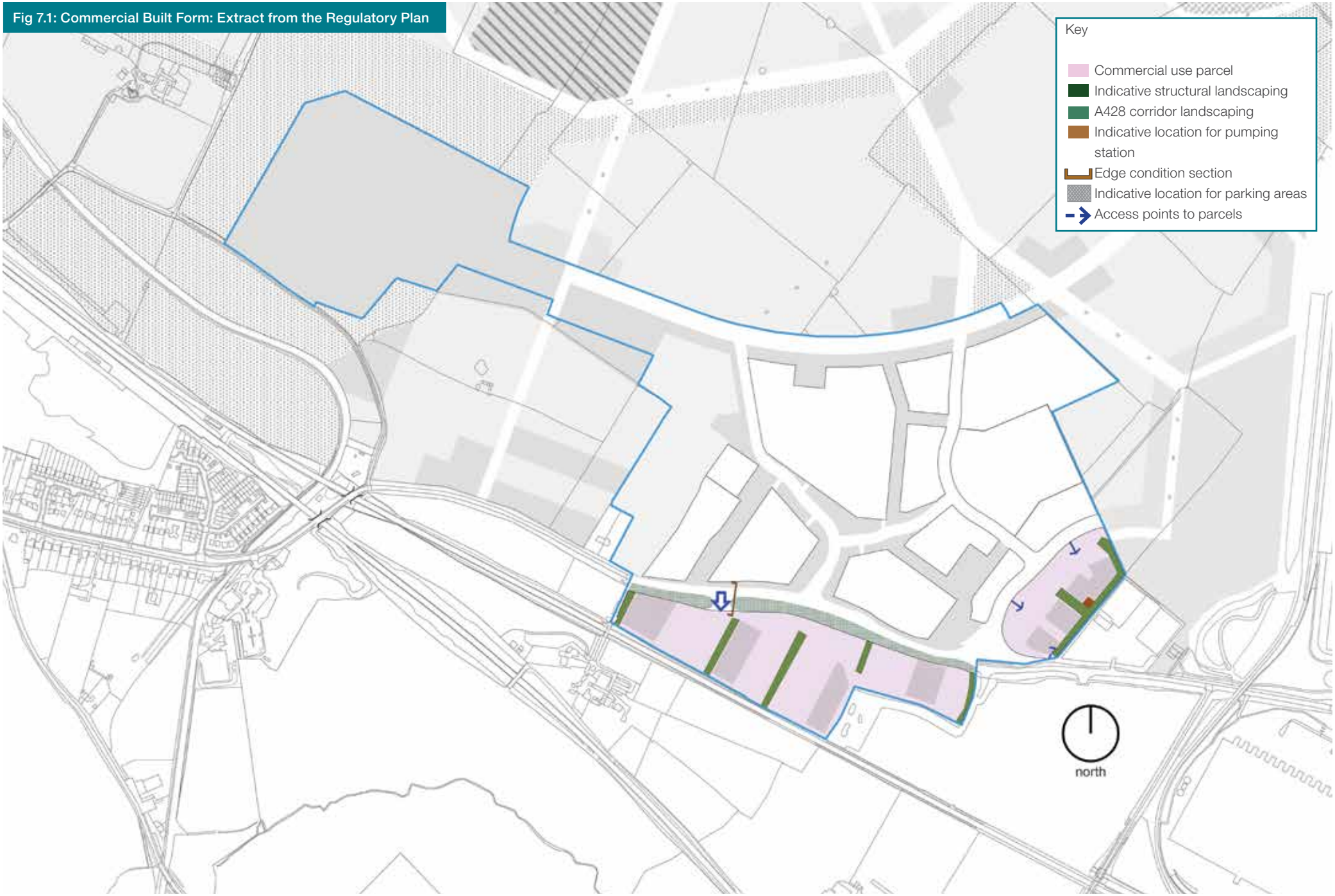
Commercial Built Form

Chapter 7: Commercial Built Form Mandatory Design fixes

The mandatory design fixes are set out below and shown on the Regulatory Plan. The Compliance Checklist in Appendix 1 presents a complete list of design fix headings from the whole Design Guide.

- **Location of commercial development parcels** as shown on the Regulatory Plan.
- **7.3 'Addressing the Street' Commercial Area** design fixes listed and illustrated by indicative reference figures.
- **7.4 'Set in the Landscape' Commercial Area** design fixes listed and illustrated by indicative reference figures.

Fig 7.1: Commercial Built Form: Extract from the Regulatory Plan



7.1 Introduction

This section of the Design Guide builds on the design principles for commercial development as set out in the RRS SUE OPA and Parameter Plans.

KP1 provides dedicated employment land with a total area of circa. 8 hectares (19.8acres). This dedicated employment land consists of land south of the A428 (an area of circa. 5.8 hectares / 14.3 acres) and an area north of the A428, to the east of the KP1 gateway entrance (circa. 2.2 hectares / 5.4 acres). This section of the Design Guide explains how the commercial areas are positioned. It also sets out design principles for the positioning of buildings, how they are accessed and how parking is arranged. Importantly, this chapter sets out how boundaries are to be addressed and how commercial uses are to interface with adjacent residential parcels.

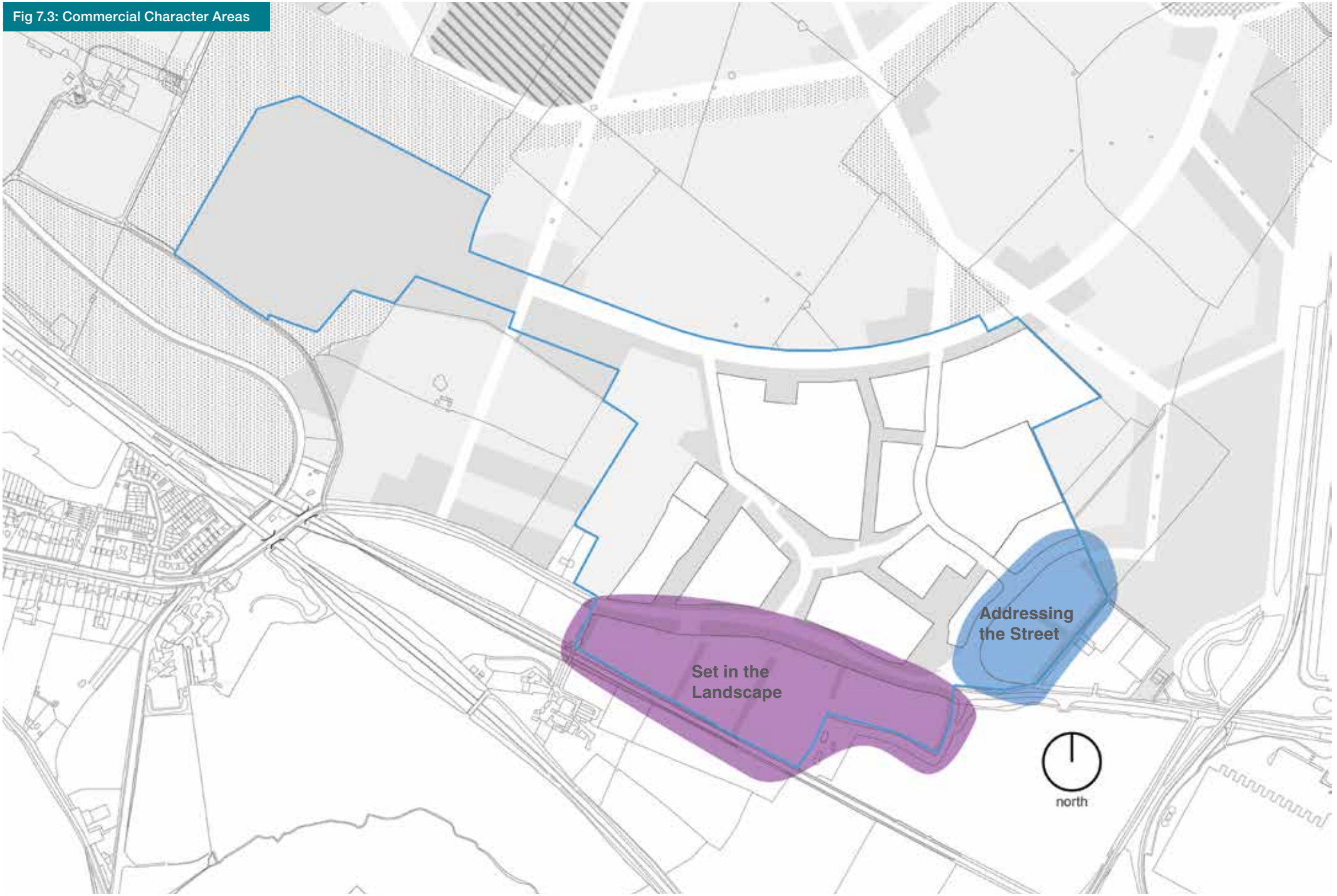
7.2 Commercial Character Areas

Two dedicated commercial land parcels are proposed, one to the south of the A428 Crick Road and one at the eastern extent of the KP1 site. These parcels are identified in Figure 7.1 and 7.3 and are positioned for their proximity to the existing DIRFT and for ease of access from the A428 Crick Road. The character of the commercial parcels is established by their relationship to the street. In the eastern parcel the commercial buildings will positively address the street whilst in the southern parcel the buildings will be set behind a strong landscaped edge.

Fig 7.2 Illustrative KP1 Aerial View - looking towards Normandy Hill to the west

".....two dedicated commercial land parcels are proposed, one to the south of the A428 Crick Road and one at the eastern extent of the Key Phase 1 site."

Fig 7.3: Commercial Character Areas



7.3 Addressing The Street

Fig 7.4: Location Plan

B1 commercial buildings will make a positive contribution to the street frontage and address the residential buildings opposite. The B1 use will act as an effective transition between DIRFT and the primarily residential areas of KP1.

The new rail bridge over the A428 Crick Road has changed the character of the A428 therefore development should respond to this change from large storage depots of DIRFT to more B1 focused use to aid transition to residential uses further along the A428..

Location:

- Position and size of the commercial area fixed on Regulatory Plan.
- Commercial parcel area: approx. 2.2 ha (5.4 acres)

Land Uses:

- B1 (offices) - up to 6,445sqm.

Design approach:

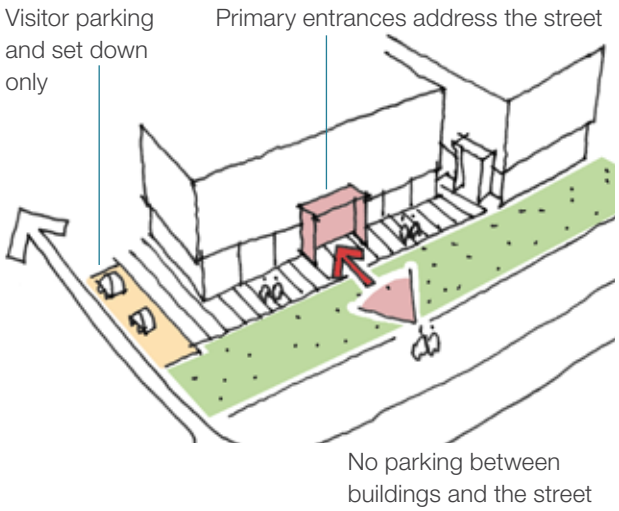
- Building height limited to 15m in total (see 9.2 for more details on building heights);
- Key entrances and reception areas are to be placed on the street side to generate activity, with plant rooms and servicing to the rear of the building away from the public realm.

Fig 7.5: Indicative Design Principles Plan

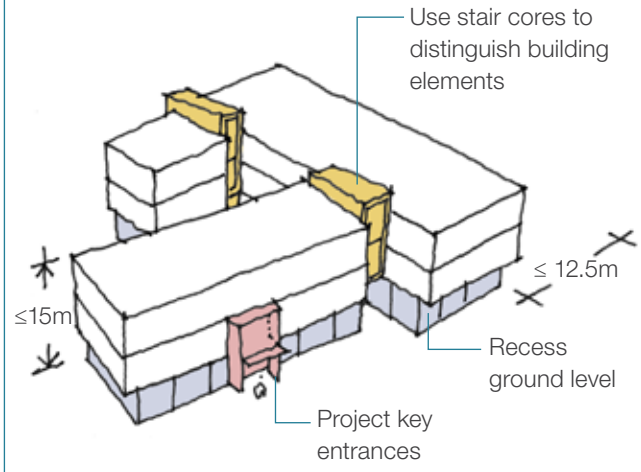
- Parking is to be arranged in landscaped parking courts to the rear, behind the buildings.
- Only minimal visitor parking and set down areas are to be visible from the street.
- Architectural form is to be clean and coherent with individual buildings reading as a considered collection.
- Structural landscape planting to delineate between commercial plots / parcels.
- Pumping station to be accommodated to the rear of this commercial area, set at the back of the parking area and screened by structural landscaping.
- Pumping station to be accessed either through commercial access and parking areas or to be served by a dedicated link from the A428. The second option would only be for access to the pumping station and not a through route.
- Attractive landscaping along the frontage edge of the commercial parcel.

Fig 7.6: Indicative axonometric view of addressing the street commercial area, facing south east

1. Addressing the Street



2. Articulated Massing



3. Active Uses at Ground Level

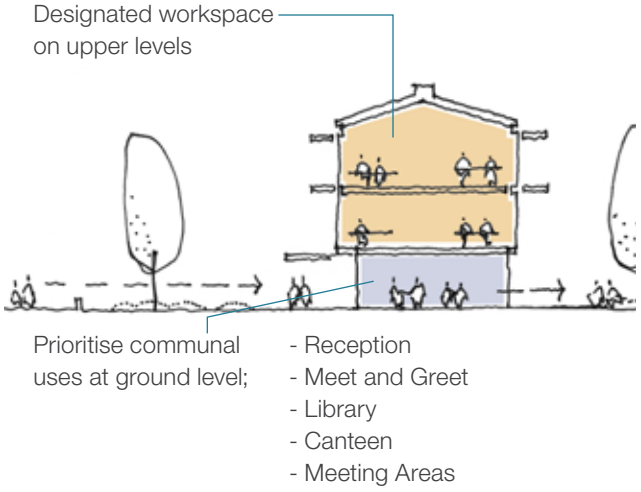


Fig 7.7: Indicative extract of the Addressing the Street Comercial Area, from the KP1 Illustrative Masterplan

Sheltered footways and entraces along the frontage, St Catherine's College, Oxford

Good quality pedestrain footways and outdoor seating create activity, Ericsson Offices, Ansty Park, Warwickshire

Fig 7.8: Indicative view of the 'Addressing the Street' Commercial Character Area

"....Key entrances and reception areas are to be placed on the street side to provide activity. Parking is arranged in landscaped parking courts to the rear."

7.4 Set in the Landscape

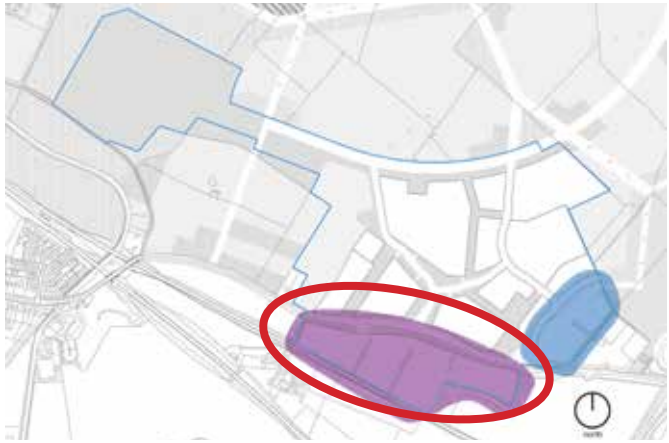


Fig 7.9: Location Plan

The commercial area south of the A428 Crick Road is a location for B8 and B2 business uses. The area can be easily accessed by large vehicles typically associated with these uses, and will act as a continuation of the DIRFT but with substantially smaller buildings. The B2 use is proposed to be located towards the eastern end of the site, where the plot is less deep. These uses are appropriate given the proximity to the Northampton Loop railway line which runs to the south of the site. This commercial area is opposite residential parcels on the other side of the A428, so landscape buffer planting along the A428 is important.

Location:

- Position and size of the commercial area fixed on Regulatory Plan.
- Commercial parcel area (including landscape): approx. 5.8 hectares (14.3acres).

Land Uses:

- Predominately B2 / B8, (potentially including some associated B1 office elements) – up to 19,335sqm in total;
- No individual B8 employment unit shall exceed 5,000sqm (GEA);
- Total B2 should not exceed 15,500sqm (the total limit for B2 in the OPA);
- Total B8 should not exceed 15,500sqm (the total limit for B8 in the OPA);

Design approach:

- Landscape buffer to line the commercial boundary edge to the A428 Crick Road. Attractive landscaping to be established in this zone to create an attractive landscape setting for development, and outlook for residential development opposite.
- A service road will sit between the landscape buffer and the commercial buildings.
- Landscaping in this zone is to be slightly banked to reduce visual impact of the service road and commercial buildings.
- Building height limited to 12m in total (see 9.2 for more details on building heights);
- Each building is to be subdivided from the next by a line of screening trees to suggest a sequence of tree lined spaces.
- Key entrances and reception areas are to be placed on the street side to provide activity, with plant rooms and servicing located away from the public realm.
- Parking and manoeuvring yards must be placed alongside the buildings.
- Detailed development will need to have full regard to the relationship with the railway and the operational requirements of Network Rail, including planting proposals along the boundary.

Fig 7.10: Indicative Design Principles Plan

Fig 7.11: Indicative axonometric view of the Set in the Landscape Commercial area, facing south

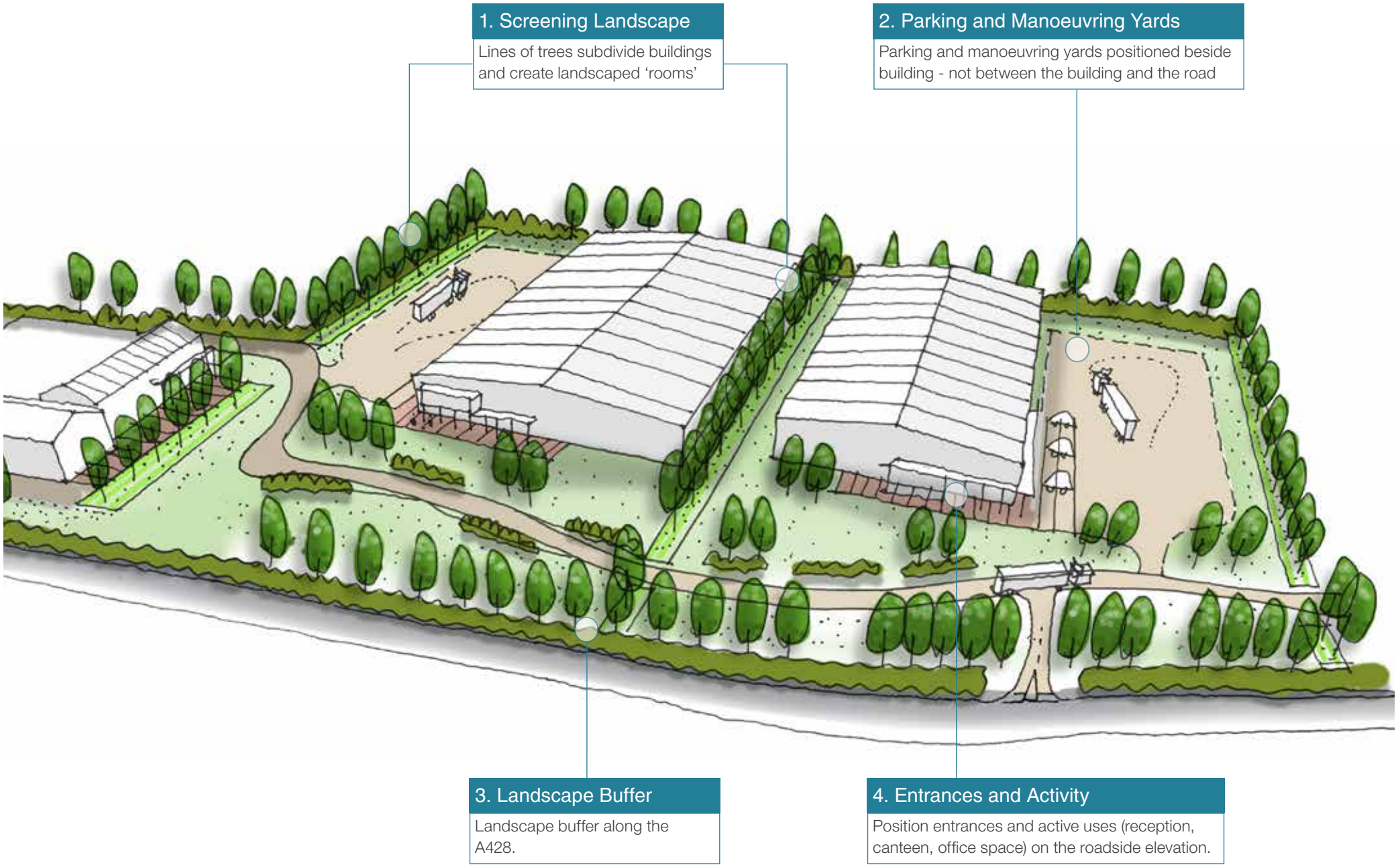


Fig 7.12: Indicative extract of the Set in the Landscape commercial area, from the KP1 Illustrative Masterplan

Strong building forms and precise cladding materials, California

Metal cladding and interesting roof form, The Hilti Factory, Austria

Fig 7.13: Indicative view of the 'Set in the Landscape' character area

"....The A428 Crick Road is lined with a green verge and cycle/footway to the north and a wildlife buffer to the south, behind which the commercial buildings sit."

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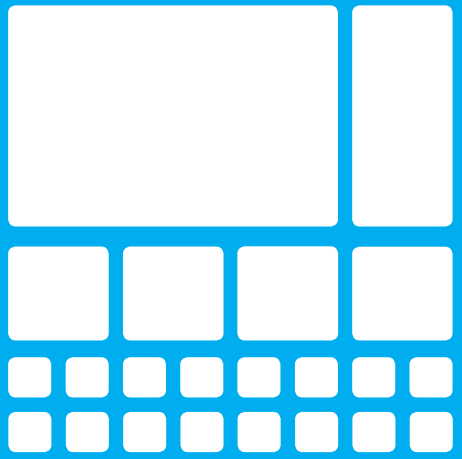
Chapter 8
Detailing the Place



Chapter 8: Detailing the Place Mandatory Design Fixes

The mandatory design fixes are set out below and shown on the Regulatory Plan. The Compliance Checklist in Appendix 1 presents a complete list of design fix headings from the whole Design Guide.

- **8.2 Architectural Principles**
- **8.3 Building Features for Residential Built Form** – detail design considerations.
- **8.4 Residential Materials** – a library of materials for residential buildings, with specific palettes of materials for each residential character area.
- **8.5 Mixed Use Materials** – a library of materials for mixed use buildings, with specific palettes of materials for each mixed use area.
- **8.6 Commercial Materials** – a library of materials for commercial buildings, with specific palettes of materials for each commercial area.
- **8.7 Public Realm Materials,** comprising:
  - **8.7.1 Streetscape Materials Palette**
  - **8.7.2 Street Furniture**
  - **8.7.3 Lighting**
  - **8.7.5 Planting Palette / Strategy**
  - **8.7.6 Public Art**

8.1 How to use this Chapter

This chapter sets out a series of principles and rules for the architectural design and detailing of residential dwellings and other buildings. Guidance is also provided for materials within the public realm. These principles and rules will ensure quality, consistency and coherence prevails across the KP1 site. The diagram below introduces each part of this chapter in a step-by-step process:

Step 1: *8.2 Architectural Principles*

A series of principles establish the architectural composition of groups of dwellings and individual dwellings, within a carefully considered layout.

↓

Step 2: *8.3 Building features for Residential Built Form*

A series of rules prescribe the detailed design of key building features:

1. Doors and entrances
2. Porches
3. Roofs
4. Eaves and ridges
5. Chimneys and vents
6. Rainwater goods
7. Walls
8. Windows

↓

Step 3: *8.4 Residential Materials*
8.5 Mixed use Materials
8.6 Commercial Materials

A series of materials palettes prescribe which materials are appropriate for residential, mixed use and commercial character areas.

↓

Step 4: *8.7 Public Realm Materials*

A series of materials, street furniture and planting species are provided for use within the public realm of KP1.

8.2 Architectural Principles

The following ten architectural principles will be adhered to, in order to achieve a coherent, yet distinctive character to the architectural design of dwellings.

1. Recognisable Form

- Proposals will follow the gradation between urban, suburban and rural as set out in the character area plan in sub-chapter 5.2. This will be achieved by using appropriate and recognisable forms that relate to the relevant character.

2. Silhouette

- Dwellings will create unified and interesting silhouettes through repetitive roof forms within terraces and groupings of dwellings. This can be achieved, for example, through the use of chimneys or gables.

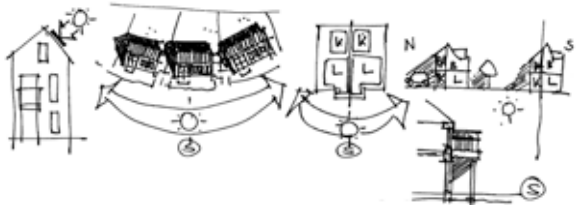
3. Landmark

Landmark buildings will:

- Mark the end of vistas or long views.
- Address prominent corners.
- Frame key views.
- A landmark building can contain features such as projecting bays, large window openings, balconies and expressive roof forms

4. Aspect & Orientation

- Dwellings will maximise the potential for roof pitches to face south.
- Where possible, dwellings will maximise potential for south/south west facing habitable rooms.
- Dwellings will show consideration of solar shading principles to provide a comfortable living environment.



5. Frontage Addressing the Public Realm

- Dwellings which front the public realm will maximise the potential for active frontages and provision for balconies.
- This will provide natural surveillance and assist in creating activity within the street scene.

6. Express individuality of Linked & Terraced Dwellings

- Dwellings which form part of a terrace or grouping of buildings will express individuality through celebrating the entrance and openings.
- This can also be achieved, for example, through alternating features such as projecting elements or set-back elements within the composition of dwellings.

7. Create Order & Unity

- Variety will be achieved through handed, framed and repeated elements but groupings of dwellings and street scenes must achieve order and unity within their overall layout and composition.

8. Celebrate Entrances

- Entrances to dwellings will add definition and create interest to the front elevation.
- Entrances will be provided with some form of shelter.

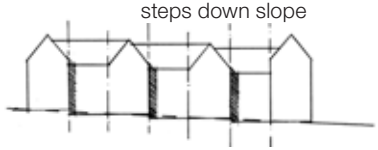
Porch 'cut-out' of plan to create interest & 'protection' and provide shelter at entrance

Double height porch & loggia with gable highlighting entrance

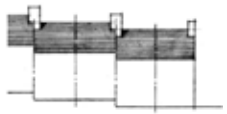
9. Respond to Topography

- Design to respond to changes in topography
- Forms reflect changes in level
- Consistent stepping
- Avoid significant retaining walls

Building form steps down slope



Topography expressed through stepped footprint and massing



Terraced form has distinctive stepped breaks

10. 'Honesty'

- Dwellings will match the description of their typology as set out in Chapter 5.
- Dwellings will utilise simple forms and masses both individually and within a grouping of buildings.
- Dwelling features will be simple and honest to the purpose they serve, e.g. usable balconies.
- The use of materials will demonstrate a rationale and may distinguish key elements of the dwelling such as projecting bays.

Simple wide fronted units with subsequent elements e.g. garage, bay etc.

Gable used to provide shelter to Loggia and bay

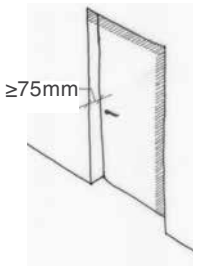
Simple Window Palette; Used to form other elements

8.3 Building Features for Residential Built Form

The following principles relating to the various building features on residential built form will be adhered to. Where appropriate, building features include a list of unacceptable design details which are not permitted for residential built form.

1. Doors and Entrances

- All front doors will be recessed a minimum of 75mm from the brick / finished face.
- All garage doors will be recessed to a minimum of 90mm from the brick / finished face.
- High quality, robust doors will be used.
- If the door does not contain any glazed aperture, then this should be incorporated elsewhere within the main threshold to the house.



All doors need to be recessed by at least 75mm from the finished face

Unacceptable Design Details

- No uPVC doors will be permitted on elevations which are on a street frontage.

2. Porches

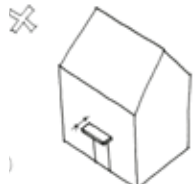
- Porches will be designed as integral to the entire elevation.
- Porches will either be flat roof or pitched roof.
- Porches will be not be made of GRP.
- Porches need to be sufficiently deep in order to provide shelter.
- Flat-roof porches will have a roof finish of lead, zinc or copper standing seam.
- Pitched-roof porches will match the materials used on the roof of the dwelling.
- Glazed porches are acceptable.
- Porches can be formed by a recessed entrance within the primary elevation.
- Small-scale enclosed porches are not permitted.

Porches must provide sufficient shelter

Entrances need to be celebrated and designed as integral to the elevation

Unacceptable Design Details

- No GRP will be permitted for flat roof or pitched porches.
- Porches will be designed so as not to dominate the building.
- Small scale porches with insufficient depth so as to provide shelter will not be permitted.



Narrow porch that doesn't provide shelter

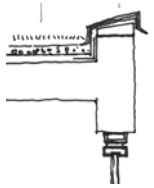
decorative, built porches are not permitted

3. Roofs

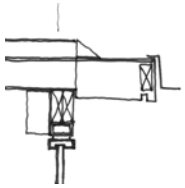
- Roofs need to be designed with due consideration of the character area in which they are located.
- Pantiles will predominantly be used for single storey dwellings.

Flat Roofs

- Flat roofs will be concealed behind a parapet, or the depth of fascia and profile of leading edge carefully detailed.
- Green roofs are encouraged.



Flat roof concealed behind parapet

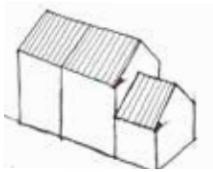


overhanging flat roofs that are carefully detailed are acceptable

Pitched Roofs

- Roofs will be between minimum pitch of 37.5 degrees and maximum pitch of 52 degrees.
- The roof pitch should be of a consistent angle along a terrace or group of buildings.
- Roofs to garages will be pitched.
- Pitched roofs to apartment buildings may show a pitch lower than 37.5 degrees, when using standing seam metal finishes or a similar contemporary material.

All terraces should have a consistent roof pitch



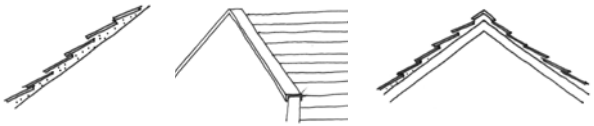
Photovoltaics

- The installation of Photo-voltaics must be designed into the elevation and consistent along any terrace or group of buildings on street.
- Photo-voltaics panels will be designed / installed to read coherently with the building elevation and form.

4. Eaves and Verges

- Eaves will be clipped / parged or use a shallow depth black fascia/barge board. If brick detailing is used as an alternative, the detailing will be simple and in the same brick colour as the dwelling.

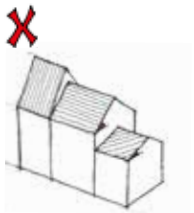
- Verges will be clipped / parged, parapet or use a shallow depth black fascia/barge board.



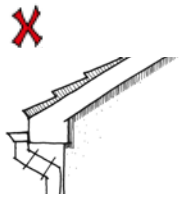
clipped / parged | parapet | shallow, black fascia / barge board

Unacceptable Design Details

- There will be no mix of both hips and gables on any single building.
- Interruption of eaves by dormers.
- Boxed eaves. No white uPVC.
- Concrete tiles will not be permitted.



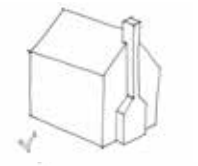
Inconsistent roof pitches along terraces should be avoided



Boxed eaves are not permitted

5. Chimneys and Vents

- Chimneys and vents will match the primary elevation material.
- Chimneys will be placed symmetrically to the ridgeline.
- Chimneys should rise above the roof to aid an interesting ridge line.
- Lead, zinc and metal can be used.
- Chimneys on end elevations should reach the ground.



Chimneys need to be appropriately proportioned and detailed.

Chimneys symmetrically positioned on ridgeline.

Unacceptable Design Details

- Chimneys, the sole purpose of which is decorative, will not be permitted
- The use of GRP will not be permitted

Chimney inappropriately articulated on gable end

Chimney positioned asymmetrically to ridge.

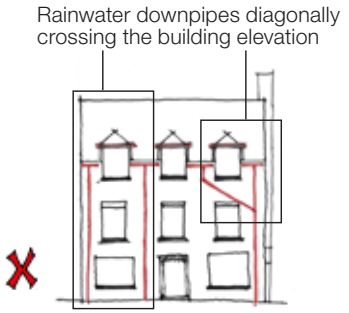
6. Rainwater Goods

- Rainwater goods will not detract from the overall composition of the building elevation or street elevation.
- Rainwater goods including guttering and rainwater pipes will preferably be black in colour or a brushed metal finish.

The visual impact of any rainwater goods must be minimised so as not to detract from the overall appearance of the elevations.

Unacceptable Design Details

- Rainwater downpipes dominate the composition of the elevation due to ill positioning of dormer windows



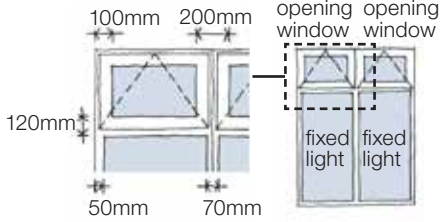
7. Walls

- A maximum of two materials can be chosen for exterior walls of any given building. A single material is preferable.
- When using brick, only one brick colour will be used on a single dwelling.
- When using render, only one render colour will be used on a single dwelling.
- Brick detailing will be simple and match the main brick colour.

7. Windows

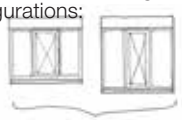
Colour, thickness of frame, quality and design of windows must be consistent on all elevations of a dwelling.

All windows will be recessed a minimum of 90mm from the building elevation.

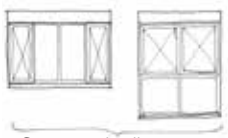


Window frames will not exceed the above measurements

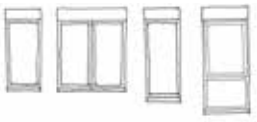
Windows will be designed with symmetrical configurations:



Centrally openable



Symmetrically openable

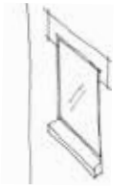


Simple vertical fenestration will be used

Repeated vertical fenestration will make up composite elements

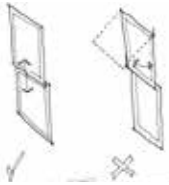
Unacceptable Design Details

Inconsistent window treatment on different elevations



Windows that are flush to wall finish are not permitted

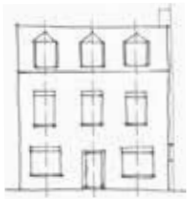
Asymmetrically openable window configurations are not permitted



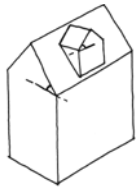
Decorative sash windows are not permitted

Dormer Windows

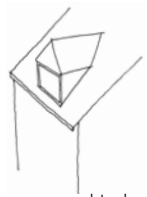
- Dormer windows will be complementary to the main facade in terms of design and location.
- Dormer windows will maintain overall vertical proportions.
- The number and proximity of dormers that interrupt the eaves line will be limited to prohibit unnecessary levels of rainwater goods within the building elevation.
- No GRP roofing will be permitted.
- The pitch of gabled and / or hipped dormers needs to be consistent with the pitch of the main roof.
- Hipped dormers must be carefully detailed so as to avoid oversized components
- Flat roof dormer roofing materials must be standing seam lead, zinc or copper.



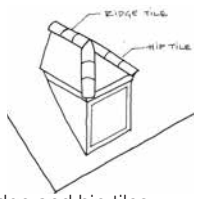
Dormer windows need to complement and align with, the fenestration of the facade.



Consistent pitches



Dormers need to be designed so as to avoid interruption of eaves



ridge and hip tiles carefully sized

Bay Windows

- Bay windows are appropriate if considered as part of the whole elevation.
- No GRP will be used.
- Frame members and corner posts should be carefully considered to ensure they are neither too bulky nor too flimsy.
- Pitched roof bay windows need to be consistent with the material of the main roof.
- Flat roof bay windows will use standing seam lead, zinc or copper roofing materials.

Bay windows designed as part of the overall composition of the elevation.

Fig 8.1 Illustrative KP1 Aerial View - looking towards DIRFT III to the north east

8.4 Residential Materials

An index of permitted materials has been carefully selected for the residential built form within KP1, covering walls, roofs, windows and balconies. This is shown on the facing page. From this, a palette of a select few materials has been specified for each Character Area, to ensure that neighbourhoods within KP1 have their own identity whilst reading coherently within the wider development. All proposals will demonstrate adherence to the Material Application Principles set out on this page. Certain materials will be seen across all Character Areas. Character Areas are illustrated in Figure 8.2.

Reserved Matters Applications will only use materials specified in the relevant Character Area palettes. A proposed materials specification will be submitted with each Reserved Matters Application, along with samples, for approval by RBC.

Certain locations within the development could support the introduction of contrasting, 'code-breaking' architecture, where a design rationale is developed for a particular building or cluster of buildings. This may extend to the introduction of materials not permitted elsewhere in that character area. Reserved Matters Applications including 'code-breaking' elements must include design justification for those elements.

Fig 8.2: Residential Character Areas Plan

Materials Application Principles:

The following principles for the application of materials will be adhered to throughout Key Phase 1:

1. Proposals are to demonstrate consistency in material selection and usage, utilising only materials specified* in the relevant Character Area palette(s);

2. Parcels for Reserved Matters Applications which cover more than one Character Area will demonstrate a carefully considered transition between differing materials palettes;

3. Where materials for individual buildings that contrast with materials of neighbouring buildings are proposed an accompanying design justification will be submitted as part of the Reserved Matters Application;

4. Materials will be consistent along a row of terraced dwellings or linked dwellings, including dwellings linked by garages;

5. No more than two materials will be used across walls of any given dwelling or block, and where this includes coloured render only one colour will be used.

6. Generally only one brick colour/type is to be used on any building (except where a contrasting blue/grey brick is used as a plinth level, up to a maximum of eight brick courses)

7. Proposals will be required to demonstrate consistency of material selection for buildings on both sides of streets, either where a street passes through the parcel itself, or where the parcel faces another completed / consented parcel across a street.

** Marker buildings or 'code breaker' buildings may feature materials from outside the relevant palette, but will require the submission of specific design justification for approval by RBC and the master developer.*

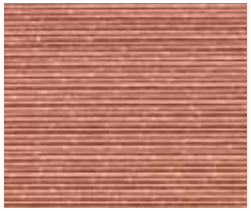
Key

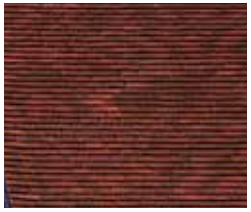
- Rural Edge
- Dollman Common
- Formal Urban
- Eastern Gateway

RESIDENTIAL MATERIALS INDEX

1. Roofs


1.1 Grey slate


1.2 Orange / red tiles


1.3 Dark red tiles


1.4 Flat roof set behind parapet

2. Walls

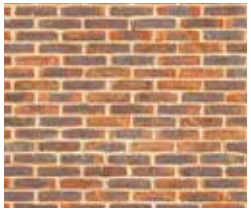

2.1 Red stock brick


2.5 Render


2.2 Buff stock brick


2.6 Red brickwork with blue headers


2.3 Black horizontal timber boarding


2.7 Brown / orange stock brick


2.4 Clay tile hanging

3. Windows


3.1 White


3.2 Dark grey


3.3 Grey green


3.4 Timber (colour to be agreed)

4. Balconies / juliette balconies


4.1 White painted


4.2 Stained timber


4.3 Dark metal with glass balustrade


4.4 Grey / black with metal balustrades

Material Palettes for Residential Character Areas

1. Rural Edge

Roofs


1.2 Orange/red tiles


1.3 Dark red tiles

Windows


3.1 White


3.4 Timber (colour *)

Walls


2.1 Red stock brick


2.3 Black horizontal timber boarding


2.4 Clay tile hanging


2.6 Red brickwork with blue headers


2.7 Brown / orange stock brick

Projecting/ Inset/ Juliette Balconies


4.1 White painted


4.2 Stained timber

Notes

* colour to be determined within detailed design

2. Dollman Common

Roofs


1.2 Orange/red tiles


1.3 Dark red tiles

Windows


3.1 White


3.2 Dark Grey


3.3 Grey Green

Walls


2.1 Red stock brick


2.3 Black horizontal timber boarding


2.5 Render


2.7 Brown / orange stock brick

Projecting/ Inset/ Juliette Balconies

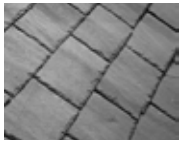

4.3 Dark metal with glass balustrade


4.4 Grey or black with metal balustrades

Notes

3. Formal Urban

Roofs


1.1 Grey slate


1.3 Dark red tiles


1.4 Flat roof set behind parapet

Walls


2.1 Red stock brick


2.2 Buff stock brick


2.5 Render


2.7 Brown / orange stock brick

Windows


3.1 White


3.2 Dark grey


3.3 Grey green

Projecting/ Inset/ Juliette Balconies

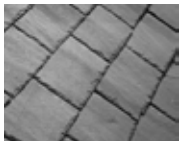

4.3 Dark metal with glass balustrade


4.4 Grey or black with metal balustrades

Notes

4. Eastern Gateway

Roofs


1.1 Grey slate


1.4 Flat roof set behind parapet

Walls


2.1 Red stock brick


2.2 Buff stock brick


2.5 Render


2.7 Brown / orange stock brick

Windows


3.1 White


3.2 Dark Grey


3.3 Grey Green

Projecting/ Inset/ Juliette Balconies


4.3 Dark metal with glass balustrade


4.4 Grey or black with metal balustrades

Notes

8.5 Mixed Use Materials

Unlike residential parcels, the edge of mixed use land parcels are not coded on the Regulatory Plan but dealt with specifically in the contents of chapter 6. Permitted materials are set out over the following pages in palettes. Again, each palette stipulates materials and colours for roof, wall, window and balcony finishes.

Key:

- Dollman Farm
- The Primary School

Certain locations within the development could support the introduction of contrasting, 'code-breaking' architecture, where a design rationale is developed for a particular building or cluster of buildings. This may extend to the introduction of materials not permitted elsewhere in that character area. Reserved Matters Applications including 'code-breaking' elements must include design justification for those elements.

MIXED USE MATERIALS INDEX

1. Roofs

1.1 Grey slate

1.2 Standing seam metal

Note:

- The installation of Photovoltaics must be designed to have minimal visual impact to the public realm.
- Photovoltaics will be integrated into the elevation and consistent along any group of buildings on street.
- Photo-voltaics panels will be designed / installed to read coherently with the building elevation and form.

2. Walls

2.1 Red stock brick

2.5 Brise soleil

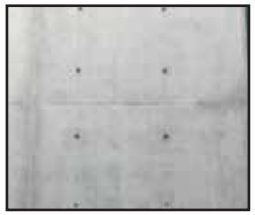
2.2 Red brickwork with blue headers

2.6 Metal cladding

2.3 Natural horizontal timber boarding

2.7 Black horizontal timber boarding

2.4 Render



2.8 Concrete

3. Windows

3.1 Grey green

4.1 Dark metal with glass balustrade

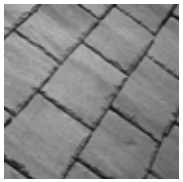
3.2 Timber (colour to be agreed)

4.2 Grey / black with metal balustrades

Material Palettes for Mixed Use Areas

Dollman Farm

Roofs


1.1 Grey slate

Walls


2.1 Red stock brick


2.2 Red brickwork with blue headers


2.3 Natural horizontal timber boarding


2.7 Black horizontal timber boarding

Windows


3.2 Timber (colour to be agreed)

The Primary School

Roofs


1.2 Standing seam metal


1.3 Profiled metal


1.4 Clay / concrete tile

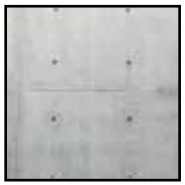
Walls

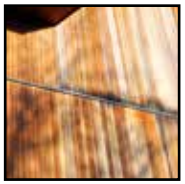

2.1 Red stock brick


2.4 Render


2.5 Brise soleil


2.6 Metal cladding


2.8 Concrete


2.X Timber

Windows


3.1 Grey green


3.3 Curtain wall

Balconies


4.1 Dark metal with glass balustrade


4.2 Grey / black with metal balustrades

8.6 Commercial Materials

Unlike residential parcels, the edge of commercial land parcels are not coded on the Regulatory Plan but dealt with specifically in the contents of chapter 7. Permitted materials are set out over the following pages in palettes. Again each palette stipulates materials and colours for roof, wall, window and balcony finishes.

Key:

Addressing the street

Set in the landscape

Certain locations within the development could support the introduction of contrasting, 'code-breaking' architecture, where a design rationale is developed for a particular building or cluster of buildings. This may extend to the introduction of materials not permitted elsewhere in that character area. Reserved Matters Applications including 'code-breaking' elements must include design justification for those elements.

COMMERCIAL AREA MATERIALS INDEX

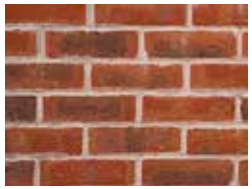
1. Roofs

1.1 Standing seam metal

Note:

- The installation of Photovoltaics must be designed to have minimal visual impact to the public realm.
- Photovoltaics will be integrated into the elevation and consistent along any group of buildings on street.
- Photo-voltaics panels will be designed / installed to read coherently with the building elevation and form.

2. Walls



2.1 Red stock brick

2.6 Glazing 1

2.2 Render

2.7 Glazing 2

2.3 Brise soleil

2.8 Black horizontal timber boarding

2.4 Dark grey metal cladding

2.9 Rain-screen cladding

2.5 Light grey metal cladding

3. Windows

3.1 Dark Grey

Material Palettes for Commercial Areas

Addressing the street

Roofs

1.1 Standing seam metal

Walls

2.1 Red stock brick

2.2 Render

2.3 Brise soleil

2.4 Dark grey metal cladding

2.6 Glazing 1

2.7 Glazing 2

2.9 Rain-screen cladding

Windows

3.1 Dark grey

Set in the landscape

Roofs

1.1 Standing seam metal

Walls

2.4 Dark grey metal cladding

2.5 Light grey metal cladding

2.6 Glazing 1

2.8 Black horizontal timber boarding

2.9 Rain-screen cladding

Windows

3.1 Dark grey

8.7 Public Realm Materials

8.7.1 Streetscape Materials Palette

The specification of hard materials and furniture must ensure that the new development has a recognisable character and is constructed to adoptable standards where required.

A range of appropriate adoptable materials are to be proposed in order to reinforce the street hierarchy and create a neighbourhood identity.

The materials palette will also adapt to accommodate the evolving Sustainable Urban Drainage strategy - for example, by using permeable paving or permeable bound surfacing systems.

The detailed application for KP1 must set out the principles for material and furniture selection that will be continued to be applied to later phases. However, it is also recognised that standards are likely to change over the duration of the project.

Therefore, changes to the materials and the furniture palette will be discussed and agreed with Rugby LPA at the detailed design stage during each particular phase.

To guide future detailed applications, the following overarching principles have been applied and future applications must demonstrate how these principles have been observed:

- Emphasise the east-west links along the connecting residential streets.
- Use materials that suggest a pedestrian friendly environment but have a ‘traditional’ refuse from the road.
- A simple palette with a coordinated range of colours, textures and tones to reinforce the street hierarchy and legibility:

The follow materials represent a preferred palette for the public realm palette:

1. Primary Roads :
Preference for higher quality surfaces to footways and vehicular cross overs to signify importance in the street hierarchy (e.g. potential use of stone flag and block work, with macadam / black top asphalt option for footways). Macadam / asphalt surface to carriageway. Block paving to shared surface sections of carriageway.

2. Residential streets:
Block paving or asphalt to footways with macadam / asphalt to footways with macadam / asphalt to carriageway surface to carriageway.

3. Shared surfaces:
Concrete block/stone sett paving.

4. Parking:
Dark/contrasting sett paving.

5. Footpaths in Public Open Spaces:
Preference for bound gravel/spray and chip finish macadam but this is subject to further discussion and agreement with County Highways (Note: County Highways preference for block paving / black top asphalt).

6. Civic Spaces:
A range of stone flags, block paving and small unit pavers.

'Mood Board' - Typical Streetscape Materials






8.7.2 Street Furniture

- Street furniture will have an emphasis on simple, contemporary design with consistent product types to be used across the development.
- Furniture is to be sited to ensure an uncluttered streetscape and footways that are as free from obstruction as possible.
- Proposed elements are to be durable and sourced from recognised suppliers to ensure a reliable procurement and replacement process.
- Furniture along roads and streets should always be located within an approximately 1500mm wide zone that is set 450mm from the road kerb to lessen the scope for obstruction of routes.
- Where this is not possible, careful consideration must be given to the siting of elements to ensure an uncluttered streetscape. Elements will generally be grouped together or treated as combined elements to avoid ‘standalone’ items and clutter.
- It is anticipated that the development will generate a great deal of cycle traffic and therefore bike parking facilities will be incorporated into the streetscape, generally set in spaces between trees or in more open areas of paving near junctions or commercial frontages.
- Bollards are generally to be avoided, as appropriate to a low-speed, pedestrian friendly scheme.
- A detailed signage and wayfinding strategy will be developed alongside the street furniture palette with elements combined where appropriate (mounted on lighting columns etc.) to reduce street clutter. Additionally, public art strategies should also consider integrated bespoke features as part of the street furniture palette.

'Mood Board' - Typical Street Furniture Elements









Electric vehicle charging points

An example of an electric vehicle charging point is shown in the precedent photograph below. These features may be accommodated on the edges of some car parking areas as appropriate, subject to detail design and the need for a connection to electricity supply. Possible locations may including in mixed use parking areas and parking for commercial areas. Other locations may also be appropriate subject to detail proposals.

8.7.3 Lighting

The lighting proposals are to be prepared with due reference to the 'Rugby Radio Station Lighting Strategy' (August 2013) prepared by Roger Griffiths Associates.

Roads and streets will be lit using column mounted luminaires. In some cases it may be possible to use wall/building mounted luminaires to help reduce street furniture within the pedestrian corridors.

Private and semi-private courtyards, shared surface links and mews areas will be lit using the same family of column lighting as for streets and wall/building mounted luminaires where possible to minimise clutter in restricted spaces.

Positioning of lighting units will require careful consideration alongside the landscape proposals to avoid being obscured by tree planting and other features.

Commercial facades, notably along main streets, may benefit from additional wall mounted bulkhead lighting and/or feature lighting to highlight frontages.

Formal and Civic public open spaces will utilise a mix of column lighting (to provide safe illumination along key routes) and feature lighting elements (uplighters, in ground spots etc) to highlight key features and add day-round interest and animation.

Informal open spaces - with special reference to habitat corridors - will utilise low level bollard lighting with carefully directed light outputs onto paths only to ensure habitats are not affected and create dark corridors for foraging bats. Other areas of informal open space (e.g. Normandy Hill) where there are no pedestrian pathways will not be lit.

Note: alternative designs may be appropriate if agreed with the highways authority.

The five overall principles for the lighting strategy are:

- Principle 1: promote safe and efficient movement around the site during night time conditions.
- Principle 2: ensure all lighting specified is essential, appropriate and has mitigation in place where necessary.
- Principle 3: take precautionary and sensitive measures where wildlife is present and utilise low heat output lights, minimum spread lamps and downward pointing lights.
- Principle 4: optimise energy use through energy efficient luminaries, dimmed and timed systems, recyclable products, re-use of components at the end of their life and renewable energy as a power source where possible.
- Principle 5: create an uncluttered landscape with a sensitive approach to the landscape character of the site whilst utilising best practice for lighting design.

Descriptions of light fittings:

Column Lighting
- Columns to be finished in a dark colour to reduce their visibility in the night time environment.
- Column heights should be at minimum heights and maximum spacing to fulfil their function.
- The luminaire fitting should be a design which reduces light spill and glare, with the minimum wattage required for safety purposes.

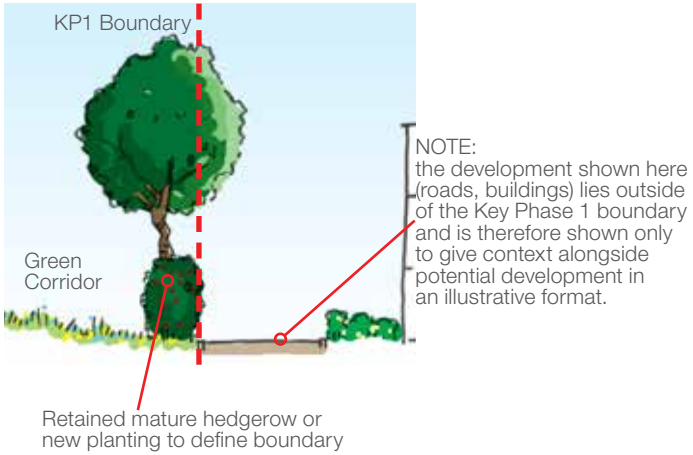
Bollard Lighting
- Bollards to be finished in a dark colour and complementary in design to the columns chosen. They should be of the minimum wattage required, at maximum spacings and with a shielded light source.

In-ground Lighting
- Should also be finished in a dark colour and be complementary in design to the other products used. The in-ground light should be shielded in order to avoid upward light spill.

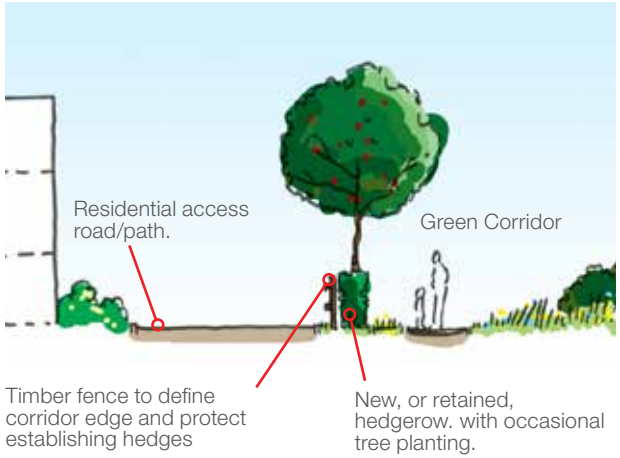
8.7.4 Public Realm Boundaries

Illustrative Sketch Sections (not to scale):
A series of indicative illustrations showing the interface between public realm and development parcels:

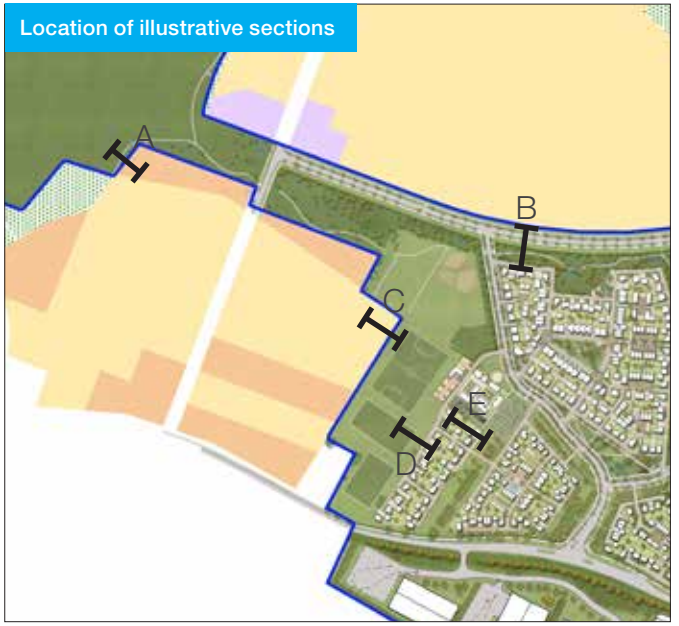
Section A: Normandy Hill green corridor edge - Use of informal green boundaries to define edges of open landscape at Normandy Hill.



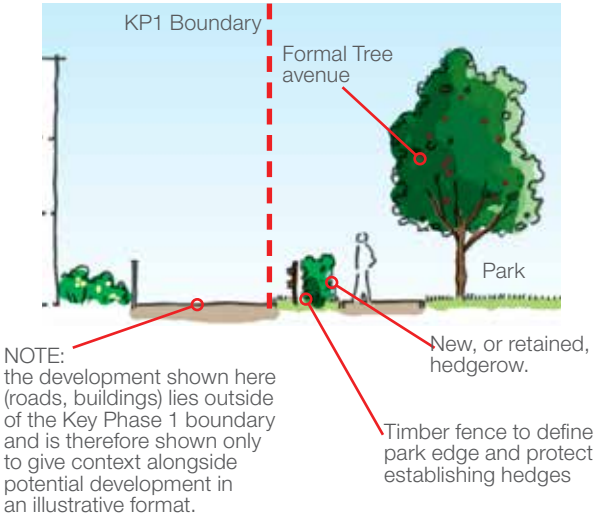
Section B: Typical condition - Residential adjacent to Green corridor - Use of fences and hedging to clearly define the extent of GCN habitat.



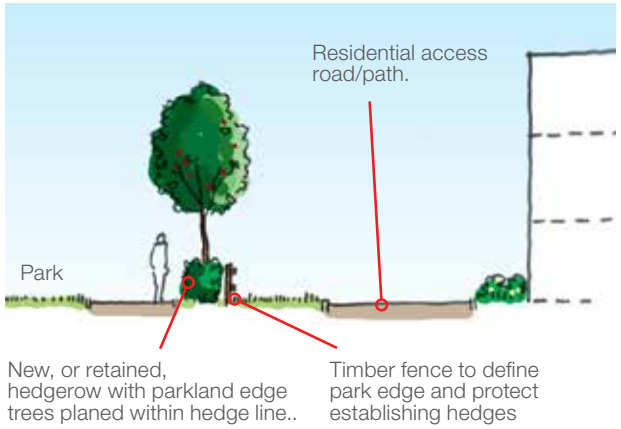
Location of illustrative sections



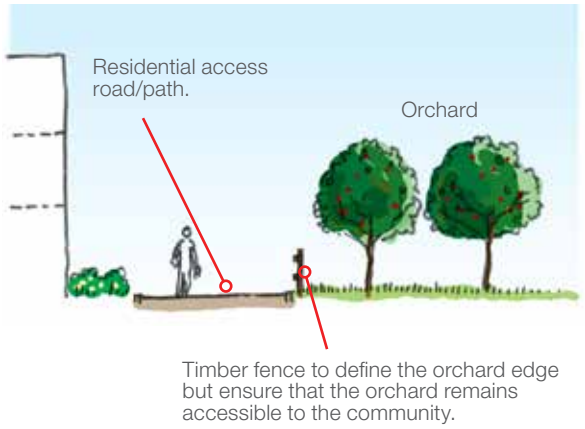
Section C: West side of Central Park space - Hedges and formal planting to west park edge.



Section D: Residential onto east side of Central Park space - More informal hedge and tree edges to eastern park edges.



Section E: Residential onto Orchard - use of a visually permeable yet appropriately informal barrier to define the space but encourage community access.



8.7.5 Planting Palette/Strategy

The layout of the streets and residential parcels provides the opportunity to create a strong network of street tree planting. The following pages provide an overview of the proposed strategy:

Street Trees

- Tree stock is to be of predominantly native species although some non-native stock will be used to provide aesthetic/seasonal interest or respond to specific design requirements.
- Sizes at implementation will range from mature stock to smaller 'Standard' size trees in private gardens. Tree stock must be specified as appropriate to their setting - balancing considerations of implementation, establishment and resistance to damage or vandalism.
- Trees are to be planted in appropriately sized pits with structural soils specified where required. Root barriers will be required to safeguard services and foundations in some areas.
- Planting within streets will employ, as required, an engineered tree pit solution to expand rooting space and ensure optimum growth conditions whilst supporting traffic loads, accommodating adjacent utilities and managing storm water on site.

Public Open Spaces

Key public spaces, e.g. The Central Open Space will incorporate a mix of retained and proposed trees as well as shrub, annual and grassland habitats.

- The strategy is to improve the biodiversity of the area through wildlife friendly planting as part of the public realm improvements.
- Planting will also include more ornamental, non-native stock as appropriate to the context.

Tree Planting - Outline Palette of Typical Species

SPECIES AND CULTIVAR	COMMON NAME	SUPPLY GIRTH (CM)	SUPPLY HEIGHT (M)	SUPPLY SPREAD (M)	NOTES
Primary Streets - Avenue Tree Planting					
Platanus x acerifolia 'Tremonia'	Tremonia Plane	45-50cm	9-10 m	2 – 2.5m	No of transplants: 6 x tr. or 7 x tr.
5 yrs			10-12m	2-3m	
10 yrs			12-14m	3-4m	
20 yrs			13-16m	4-5m	
Castanea sativa	Sweet Chestnut	50-60cm	9-10 m	3 -4 m	
5 yrs			10-12m	4-6m	
10 yrs			12-14m	5-7m	
20 yrs			13-16m	7-10m	
Tilia cordata 'Greenspire'	Small Leaved Lime	50-60cm	9-10 m	2,5 -3 m	
5 yrs			9-10m	3-4m	
10 yrs			11-13m	4-5m	
20 yrs			13-15m	5-6m	
Secondary Streets - Avenue Tree Planting					
Carpinus betulus ssp	Hornbeam	25-30cm	5-7m	2-3m	No of transplants: 5 x tr.
Tertiary Streets - Tree Planting					
Pyrus 'Chanticleer'	Ornamental Pear	20-25cm	4-5m	1.5-2m	
Planting within Swales/SUDS in streets					
Alnus incana 'Aurea'	Golden Alder	20-25cm	5-5.5m	2-2.5m	
Pocket Parks and Informal Spaces					
Betula albosinensis	Chinese Red Birch	12-14cm	3-4m	1-1.5m	
Betula utilis Jacquemontii	Himalayan Birch	16-18cm	4-4.5m	1-1.5m	
Gleditsia triacanthos 'Skyline'	Honey Locust	16-18cm	4-5m	1-1.5m	
Prunus 'Sunset Boulevard'	Cherry	12-14cm	3-4m	1-1.5m	
Pyrus 'Chanticleer'	Ornamental Pear	16-18cm	Min 4.5m	1-1.5m	Mix of species to be planted from the proposed range.
Back Gardens					
Fruit trees to back gardens	Apple, Pear, Cherry	10-12cm	3-3.5m	>1m	Small garden trees to be supplied at Standard size with a 1.75m min clear stem to sit within the garden curtilage.
Residential Streets					
Prunus avium 'Plena'	White-flowering cherry	20-25cm	4-5m	1.5-2m	
Parkland and Feature Tree Planting					
Liriodendron tulipifera	Tulip tree	25-30m	5-7m	1.5-2m	No of transplants: 4 x tr
Liquidambar styraciflua	American sweetgum	25-30m	5-7m	1.5-2m	
Robinia pseudoacacia Bessoniana	False Acacia	25-30m	5-7m	1.5-2m	Mix of species to be planted from the proposed range.

Private/Semi-Private Spaces

The way in which private gardens and semi-private parking courts etc. are treated is central to the biodiversity and planting strategy:

- Significant areas of varied habitat will be established throughout the development by clustering gardens and courtyard planting.
- Shrub and other planting stock will be partly (at least 30%) drawn from a palette of native species and specifically include plants that have interest for local fauna.
- Planting may also include more ornamental, non-native stock as appropriate to the context.
- Back gardens will include at least 1no tree of native stock, selected primarily from the list of 'wildlife attracting trees' included in the Code for Sustainable Homes.

Informal Open Space and Wildlife Corridors

The informal spaces are generally focused on habitat creation measures - specifically through new planting that will create a mosaic of wooded areas, hedgerow, scrub and wildflower grassland. Planting in these areas will include:

Trees:
Tree planting will be primarily native stock, appropriate to the site and context. Species may include some of the streetscape palette as well as the following core species:
Acer campestre
Alnus glutinosa
Betula pubescens
Prunus avium
Quercus robur
Salix alba
Salix fragilis
Sorbus aucuparia
Tilia x europea 'Pallida'

Scrub and shrub planting:
Composition will include native species that are of known value to wildlife such as Blackthorn, Holly, Hawthorn, Field Maple, Guelder-rose, Dogwood etc. Thorny species such as Blackthorn and Holly in areas adjacent to the newt ponds will help prevent disturbance and restrict access.

Grassland:
Species-rich grassland will be provided throughout the informal spaces as overseeding or as newly sown for areas that require reprofiling or reinstatement.
Mixes must accord with Emorsgate Seeds EM2 and must include herbaceous species such as Yellow Rattle, Common Bird's-foot Trefoil, Common Knapweed, Oxeye Daisy and Red Clover. Wet meadow grassland in areas surrounding the new ponds will also be established using Emorsgate Seeds EM8 or similar.

Hedgerow planting:
Existing hedgerows are to be retained where possible with gapping up as required. Significant new hedgerow planting is to be undertaken to enclose and link the habitats and provide structure to the open spaces. Species composition is to be similar to the proposed scrub mixes.

Structural Planting
Areas of woodland style mixes planted to reinforce hedgerows, provide screening and shelter and dense habitat within informal landscape areas.

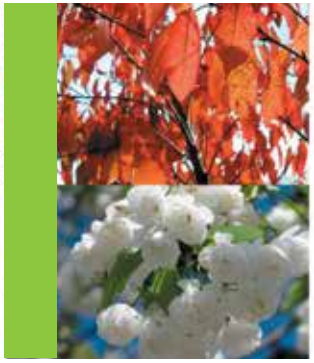
Tree removal/replacement

Existing stock is to be retained as much as is practical and possible and all works will are to be discussed with the Local Authority Tree Officer throughout the design and implementation of the development.
All existing vegetation must be protected in accordance with BS5837 Trees in Relation to Construction (2012) throughout the course of construction works.










8.7.6 Public Art

Public art provision within KP1 will relate to the interpretation of existing heritage features and animating the public realm. It will comprise:

- **Heritage:** As required by the Heritage Mitigation Strategy two interpretation panels will be provided within the retained Ridge and Furrow. Other heritage features may be identified with signage or interpretation panels.

Public art will be considered within the design of the landscape and public spaces and opportunities may include:

- **Landscape:** creating features within the green infrastructure through planting, landforms, signage (including locating past heritage features) and street furniture.
- **Play:** play space design to create added visual and tactile interest.
- **Civic Spaces:** these spaces will be focal points for public activity or meeting places and will contain a greater proportion of hard surface landscape.
- **Key Buildings:** It may be possible to integrate features into the detailed building design – for instance providing heritage references on new buildings that are located on, or close to, the location of the site specific heritage features that are to be removed (e.g. radio masts).

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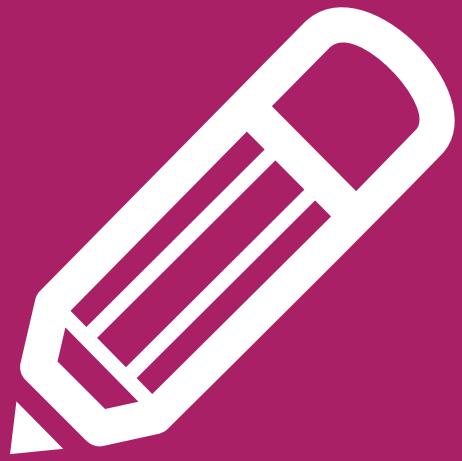
Chapter 9
Technical Standards



Chapter 9: Technical Standards Mandatory Design Fixes

The mandatory design fixes are set out below and shown on the Regulatory Plan. The Compliance Checklist in Appendix 1 presents a complete list of design fix headings from the whole Design Guide.

- 9.1 Private Amenity Space
- 9.2 Building Heights
- 9.3 Car & Cycle Parking Standards
- 9.4 Public Transport
- 9.5 Cycling & Walking
- 9.6 Refuse & Recycling Strategy
- 9.7 Play Provision
- 9.8 Heritage
- 9.10 Utilities: Proposals
- 9.11 Ecology – Existing Conditions & Proposed Mitigation
- 9.12 Foul & Surface Water Management Strategy
- 9.13 Hedgerows
- 9.14 Noise Mitigation

9.1 Private Amenity Space

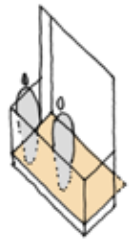
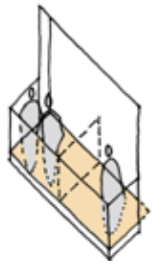
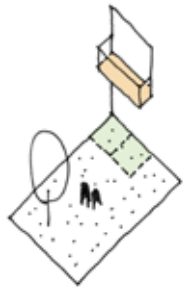
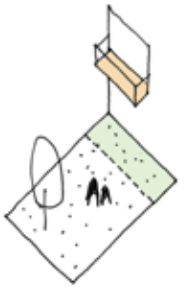
Private amenity space will be provided appropriate to the dwelling it serves. As a minimum, dwellings will be expected to have direct access to private amenity space according to their size and likely number of occupants, as below:

- Detached or semi-detached family homes with three or more bedrooms must have gardens capable of comfortably accommodating outdoor seating for the family, space for children's play, planting beds, space for drying clothes, and room to unobtrusively accommodate a shed or greenhouse.
- Where area for covered bin and bike storage is to be accommodated within private garden areas, it must be in addition to the minimum areas quoted above, and must be directly accessible from the street serving the property.
- Compact two- and three-bedroom houses should have sufficient ground-level private amenity space to accommodate activities of a couple or young family.
- Courtyards and upper-level terraces will be considered to contribute towards the requirements of private amenity space.
- If apartments are provided without sufficient amenity space directly accessible from the dwelling, then communal gardens, private to the block, may be considered to make up the shortfall.

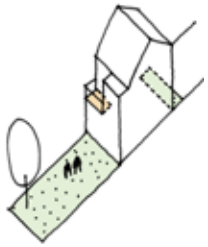
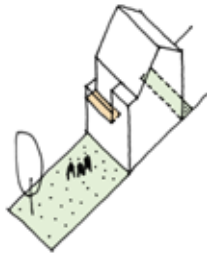
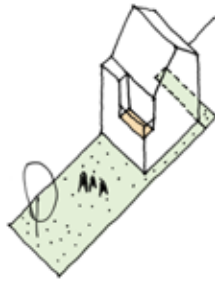
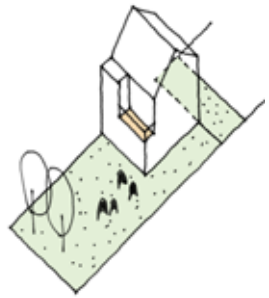
Figure 9.1 presents guidelines for minimum standards for amenity space for different types and sizes of residential homes. A relaxation in any of these minimum standards will only be considered in those circumstances where it is clearly demonstrated that this aids the generation of a well-designed layout which respects the residential amenities of the occupiers of the proposed dwellings having regard to acceptable levels of privacy, daylight/sunlight and any potential overbearing impact.

Fig. 9.1: Minimum standards for amenity space provision guidance

Apartments

1 BED/ 2 PERSON	2 BED/ 3 PERSON	2 BED/ 4 PERSON	3 BED/ 5 PERSON
			
5sqm Private Balcony	6sqm Combination of Private Balconies	8sqm 6sqm of private balconies & 2sqm communal space	10sqm 6sqm of private balconies & 4sqm communal space

Houses

2 BED/ 3/4PERSON	3 BED/ 4/5 PERSON	4 BED/ 6/7 PERSON	5 BED/ 7/8 PERSON
			
50sqm front/back/side gardens & terraces	60sqm front/back/side gardens & terraces	85sqm front/back/side gardens & terraces	100sqm front/back/side gardens & terraces

9.2 Building Heights

Maximum building heights within KP1 area shown in Figure 9.2 Building Heights Plan.

The maximum building height within KP1 is predominantly up to 12m, with the exception of an allowance for up to 15m for the commercial area to the north of the A428.

All heights specified are to ridge level but exclude any point features (e.g. spires).

Figure 9.3 presents indicative examples of buildings within the building height limits.

Fig 9.2: KP1 Building Heights

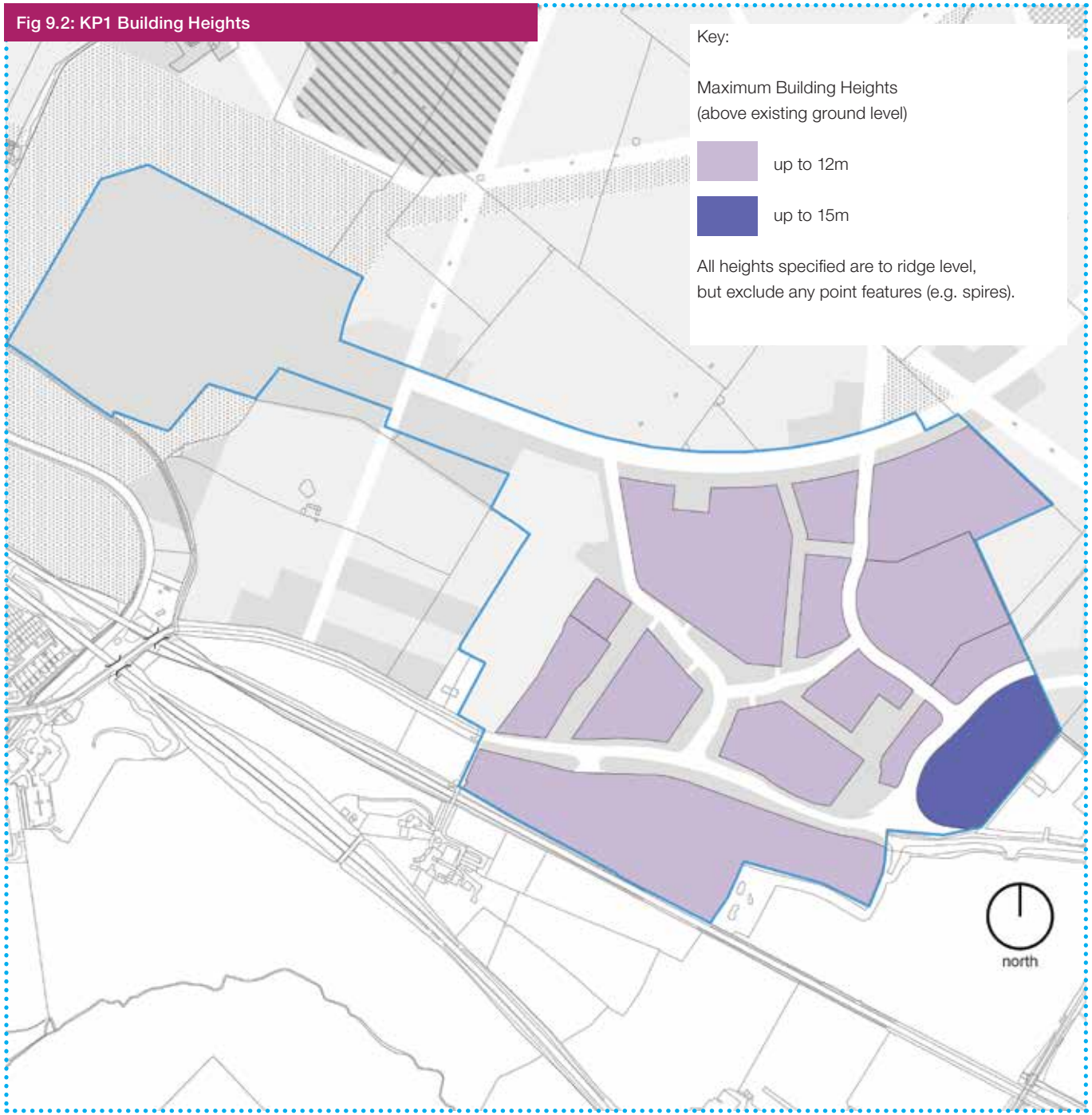
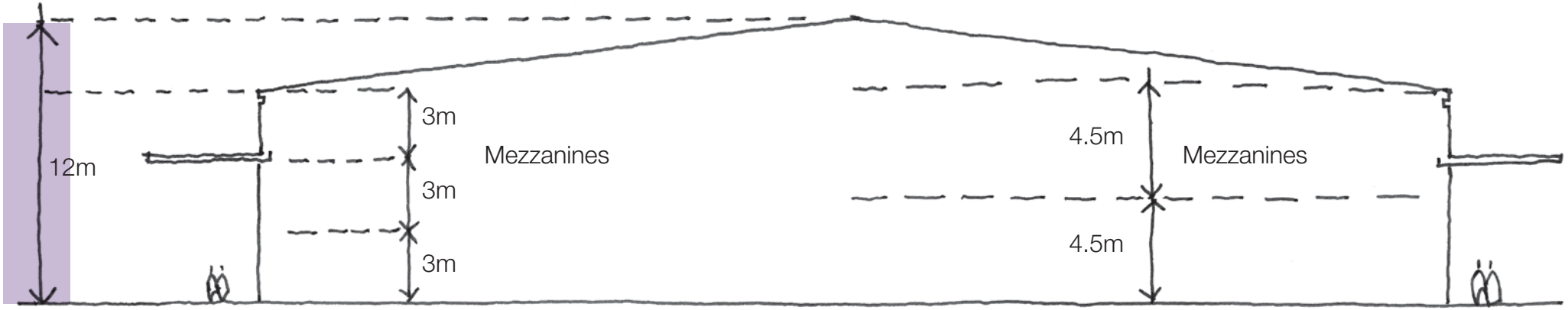
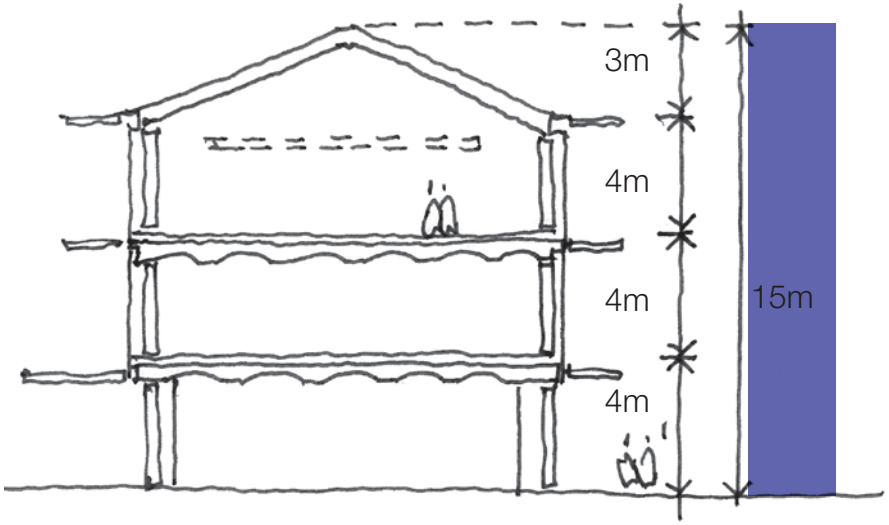


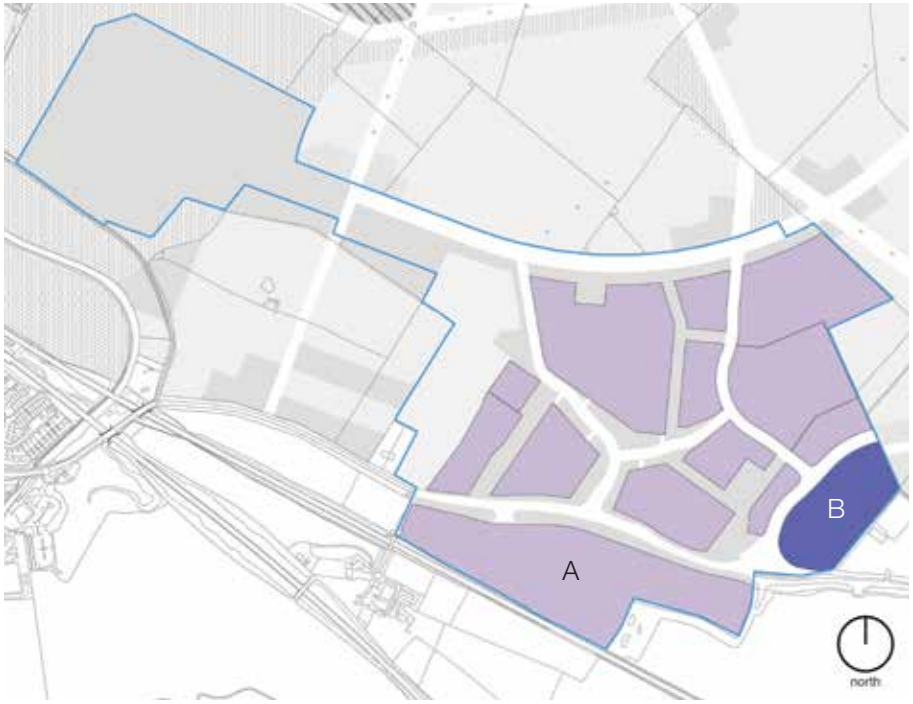
Fig 9.3: Indicative examples of building heights



A. Example of a B8 commercial unit that could be located in the commercial parcel south of the A428, to the upper limit of 12m in this location.



B. Example of B1 office building in the commercial parcel, north of the A428, to the upper limit of 15m in this location.



9.3 Car & Cycle Parking Standards

Standards for both residential and non-residential use vehicle parking should follow the Transport Assessment that accompanied the Outline Planning Application.

The maximum levels of parking are set out in Appendix 2 of Rugby Borough Councils Local Development Framework, Planning Obligations, Supplementary Planning Document, March 2012.

Parking for those with impaired mobility should be in addition to the parking standards as outlined within the SPD.

Unless otherwise stated the standards quoted within the SPD take into account visitor spaces.

To encourage more cycling, the level of cycle parking provision should fully complement cycle access opportunities to, from and through the proposed development. Provision for pedal cycles and motor cycles will be in accordance with the SPD.

The standards may be reviewed in the future based on changing circumstances. The design of any future phases must take into account such changes.

Detailed design considerations
The layout and design of vehicle parking proposals should take account of:

- The type and number of vehicles that are expected to be parked at the site;
- The height, width, length and manoeuvring characteristics of those vehicles;
- The need to leave and enter the highway in a forward facing direction;
- The need to avoid complicated, or excessive manoeuvring and reversing of vehicles, in order to reduce the risk of accidents;
- The desirability of providing parking spaces that are sufficiently wide as to avoid the risk of damage from opening doors. Therefore, the minimum width of car parking spaces should be 2.5m
- The “secured by design” initiative, in order to reduce the opportunity of crime and the fear of crime;
- The need to produce a design that fits in with and takes account of local environment considerations, and enhances the character and appearance of the local area.

Parking Strategy

This chapter sets out the Parking Management Strategy for the Site and includes a summary of the current parking standards along with setting out how the standards are adopted and managed. Developers of individual plots will submit a Parking Schedule and Management Strategy to RBC with the Reserved Matters planning applications.

Parking standards for Rugby are set out in Appendix 2 of the RBC Planning Obligation SPD (March 2012) with development sites classified as having “High Accessibility” if they have very good access to bus or good access to bus and rail, and having “Low Accessibility” if they do not have good access to bus or rail. Based on the definitions in the SPD, the Site falls outside of the High Access Zone. However, upon full completion and with the introduction of new bus services, the Site is likely to have either good or very good bus accessibility.

Residential Car Parking

The adopted parking standards set out parking standards for houses and apartments based on the number of bedrooms and accessibility level from a maximum of 0.5 spaces per unit for studio apartments in highly accessible locations through to a maximum of 3 spaces per unit for 4 bedroom units in areas with low accessibility.
The notes state that the standards are guidance figures and that applications will be considered on their own merits and according to the suitability of the location of this type of use. The notes also state that garages are considered to be one car plus one cycle space and that on-street parking should be discouraged. It also suggests that the standards take into account visitor parking.

The overall residential parking ratio for the completed development will be in the order of 1.5 spaces per dwelling across the site, unless otherwise agreed by RBC, with a range from no parking for some apartments up to a maximum of 3 spaces for some larger units.

- Not all units will necessarily be allocated dedicated parking bays. Parking will be provided within the overall plots on the adjacent highway;
- Houses will be provided with garages and/or allocated parking bays in accordance with the standards. Details of the parking layout will be submitted with the relevant Reserved Matters planning applications; and
- **Visitor parking** will typically be provided on-street or within communal parking areas. Details will be submitted with the Reserved Matters planning applications.

Residential Cycle Parking

Turning to residential cycle parking, the RBC standards suggest the following minimum for houses and apartments:

- **Houses – a minimum of 1 space per unit** in a secure and undercover location;
- **Apartments with less than 3 bedrooms** - a minimum of 1 space per unit in a secure and undercover **plus 1 loop/hoop per apartment for visitors**
- **Apartments with 3 or more bedrooms - a minimum of 2 spaces** per unit in a secure and undercover **plus 1 loop/hoop per apartment for visitors**

All residential units will be provided with secure parking for bicycles. Parking for the apartments will be provided internally for residents with spaces within the curtilage for visitors. Parking for houses is proposed within the garages (where provided) or alternative locations within the curtilage as approved. Cycle parking will be provided within public areas for visitors.

Precedent of visitor cycle stands next to entrance

Employment Parking

The adopted parking standards set out maximum standards for employment land uses based on the type of employment and accessibility level as follows:

- **Car parking** - from a maximum of 1 space per 30sqm for B1(a) office development in areas of low accessibility through to a maximum of 1 space per 120sqm for B8 storage and distribution units in highly accessible areas. Disabled parking to be provided at a minimum of 4% for the first 100 spaces plus 1 space per 100 parking spaces thereafter;
- **Cycle parking for staff** - from a minimum of 1 stand per 150sqm for B1(a) office development through to a minimum of 1 stand per 500sqm for B8 storage and distribution units, or a minimum of 1 space per 8 staff, whichever the greater;
- **Cycle parking for visitors** - from a minimum of 2 spaces (1 stand) per 500sqm for B1(a) office development through to a minimum of 2 spaces (1 stand) per 1,000sqm for B8 storage and distribution units; and
- **Parking for commercial vehicles** will be determined on a plot by plot basis.

Precedent of employment car parking set in landscape

Retail Parking

The adopted parking standards set out maximum standards for retail land uses based on the type of retail and accessibility level as follows:

- **Car parking** - from a maximum of 1 space per 20sqm for A1 non-food retail and general retail development in areas of low accessibility through to a maximum of 1 space per 10sqm for A5 hot food take away units in highly accessible areas. Disabled parking to be provided at a minimum of 5% for the first 100 spaces plus 3 spaces per 100 parking spaces thereafter;
- **Cycle parking for staff** - from a minimum of 1 space per 300sqm or 1 space per 6 staff for A1 and A2 retail, whichever the greater, and at a minimum of 1 space per 40sqm or 1 space per 6 staff for A3, A4 and A5 uses, whichever the greater;
- **Cycle parking for visitors** - at a minimum of 1 stand per 200sqm for A1 and A2 retail, and at a minimum of 1 stand per 20sqm for A3, A4 and A5 uses; and
- **Parking for commercial vehicles** will be determined on a plot by plot basis.

Precedent of parking for mixed use area, integrated with public realm design

Community Uses

The proposals include a range of community uses with primary and senior schools, health facilities along with general community centres.

The adopted parking standards set out maximum and minimum parking for cars and cycles respectively based on land use category and level of accessibility. Developers of individual plots will submit details with Reserved Matters planning applications setting out numbers (in accordance with the adopted parking standards), location and management of parking.
In terms of the most likely uses on the site, parking and cycling standards are set out as follows:

- **School car parking** – between 1 and 2 spaces per classroom for staff and visitors but with zero provision of on-site parking for parents;
- **School cycle parking** – each proposal to be considered on its own merits;
- **Day nursery car parking** – between 0.5 and 1 space per full-time staff member for staff, visitors and parents;
- **Day nursery cycle parking** – 1 cycle stand per 6 full-time staff members with a minimum provision of 2 stands;
- **Doctors/dentists/veterinary surgeon car parking** – between 2 and 4 spaces per consulting room;
- **Health centre car parking** – between 3 and 6 spaces per consulting room;
- **Doctors/dentists/veterinary surgeon and health centre cycle parking** – the greater of 1 space per 2 consulting rooms or 1 space per 6 staff for long stay parking and 1 stand per consulting room for short stay parking;
- **Health club car parking** – between 0.5 and 1 space per 3 staff and between 0.5 and 1 space per 10sqm of hall/pool area; and
- **Health club cycle parking** - the greater of 1 space per 6 staff or 1 space per 40sqm for long stay parking and 1 stand per 20sqm for short stay parking.

In the event that other specific uses are considered, reference should be made to the relevant parking standards at that time, which are currently contained in the Rugby Borough Council LDF Planning Obligations Supplementary Planning Document of March 2012 at Appendix 2.

Precedent of cycle stands at entrance to community facilities

Precedent of cycle stands at entrance to community facilities

9.4 Public Transport

Public Transport Services

The overall strategy envisages the introduction of new routes through the Site connecting it with DIRFT and Hillmorton along with Rugby town centre and railway station. The strategy is based on initially increasing the frequency of existing services close to the site (the 10 and 96 routes) through **the introduction of a new bus to reach a 20 minute frequency past the site on the A428 before the completion of Key Phase 1.**

Thereafter, new buses will be introduced on new routes at regular intervals, primarily to link the site with Hillmorton and beyond to Rugby town centre via the new link road once available. The exact details of these routes will be agreed by the **Transport Review Group (TRG)** and will react to site specific demands whilst taking account of opportunities to serve nearby areas and maximise patronage levels. For example, the introduction of new buses will take account of routes and services introduced as part of the adjacent DIRFT III development to ensure that links between the sites are well catered for as well as ensuring that buses are appropriately sized and not overlapping, e.g. where one service would be most appropriate. Furthermore, the new routes will need to take account of the way in which access is provided to both the A428 and the A5 as the site is built-out.

Within the wider Development site, buses will use primary and secondary roads and these will also be reviewed by the TRG. **There is no requirement to route buses through the site of Key Phase 1** but this can be reviewed and amended as necessary by the TRG.

The services will generally operate between 05:00 and 23:00 each weekday subject to there being appropriate demand. It is envisaged that around 4 to 6 buses per hour will be available (upon completion of the overall Development) during the early morning and late evening (subject to demands), with 6 to 8 buses per hour during the day and rising to around 10 buses per hour at peak times.

The routing and frequency of services along with size of buses will be reviewed on an ongoing basis throughout the build programme with the aim of ensuring that the bus service provision meets the needs of the development.

Public Transport Infrastructure

The overall proposals include the creation of a highway network with primary links to the A5, A428 and Clifton Road/Butlers Leap, along with secondary connections to development plots. Bus priority measures will be introduced wherever practical and necessary within the wider Development Site to ensure that buses have priority over general traffic. The measures will be reviewed on an ongoing basis throughout the build programme with changes made as and when necessary.

Bus stops will be located at key locations throughout the wider Development Site, **initially with new stops on the A428 adjacent to the site access junction and then additional stops on the A428 along the site frontage,** with the objective that no individual plot should be more than around 400m from a bus stop. The stops will be constructed to be accessible and will include shelters along with Real Time information to the appropriate standard. See Fig. 9.4, below illustrating new stops at site entrance and possible future stops (lighter shade) with 400m / 5 minute walking distance radii.

Fig 9.4: Proposed indicative bus stops

9.5 Cycling and Walking

Cycling and Walking – On Site

The proposals include a network of footpaths and cycleways along with cycle parking and crossings. Pedestrian footways will be provided adjacent to all of the roads (except shared surface access roads) at a **minimum width of 2m**, with wider footways in areas of high pedestrian volumes. In addition, pedestrian footpaths will be constructed between individual development plots to encourage walking as a meaningful mode of transport.

Footpaths and cycleways will be constructed along key desire routes between land uses to ensure that walking and cycling are considered as a real choice. The routes will be lit with appropriate security levels.

Pedestrians and cyclists will be given priority wherever possible over all other forms of traffic with crossing facilities taking the form of signalised crossings, Zebra crossings or shared surfaces depending on the location and volumes. Details will be submitted with Reserved Matters planning applications setting out locations and type of crossing facilities.

Cycleways will be provided either as shared facilities (with pedestrians or in bus lanes) or as dedicated facilities. Cycle parking will be provided in key locations in accordance with minimum standards as set out in relevant Rugby Borough policy guidance. Cycle parking will also be provided within public areas for general use and within individual plots as these are developed out. Developers of individual plots will submit details with Reserved Matters planning applications identifying the numbers and locations of cycle parking along with links to walking and cycling facilities.

Cycle lanes will be created alongside all major roads, either on-street or dedicated off-street, and along key desire lines either as shared or dedicated facilities, with cyclists given priority over motorised traffic. Crossing facilities will be provided either as part of signalised junctions or signalised Toucan Crossings, with details submitted with Reserved Matters planning applications.

Cycling and Walking – Off Site

There are existing routes under the WCML in the vicinity of the Site in addition to the A428 and Hillmorton Lane, one via Moors Lane and the other via Hillmorton Locks. The proposals include retaining these accesses broadly in their existing form, albeit improved for pedestrians and cyclists, in order to provide connectivity to Hillmorton and beyond. Moors Lane is a narrow single track road that runs between the A428 (a short distance to the east of the point it passes under the WCML) and Lower Street in Hillmorton.

The proposals include closing Moors Lane to motorised traffic in the vicinity of the A428 (a short distance to the north of the existing residential property on the corner) and to the north of the WCML at the western end (thus allowing continued vehicular access to the existing Network Rail compound), effectively diverting Moors Lane to intersect with the site internal highway network. Further improvements to the western section of Moors Lane under the WCML could include additional street lighting along with CCTV and appropriate security enhancements.

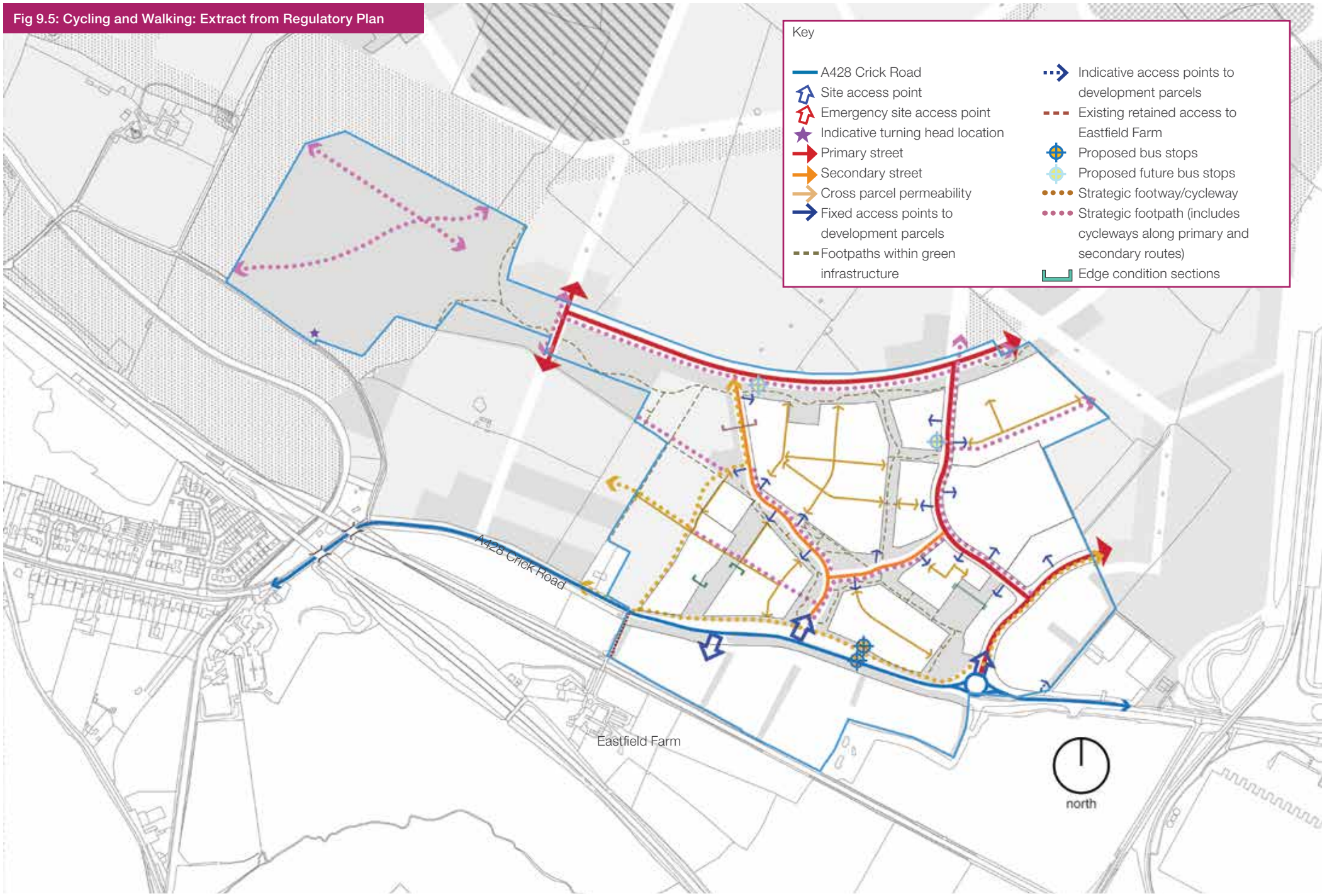
Hillmorton Locks is accessed from Hillmorton by travelling along Brindley Road which passes under the WCML and then along The Locks over the Oxford Canal. There are footpaths adjacent to these roads that connect to the network within Hillmorton and Rugby. There is an existing public access route (WCC has indicated that it is an E class road) that runs along the north-western boundary of the Site, connecting Hillmorton Locks to the A5. The proposals include connections to the existing route that runs along the north-western boundary of the Site along with facilitating connections to existing footways from the Site to create a seamless network of footpaths and cycleways within the area.

A 3m wide shared facility will be provided adjacent to the link road connection to Clifton Road/Butlers Leap, with a controlled crossing point at the junction with Hillmorton Lane. This route will be available once the link road is completed (at the latest before the occupation of the 1,750th dwelling on the wider Development Site). Along with the routes into Hillmorton and beyond, the facility adjacent to the link road will provide further connectivity towards Rugby town centre and the station.

The proposals for the overall Development also include a 3m wide shared footway/cycleway along the northern side of the A428 to improve connectivity between Hillmorton/Rugby and DIRFT I & II and the Site. It will be provided between the junction with Moors Lane to the west (with opportunities to continue via Moors Lane as set out above or on the existing footway that continues alongside the A428 and under the WCML) and the site boundary with DIRFT II to the east (where a new route is to be provided through the permitted warehouse scheme on the north side of the A428, connecting with the A428 adjacent to the A5/A428 roundabout). The new route between Moors Lane and DIRFT II will be lit with crossing facilities over existing and new roads as appropriate. **The overall route will be implemented before the occupation of the 650th dwelling and the majority of the route, between Moors Lane and the A428 eastern access, will be implemented by the 200th dwelling.**

There are currently no formal pedestrian or cycle links across the A5 due to the nature of the road along with the nature of the existing development. Allowances have been made for pedestrian and cycle facilities to be provided within the new junctions on the A5 to link to the DIRFT III proposals. See Fig. 9.5, cycling & walking extract from Regulatory Plan.

Fig 9.5: Cycling and Walking: Extract from Regulatory Plan



9.6 Refuse & Recycling Strategy

Residential

It is a requirement of Building Regulations that all properties have access to a municipal waste collection bin within 30 metres of a home's entrance and that refuse bins should be within 25 metres of a waste collection point. The standard response to this regulatory requirement is to provide each home with its own set of waste bins.

Rugby Borough Council (RBC) operate their own waste collection fleet. Under this strategy each property is provided with 3 wheeled bins.

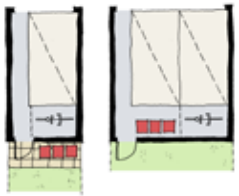
The storage and collection strategy will vary between the different types of dwelling. This is illustrated in the following diagrams. Suggestions as to how bins can be incorporated into car barns are also illustrated opposite.

Commercial

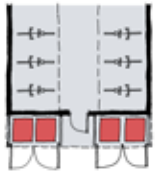
All commercial plots and units should incorporate appropriate facilities for refuse and recycling. Provision of a self-contained refuse compound which is well screened, safe, secure and accessible would be most appropriate but detailed design will need to be considered as individual proposals are brought forward. See the last sentence under Waste Guidelines in Appendix 2 for further reference.

Car barns:

1. Car barns can provide bin storage areas at the rear of the shelter, to be wheeled to the collection point on specific days.



2. Garages for dwellings can also provide a storage area for bins, or bins can be stored against a wall on a paved area within the private amenity space, however this should be not be placed fronting onto the main entrance area / drive.



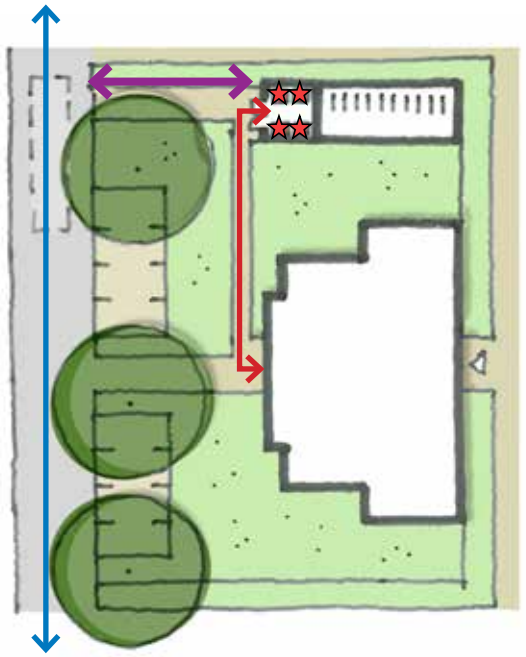
3. Apartment blocks are provided with communal bin stores. This can be designed as part of the bike store within the grounds of the apartment block or separate bin stores integrated with the building. This must not face the public realm or main pedestrian entrance to the block. Open bin storage areas should never be placed along the main approach to the parking court of the block.

Fig 9.6: Residential refuse collection options

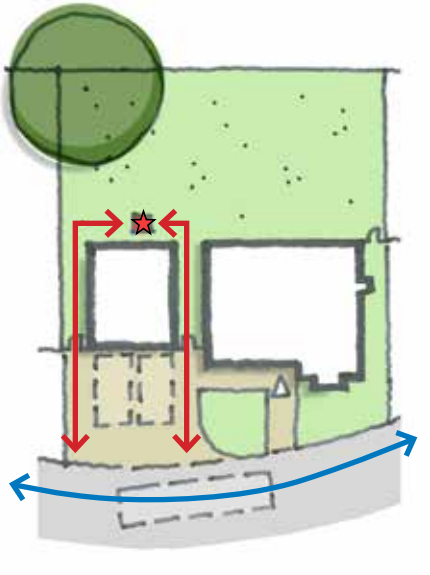
Key

- Waste bins location
- Waste bin communal collection point
- Occupier route to collection point
- Refuse collectors walking route
- Refuse collection vehicle route

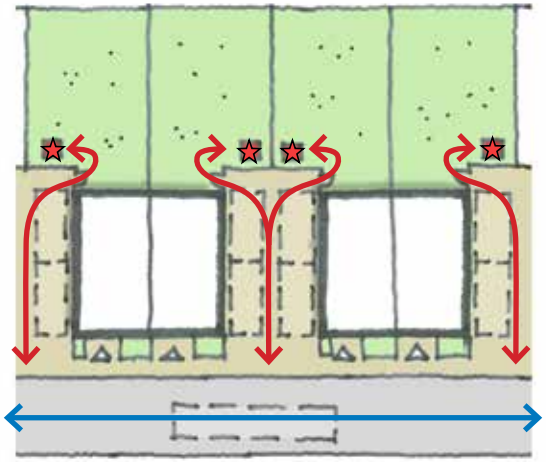
Apartments:



Detached dwellings:

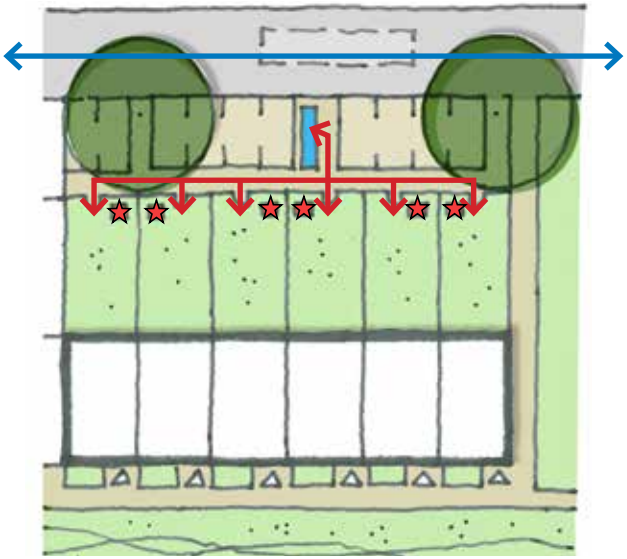


Semi-detached dwellings:

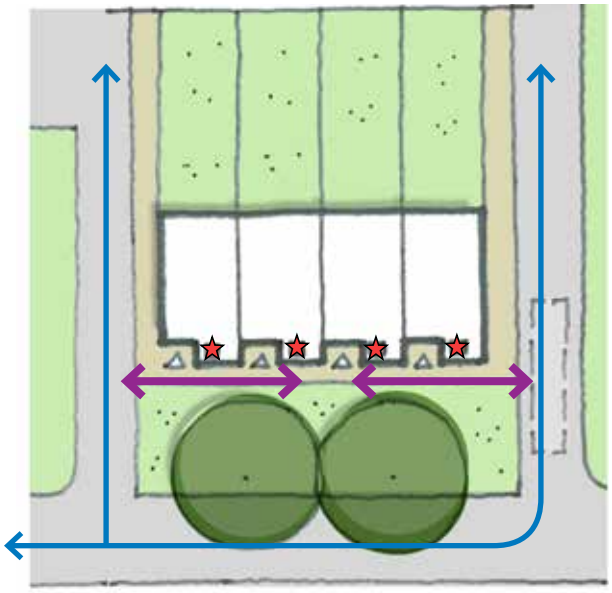


Terraced example 1:

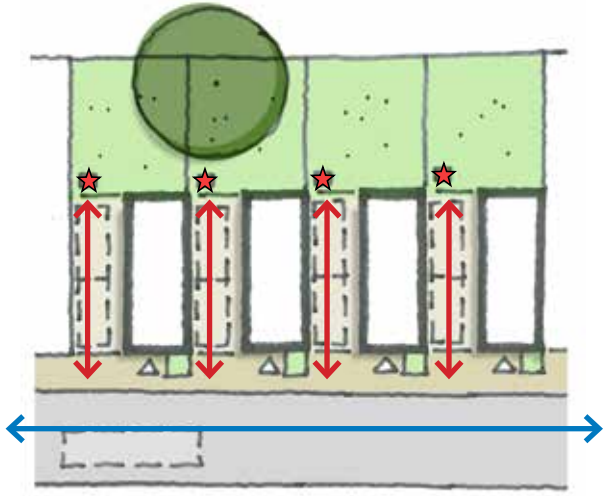
Terraced example 2:



Terraced example 3:



Terraced example 4:



9.7 Play Provision

Quantity

KP1 makes provision for:

- Combined NEAP / LEAP;
- A natural area of informal play; and
- Additional opportunities for informal play and doorstep play within the network of Green Infrastructure and residential pocket parks, (subject to discussion with RBC)

Location

The location of the combined NEAP/LEAP and natural area of informal play are fixed, as illustrated on the Regulatory Plan.

Figure 9.7 shows the walking distance catchment areas around these play areas:

- NEAPs provide coverage over a 1,000m walking distance (or 15 mins walking time).
- The natural area of informal play will provide coverage over a 400m walking distance (or 5 mins walking time).

The KP1 proposals include a combined LEAP and NEAP facility that will create a 'destination' playground in the Central Open Space.

This is an additional NEAP, over and above the original OPA Development Framework Plan Parameter Plan. The provision of the combined LEAP and NEAP recognises the need to offset the compromises inherent in such a complex scheme by providing a high quality, large scale facility to address the potential for longer travel times for a minority of residents as the Key Phases are developed.

The location of the combined play area is the optimum location for what will be a 'destination' play space for the local area. The siting of both play areas have been determined by the consideration of factors including the need to be well overlooked and on well used routes, whilst also ensuring recommendations with regards offset distances from properties have been observed. See Figure 9.7, Walking distances to Formal Play Facilities in KP1.

The proposed provision of 1 NEAP/LEAP and natural area of play within KP1 amounts to a minimum 1,800sqm. Whilst this does not meet the Local Plan standard at present, it will be supplemented by the considerable opportunity for natural play in areas of informal open space and doorstep play areas within the residential parcels as they are developed. Therefore the provision of the formal play spaces - once supported by the additional informal opportunities - will meet the needs of the RRS population.

In accordance with Part 8 of the S106 the first LEAP is to be provided prior to the first residential occupation. The Key Phase 1 Delivery Plan requires that the scheme for this LEAP is approved prior to commencement of residential construction. The position of this LEAP was identified in the Open Space Delivery Plan appended to the KP1 Delivery Plan.

As part of the design evolution for KP1 a well-considered strategy for play provision has been progressed. It now provides a more natural and informal approach to the first play area which will complement the second formal combined LEAP / NEAP provision in the formal open space.

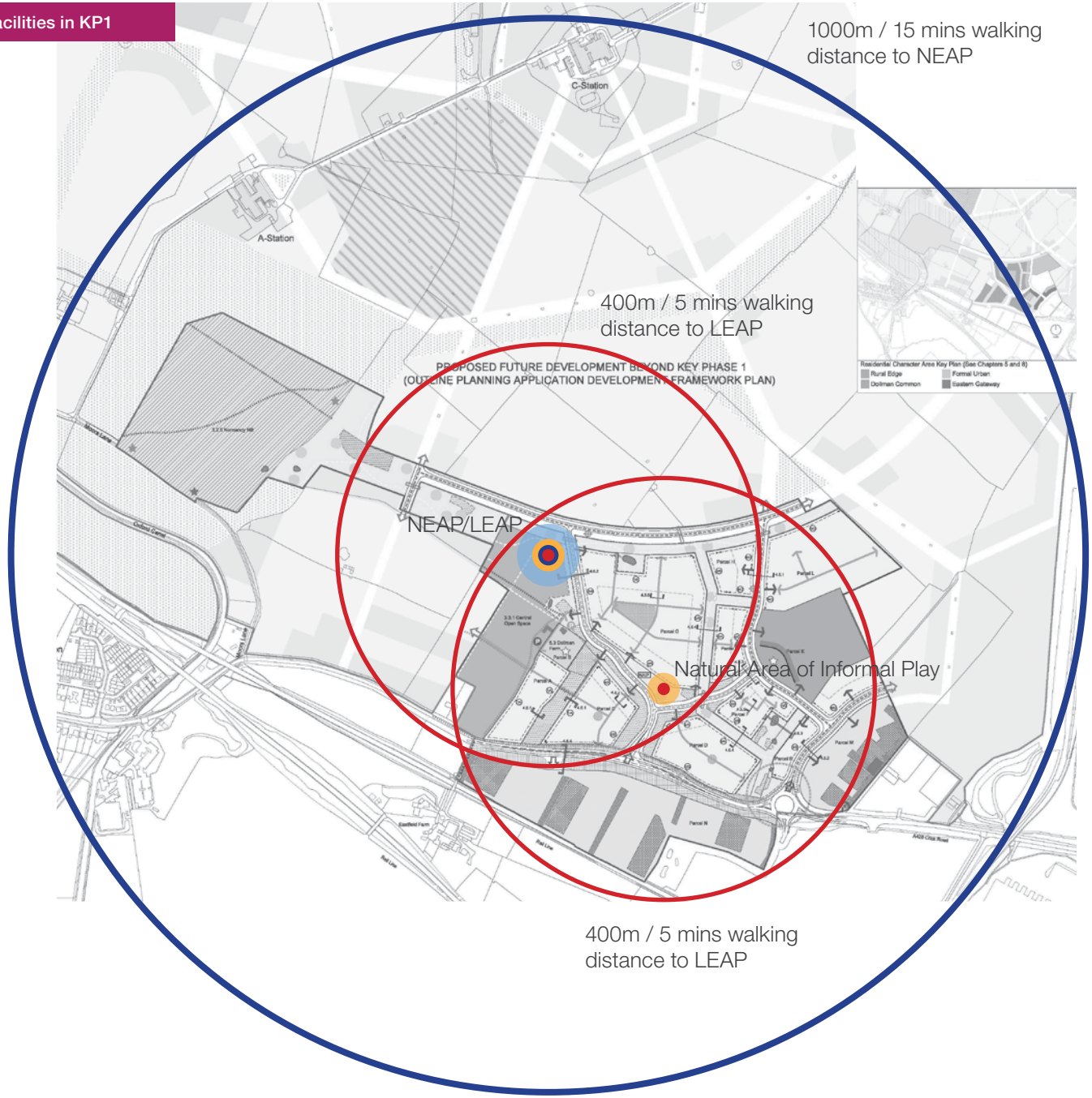
This informal natural area for play now constitutes the equivalent and replacement provision for the first LEAP in respect of the S.106, the outline planning conditions, and the approved KP1 Delivery Plan. It will be constructed prior to the first occupation and in accordance with the KP1 Delivery Plan the scheme will be approved under the trigger at Schedule 5 of the S.106.

Destination Park Precedent - Caldecott Park, Rugby

Precedent - creative, naturalistic formal play provision

Precedent - additional informal play opportunities

Fig 9.7 Walking Distances to Formal Play Facilities in KP1



LEGEND

Natural Area of Informal Play - 10m Buffer to Residential

NEAP - 30m Buffer to residential

9.8 Heritage

Rugby Radio Station Structures

The former RRS occupies the majority of the KP1. The principal RRS buildings and structures include ‘C’ Station (built in 1926) and ‘A’ Station (built in 1930) and are located beyond the KP1 site. ‘C’ Station is a Grade II Listed building and ‘A’ Station and all other contemporary and related RRS buildings and structures within the site are considered of national significance. Within KP1 there are a number of mast bases and anchors associated with the 1920s aerial system, formerly linked to ‘C’ Station, and numerous mast bases and anchors associated with several phases of aerial systems formerly linked to ‘A’ Station.

KP1 accommodates the retention of a number of late 20th century mast bases and anchors on Normandy Hill. The anchors and bases associated with the 1920s aerial system will be removed within KP1. However, the anchors and bases associated with two of the 1920s masts will be retained within informal open space within the wider outline site. In addition, RRS structures will be retained within the Great Crested Newt holding areas within the wildlife corridors in KP1. The conservation of mast bases and anchors within KP1 and the wider outline site is detailed within a Heritage Management Plan submitted pursuant to outline condition 6. Figure 9.8 shows the location of the 1920s mast bases and anchors that are to be removed and the ridge and furrow areas where later RRS structures will be retained.

In order to mitigate the loss of mast bases and anchors within KP1, a programme of recording, research and assessment will be undertaken. A Mitigation Strategy detailing the proposed mitigation measures for the RRS structures within KP1 will be submitted pursuant to Tier 2 condition 12.

Figure 9.9 illustrates where 1920’s mast bases and anchors will be retained as part of the Site Wide Heritage Management Plan.

Concrete anchor foundations and masts

Masts

Fig 9.8: Radio Mast Locations

Figure 9.8: Radio Mast Locations

Fig 9.9: Site Wide Heritage Management Plan

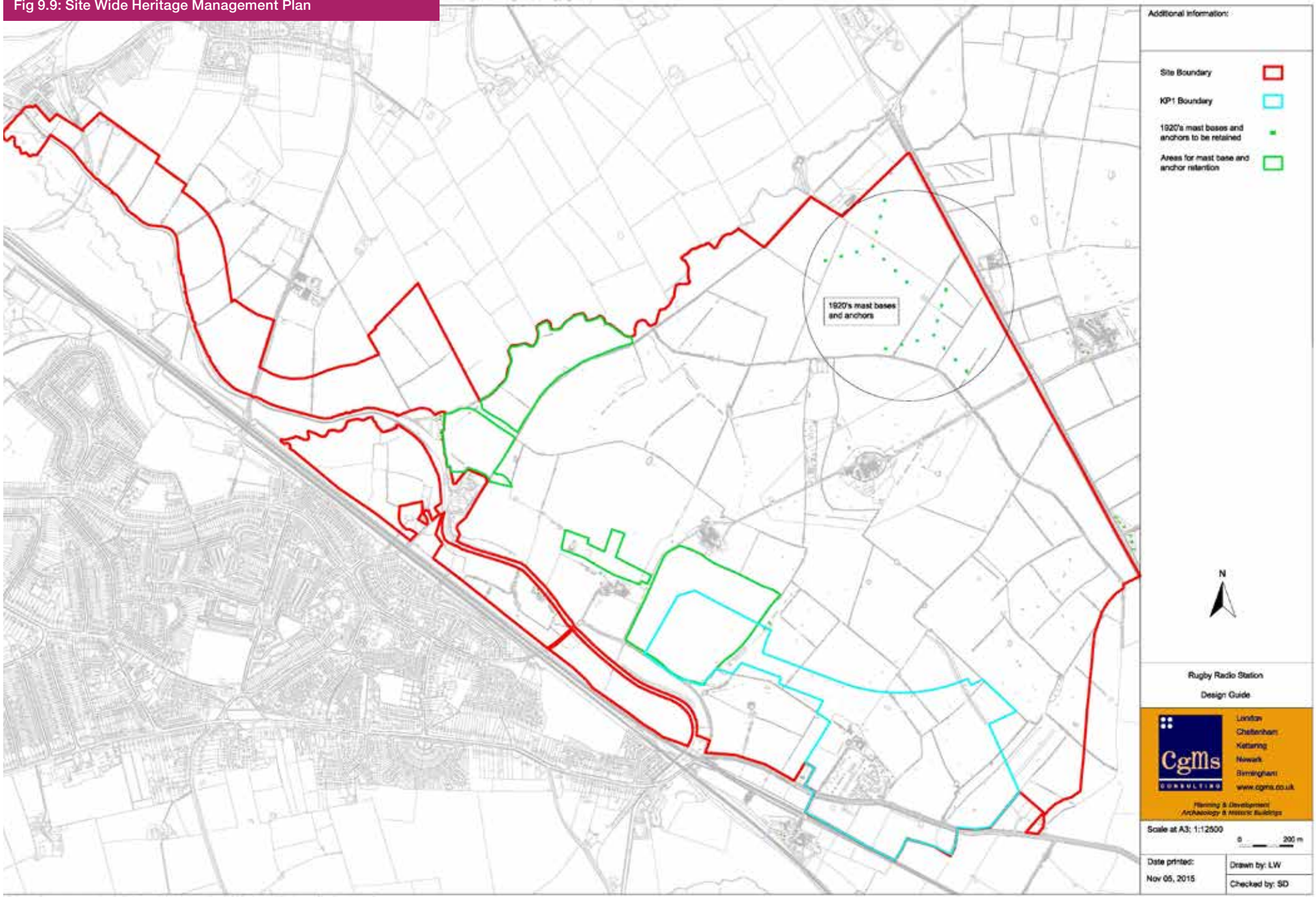


Figure 9.9: Site Wide Heritage Management Plan

Earthwork Ridge and Furrow

KP1 contains an extensive area of earthwork ridge and furrow representing part of the Medieval open fields of Hillmorton. An area of ridge and furrow on Normandy Hill has been identified for preservation and management. A Heritage Management Plan for the preservation of ridge and furrow within KP1 and the wider outline site will be submitted pursuant to outline condition 6, Figure 9.10 shows the location of the Ridge and Furrow Preservation Area within KP1 and Figure 9.11 shows the location of the Ridge and Furrow Preservation Areas across the wider outline site.

Elsewhere within KP1 the earthwork ridge and furrow will be removed to enable development. A programme of recording, research, analysis and assessment is proposed in order to mitigate the partial loss of earthwork ridge and furrow within KP1. These mitigation measures will be detailed in a Mitigation Strategy submitted pursuant to Tier 2 condition 12.

Earthwork Ridge and Furrow fixes:

- An area of ridge and furrow on Normandy Hill to be retained as identified on Figure 9.10 and on the Regulatory Plan
- Other areas of ridge and furrow to be retained where possible in the network of green infrastructure, particularly within wildlife corridors.

Fig 9.10: Earthwork Ridge and Furrow

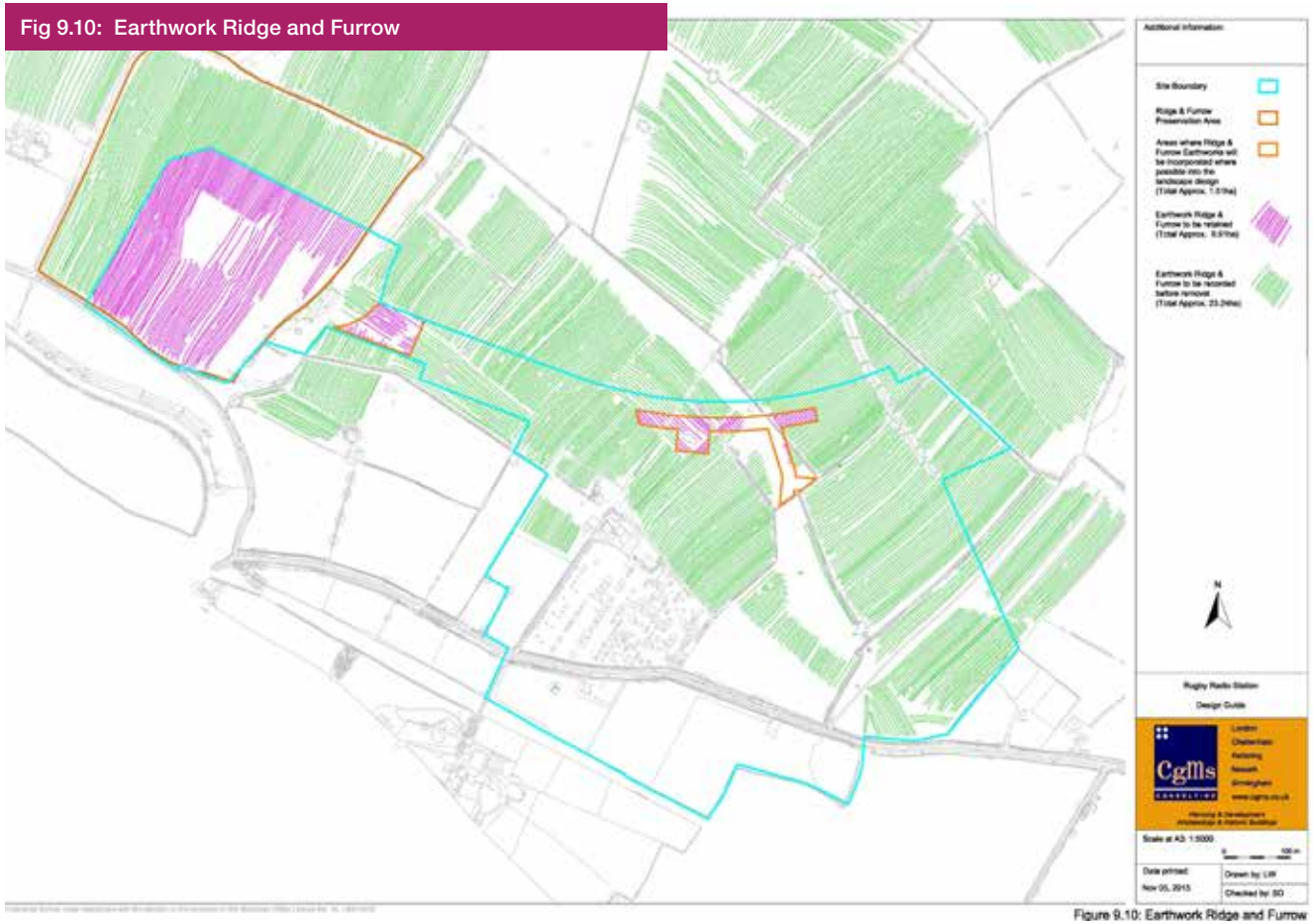


Figure 9.10: Earthwork Ridge and Furrow

Fig 9.11: Site Wide Preservation Areas

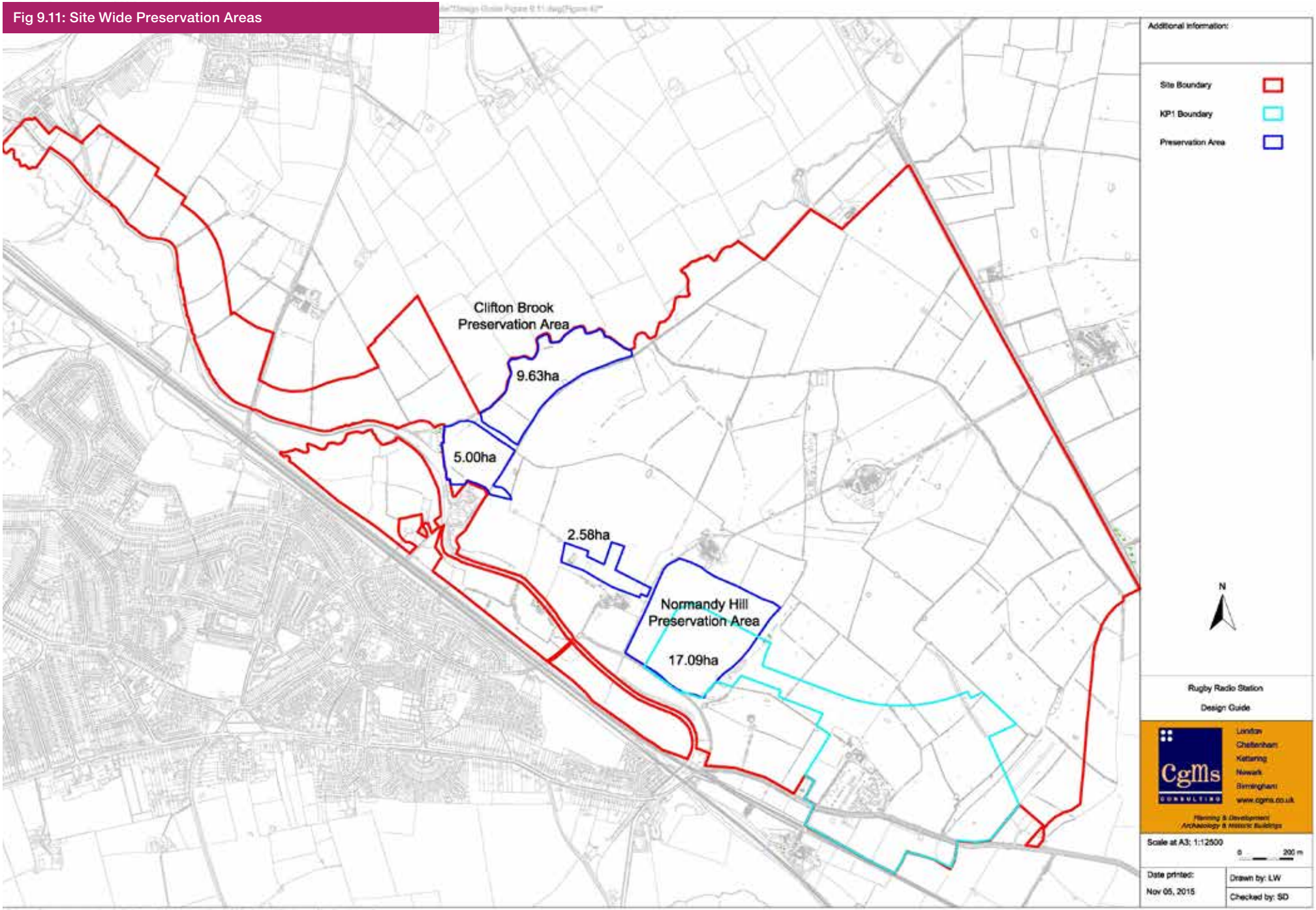


Figure 9.11: Site Wide Preservation Areas

Dollman Farm

Dollman Farm comprising a 19th century farmhouse and associated agricultural buildings is located within KP1. The farmhouse will be retained and refurbished. It is also proposed to retain and refurbish an associated 'L-shaped' brick outhouse building / barn located to the west of the farmhouse for potential integration within a proposed mixed use area (see the Regulatory Plan, and chapter 6.3 for Dollman Farm proposals). However, all other associated farm buildings will be demolished. The buildings are not listed and are considered to be of no more than local significance. The buildings will be recorded prior to demolition or refurbishment. A Mitigation Strategy detailing the programme of building recording will be submitted pursuant to Tier 2 condition 12.

Dollman Farm - farmhouse & out buildings

Brick barn adjacent Dollman Farm farmhouse

Dollman Farm Fixes:

- Farmhouse to be retained and refurbished
- 'L-shaped' brick outhouse to be retained and refurbished.

Below Ground Archaeological Remains

A comprehensive programme of geophysical survey and archaeological evaluation trenching undertaken within KP1 identified an area of archaeology. The area was located in the south-east corner of the site, adjacent to Crick Road, and comprised a Iron Age and Roman ditch system.

Mitigation of development impacts is based on advice provided by NPPF, the Rugby Borough Local Plan policies and discussions with the Council's archaeological advisor. If nationally important archaeology had been identified it would have normally been preserved in situ. However, the remains revealed by geophysical survey and archaeological evaluation trenching are of no greater than local importance. Nevertheless, and in accordance with guidance, it is necessary to preserve these archaeological remains by record. In this instance a programme of archaeological Strip, Map and Sample (SMS) excavation will be undertaken. The results of the excavations will be published in a variety of technical and non-technical formats. A Mitigation Strategy detailing the programme of SMS excavation will be submitted pursuant to Tier 2 condition 12.

9.9 Utilities: Existing

Existing utilities infrastructure includes the following considerations, as listed below and illustrated in Figure 9.12, opposite.

Electricity

An existing 33kV electricity overhead line (OHL) currently runs across the proposed KP1 development site supplying part of Rugby, to the west of the site.

Existing 11kV and Low Voltage (LV) overhead lines currently feed existing residential dwellings offsite (Warley and Crown Point residential dwellings) as well as onsite (Dollman Farm).

Refer to 9.10 of the Design Guide for further details on Diversions and Protection.

Telecommunications – BT Overhead Infrastructure

Existing BT overhead lines currently supply existing dwellings onsite as well as offsite, namely Dollman Farm (within the KP1 site boundary) and Eastfield Farm (located adjacent to the A428).

The existing BT overhead line indicated on BT asset records as running into the site to the west of the industrial units located off the A428, has historically been decommissioned and is not considered to be a constraint to development.

Refer to 9.10 of the Design Guide for further details on Diversions and Protection.

Telecommunications - BT underground Infrastructure

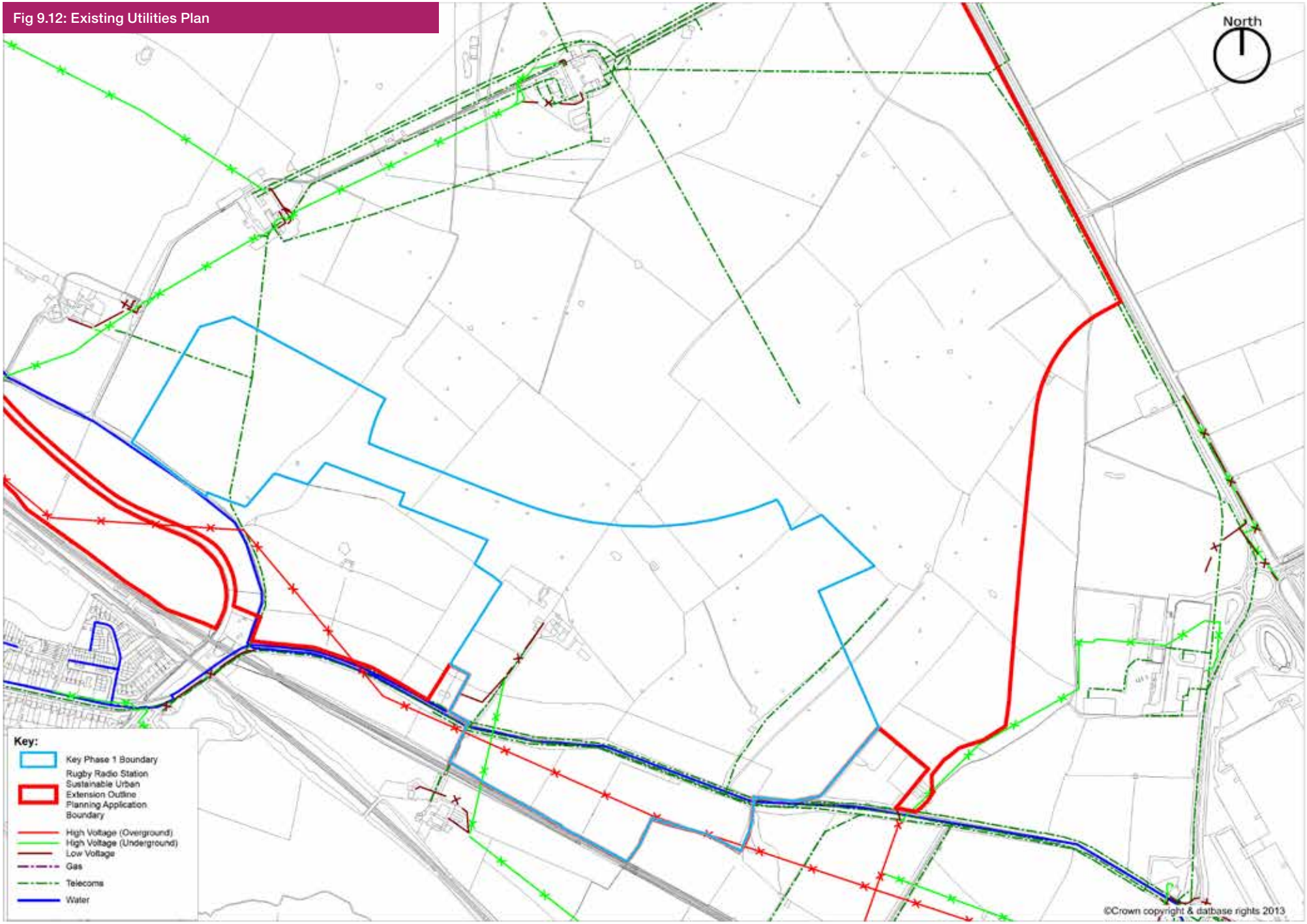
Existing BT underground infrastructure currently runs in Moors Lane, to the west of KP1 and through the proposed ridge and furrow area.

Refer to 9.10 of the Design Guide for further details on Diversions and Protection.

Utility lines adjacent Crick Lane

Utility lines over Moors Lane

Fig 9.12: Existing Utilities Plan



9.10 Utilities: Proposals

New Utility Supplies

The proposed development (KP1) will be supplied with utility infrastructure (electricity, gas, potable water and telecommunications) connected to the incumbent utility provider's networks and distributed below ground across the proposed development phasing parcels.

Utilities within highways (adoptable) layouts

Predominantly the new infrastructure will be installed within the proposed highway (adoptable) layouts and in accordance with National Joint Utilities Group (NJUG) guidelines. Figure 9.13 below illustrates the industry recommended minimum depths of cover to the crown of the apparatus within a 2 metre wide footway. Where the utilities are installed outside of the adopted highways (e.g. green spaces) then wayleaves and easement to allow for future access will be agreed with the relevant utility provider.

Note: The same positioning should apply in the carriageway/service strip (if safe and practical to do so) where a development has no footway(s) available for services and/or the boundary of the property is on the carriageway.

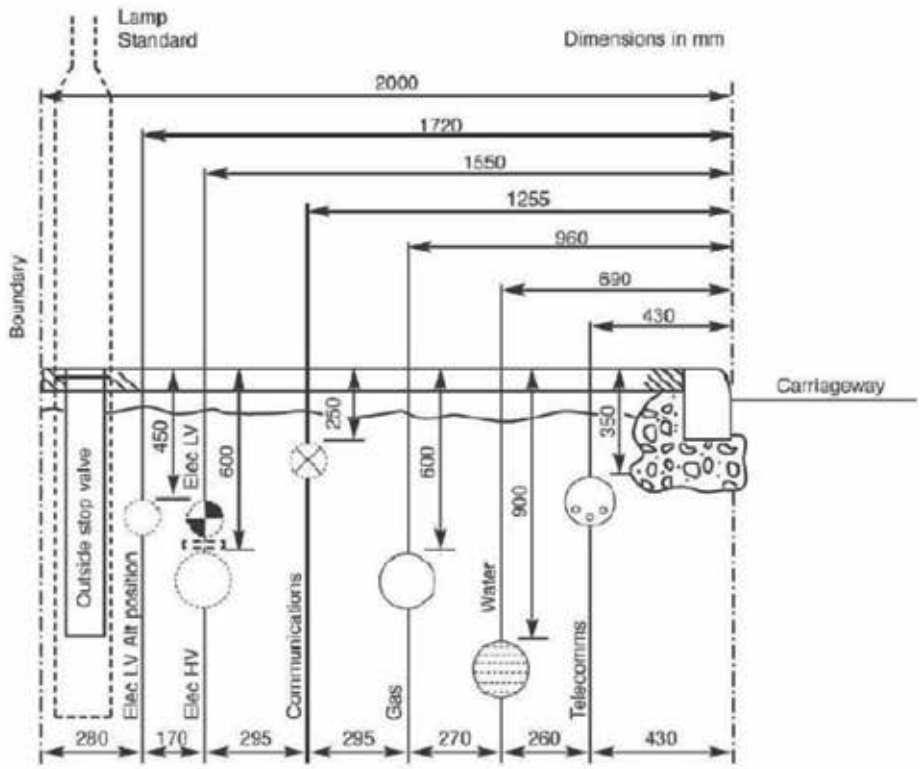


Figure 9.13: Recommended Positioning of Utility Apparatus in a 2m wide footway (Source: National Joint Utilities Group (NJUG))

Substations

A number of (above ground) on site high voltage to low voltage (HV/LV) distribution substations will be required across the phases, to distribute the HV power and LV underground cables into the services and metering points for each new building. The proposed new electricity substations shall be located within the residential areas, and would require a footprint of 4m x 4m. The proposed electricity substations will be designed in accordance with the ENA Engineering Recommendation G81 “Framework for Design and Planning, Materials Specification and Installation and Record for Low Voltage Housing Development Installations and Associated, New, HV/LV Distribution Substations” – Part 2 Materials Specification.

Gas Governor

A gas governor (also referred to as a Gas Pressure Reduction Station (GPRS)), to reduce the incoming pressure from medium pressure (MP) to low pressure (LP), for onsite distribution purposes, will need to be installed near to the incoming gas supply. The gas governor will require a footprint of approximately 6m x 4m. The proposed gas governor station will be designed in accordance with the British Standard for Gas Distribution and Pressure Regulations and BS EN 12186 Gas Supply Systems, Gas Pressure Regulatory Stations for Transmission and Distributions.

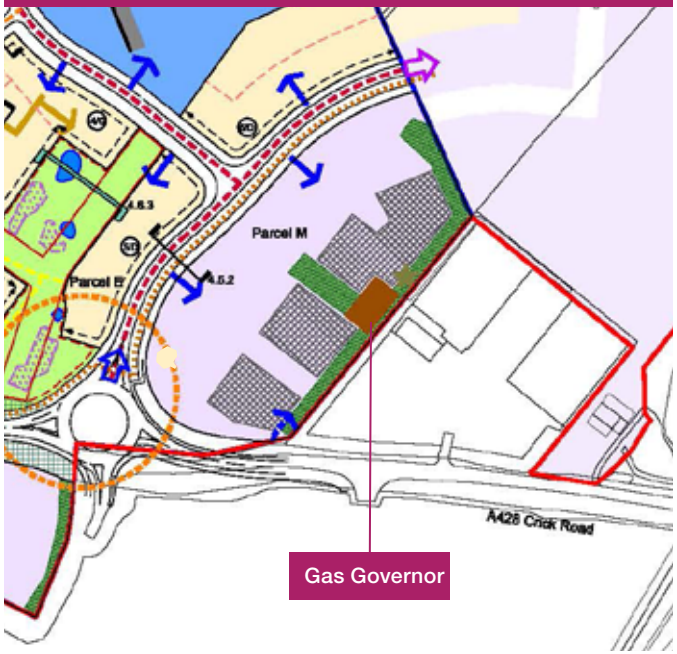
Access to the onsite electricity substations and the gas governor will be from the adjacent public highway (new highway layouts) with 24 hour free access for maintenance and inspection purposes by the respective network operators.

A 10m safeguarding zone is required around the gas governor.

Gas Governor Location

The Regulatory Plan illustrates the proposed location for a Gas Governor within the commercial parcel set in the edge landscape close to the proposed foul water pumping station. See figure 9.14.

Fig 9.14: Indicative Gas Governor Location



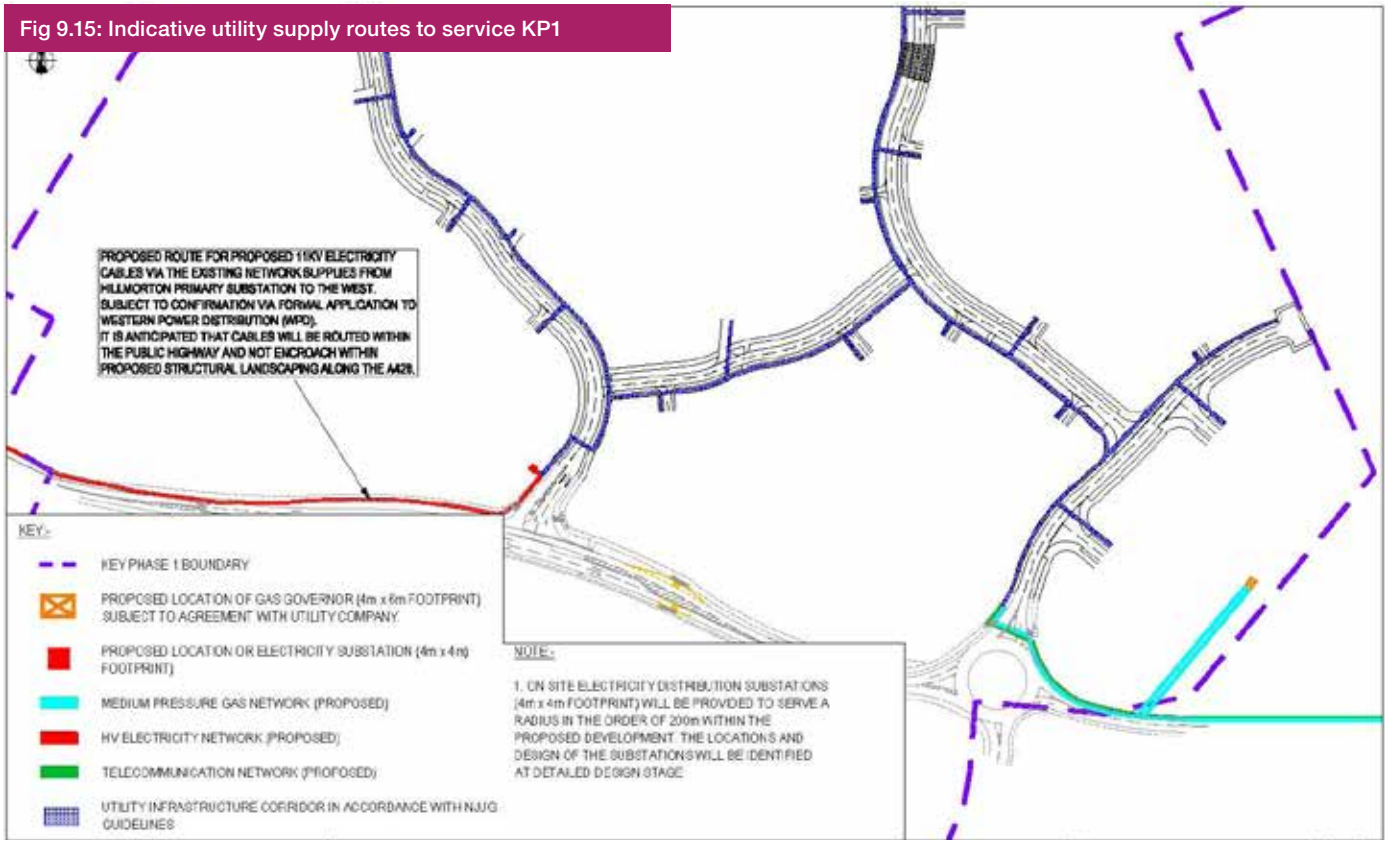
Offsite utility infrastructure

Offsite utility infrastructure (underground cables and pipework) will also be installed from the confirmed point(s) of connection onto the existing network(s) (electricity, gas & telecommunications) and into the development, via the new access roads connecting to the existing public highway. Refer to Figure 9.15 which indicates the proposed utility corridors into and within the KP1 development.

The utility infrastructure provision will be designed, constructed and commissioned in accordance with the required industry standards and as approved by the Regulators (e.g. OFTEL and OFGEM).

The indicative utility supply routes to serve KP1 (electricity, gas and telecommunications) are indicated on Figure 9.15.

Fig 9.15: Indicative utility supply routes to service KP1



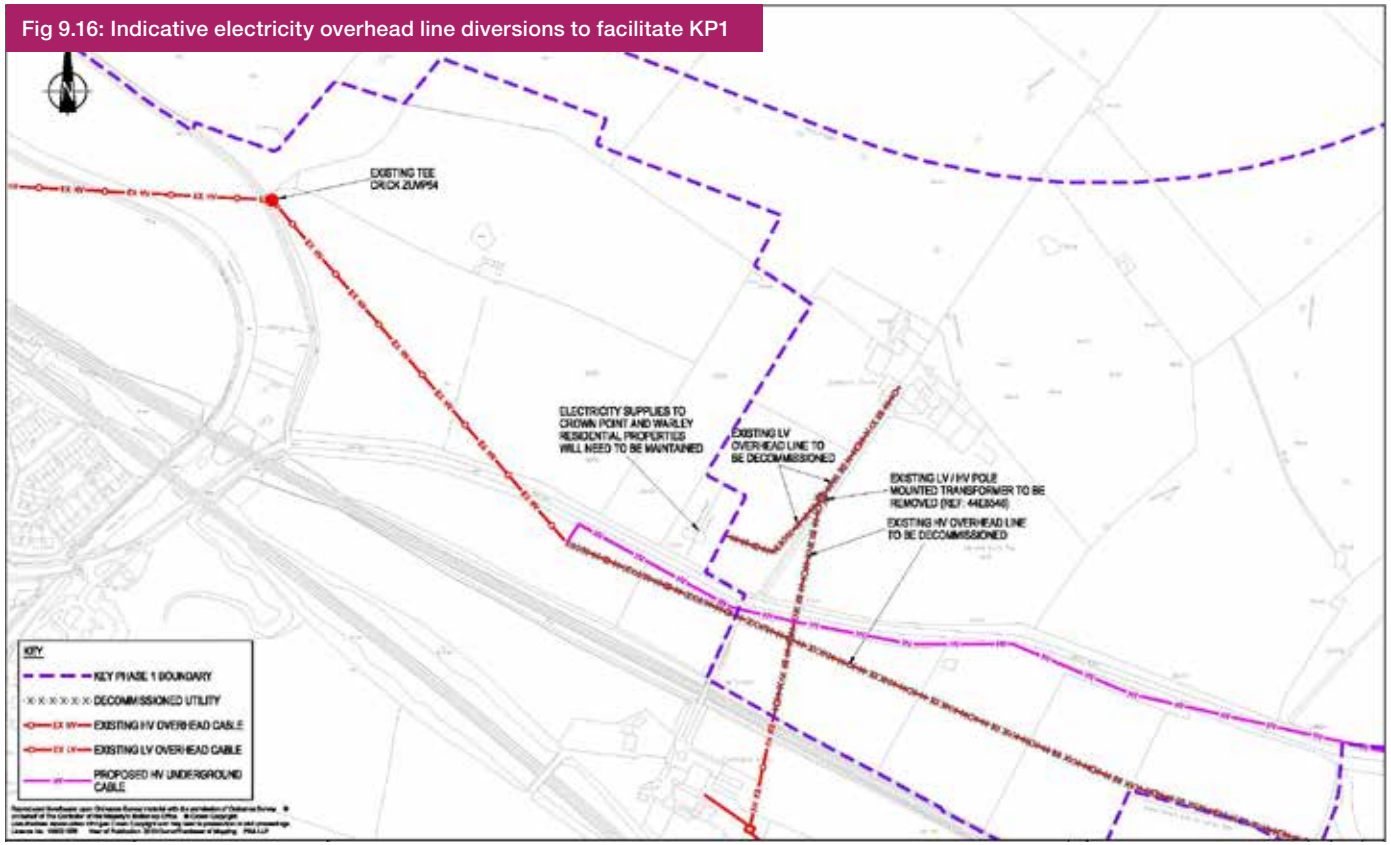
Utilities Diversions and Protections

An existing 33kV overhead line (OHL) within the southern boundary; as indicated on Figure 9.16 will need to be diverted (below ground), within a 6m to 10m wide easement (to be agreed with Western Power Distribution), where installed across private (non-public highway) land. However; current proposals are for the diversion route to be along the A428 Crick Road and Moors Lane, connecting onto the existing OHL pole, north of the Oxford Canal and tie back into existing underground 33kV cables within the A428 and east of the Commercial Area south of the A428.

An existing 11kV overhead line runs in a northerly direction through the western corner of the Employment Area reference EMP03a and this will be decommissioned, subject to the existing supplies to Crown Point and Warley residential dwellings being maintained.

It is also anticipated that the existing OHL supply to Dollman Farm will also be disconnected in due course as the development progresses.

Fig 9.16: Indicative electricity overhead line diversions to facilitate KP1

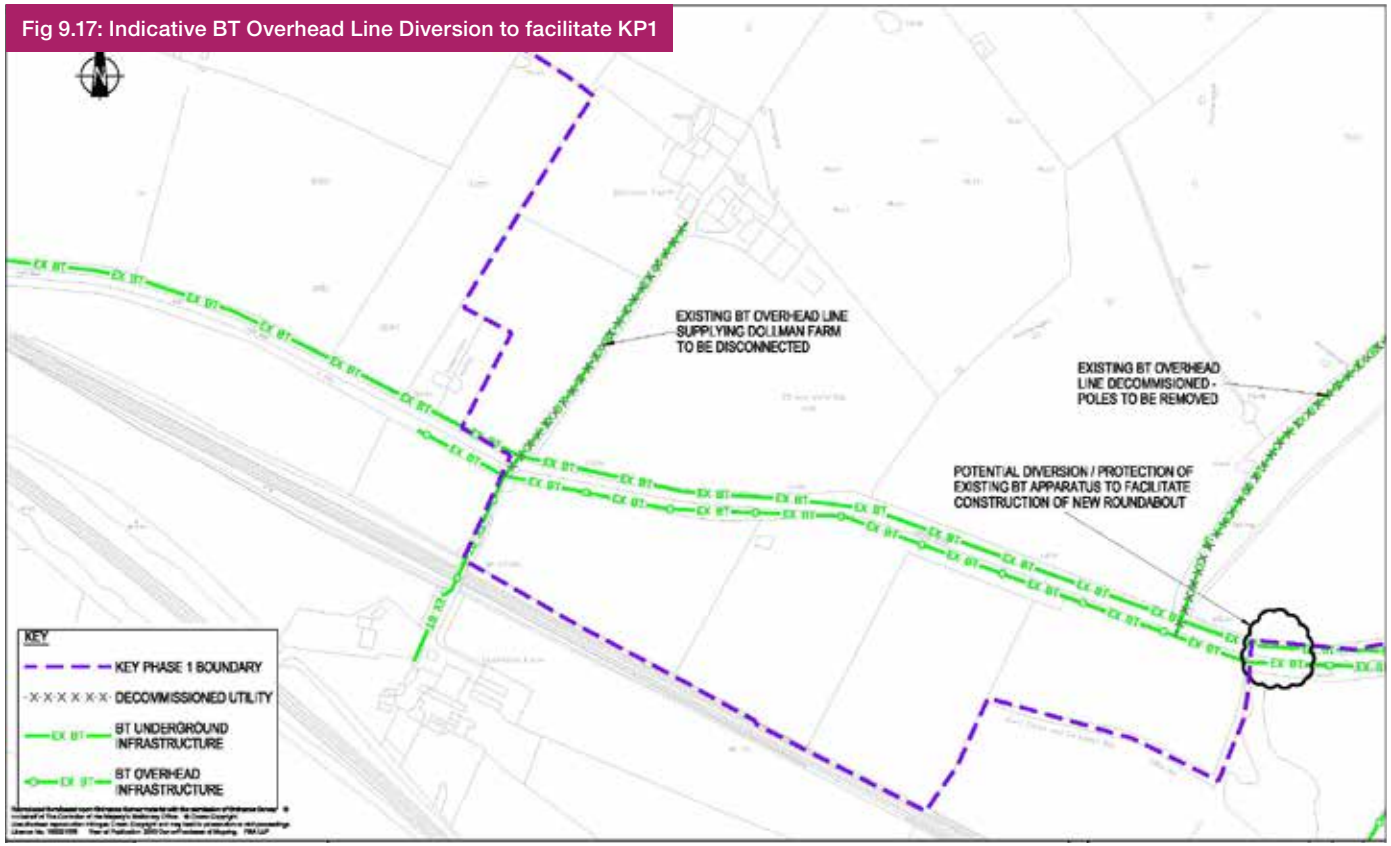


Telecommunications - BT Openreach
BT OHL Infrastructure

Existing BT overhead lines currently supply Dollman Farm (on site) and (offsite).

The existing OHL supply to Dollman Farm will be disconnected as part of the KP1 development works. However, the supplies to Eastfield Farm, Crown Point and Warley will need to be maintained and either accommodated within the development layout, or diverted below ground into a suitable position, preferably within the new road layouts. Refer to Figure 9.17.

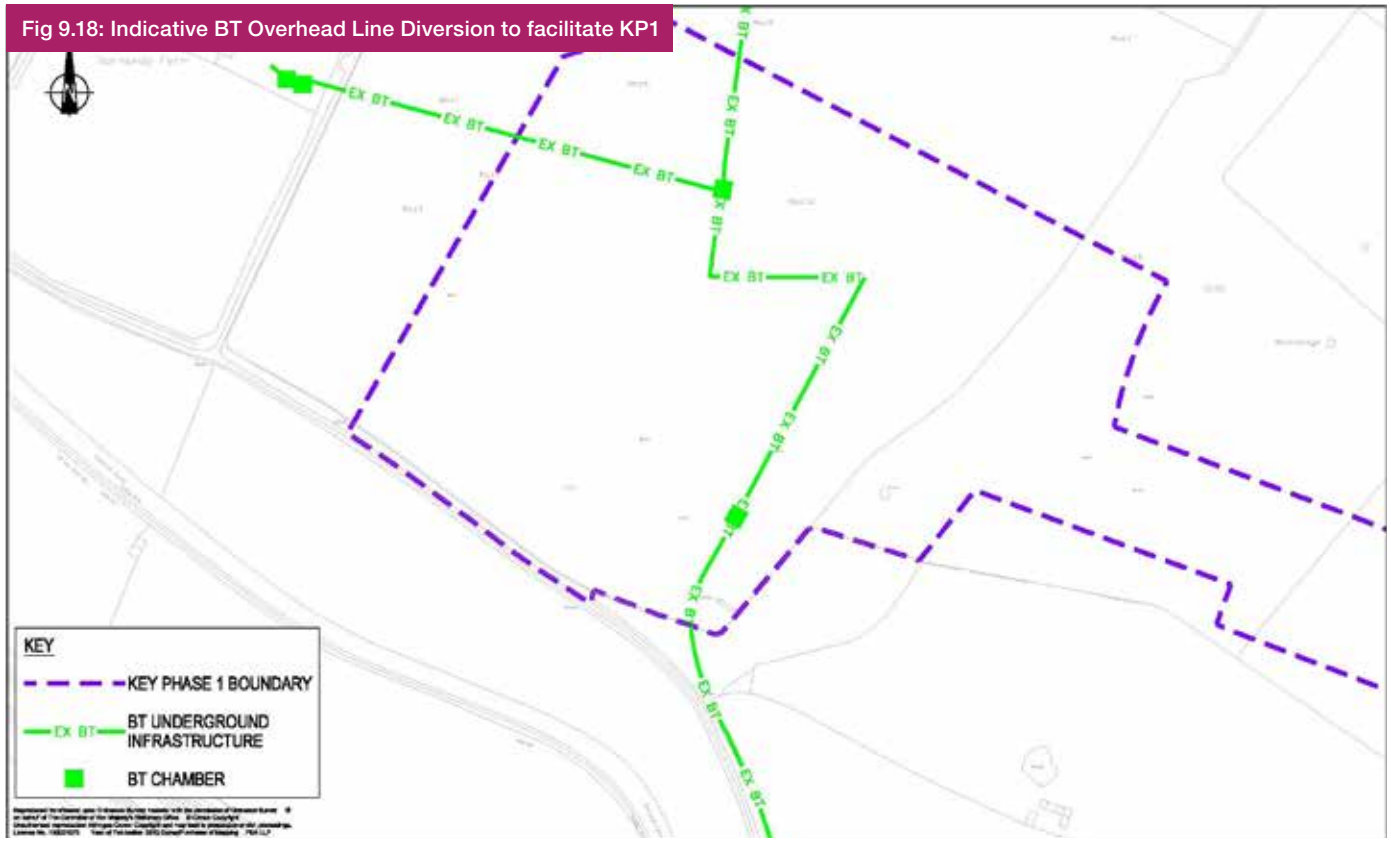
Fig 9.17: Indicative BT Overhead Line Diversion to facilitate KP1



BT underground infrastructure

Existing underground infrastructure is situated within the proposed ridge and furrow area in the west of the KP1 and is to be left in-situ. It will be necessary to provide BT Openreach with uninterrupted vehicular access to their onsite chambers, to provide them with safe access/ egress for maintenance and repair, if required. Refer to Figure 9.18.

Fig 9.18: Indicative BT Overhead Line Diversion to facilitate KP1



Proposed Access Roads

Diversions and/or protections to the existing utility apparatus will be required to facilitate the construction of the new highway and temporary construction accesses, from the A428 and in consultation with the affected utility asset owners.

Potable Water

Severn Trent Water (STW) will be providing a potable water supply to the site that will come from Rugby. The route is still yet to be determined. But it is hoped that STW may be able to provide a route that follows the existing rising main and therefore will not be at any detriment to the development parcels. Dialogue is ongoing between STW and the RRS project team.

Foul Water

The intended strategy for foul water supply is to provide pipework that will sit within the infrastructure corridors that will outfall to the existing rising main located at the southern part of the site. STW have confirmed this approach, as part of the dialogue that is on-going between STW and the RRS project team. Further work on the foul water strategy including principle routes is likely to be developed as part of the intended 'grey infrastructure' Reserved Matters application.

9.11 Ecology – Existing Conditions and Proposed Mitigation

9.11.1 Ecological Constraints

The majority of the application site comprises heavily grazed improved grassland which offers little, if any, botanical interest. This grassland is intersected by a small number of hedgerows, the majority of which are species-poor being dominated by Hawthorn. In many instances the grazing pressure and lack of management have resulted in most of the hedgerows becoming gappy to the point where they are little more than a row of individual shrubs. In addition, there are 7 ponds across the application site, some of which represent small muddy and cattle poached depressions whilst some have developed some aquatic and emergent species.

In their own right the habitats within the application site are of low ecological value, given they are intensively managed for agricultural purposes. The ponds and hedgerows and associated ditches are of value, principally for the habitat they provide for Great Crested Newts. Habitats also provide some value for bats and birds.

Ecological Mitigation Fixes:

- Retained ponds within KP1
- Integration of existing and proposed ponds within wildlife corridors (as shown on Regulatory Plan)
- Provision of amphibian tunnels and crossings where road infrastructure traverses wildlife corridors (as shown on Regulatory Plan).
- Bats: 5% of new buildings to incorporate bat roosting features such as bat bricks or small voidsat each level.

9.11.2 Great Crested Newts

The majority of the ponds (four) have supported breeding Great Crested Newts over the years. Areas of suitable terrestrial habitat for this species is limited to the hedgerows and associated ditches and grassland areas immediately surrounding the ponds which have escaped intensive grazing pressure and trampling. Remaining habitat within the application site forms intensively grazed grassland which represents sub-optimal terrestrial habitat for this species.

9.11.3 Great Crested Newt Mitigation Strategy and Habitat Delivery

Ecology Solutions have engaged in lengthy discussions with Natural England over the level of mitigation that would ensure the favourable conservation status of Great Crested Newts within the application site. The mitigation strategy involves the retention of all ponds within the application site and their integration with new dedicated Great Crested Newt habitats within wildlife corridors. These wildlife corridors have been designed to ensure uninhibited movement throughout the Green Infrastructure network.

Specific consideration has been given to the providing amphibian tunnels and crossings where road infrastructure traverses the wildlife corridors. A series of box culverts are proposed along the primary wildlife corridor running east-west in the north of the application site with crossings (dropped kerbs and inset gully pots/ drains) to be provided, as required, at locations where roads traverse the remaining wildlife corridors, this latter detail to be provided as part of forthcoming Great Crested Newt Licence Applications to Natural England.

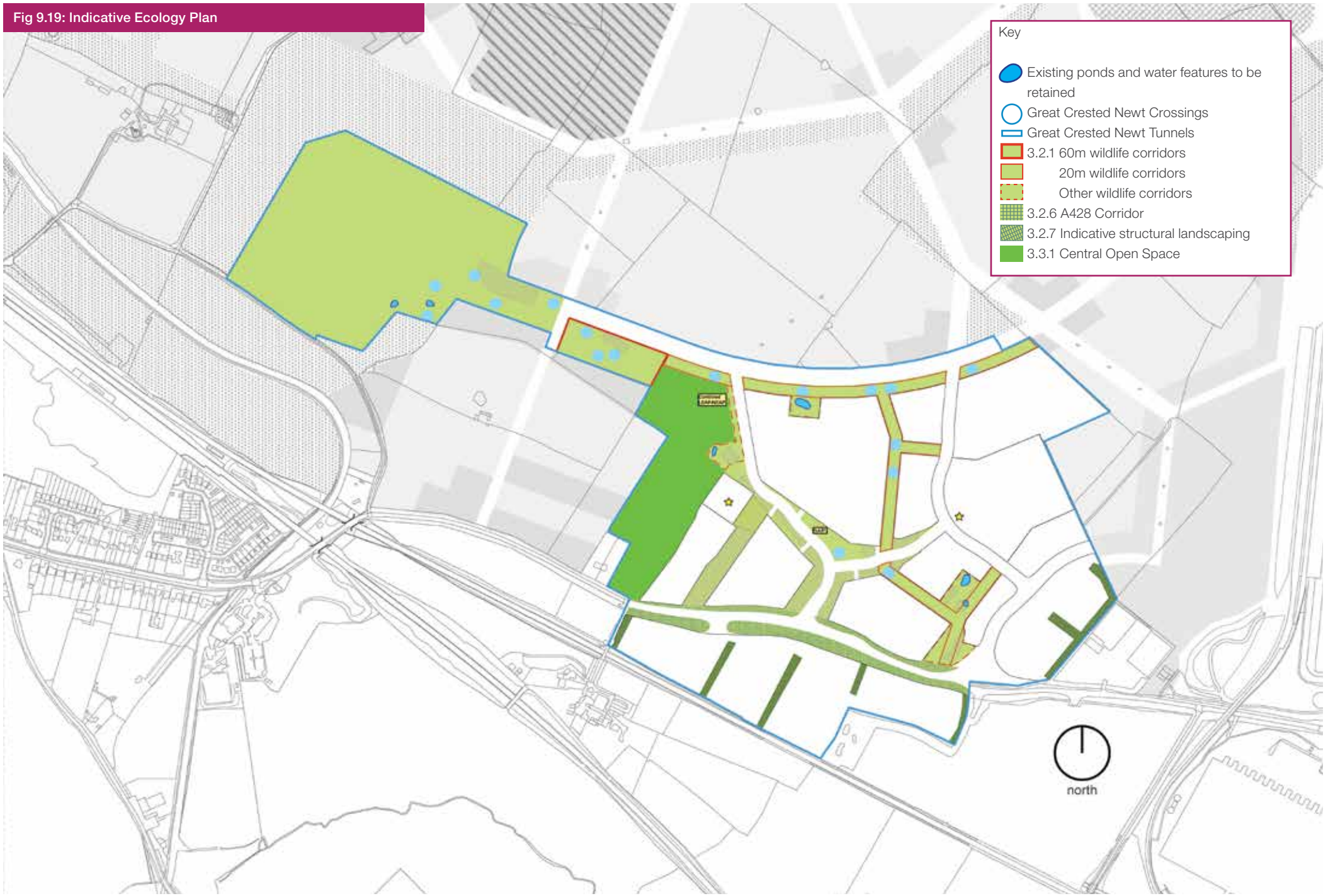
A series of new ponds (16) and associated habitats have been provided within the wildlife corridors with specific locations chosen on the basis of ensuring and maximising dispersal of the population within the Green Infrastructure. Such associated habitats will include species-rich meadow grassland to be managed specifically for Great Crested Newts, dedicated hibernaculum, new hedgerows and woodland/scrub planting. Whilst some elements of the landscape within the Green Infrastructure will also serve to provide other uses in a productive landscape setting (i.e. orchards), such habitats have also been designed with a primary function for Great Crested Newts. Fig. 9.19 presents an overview of the ecological considerations extracted from the Regulatory Plan.

As part of the delivering the new habitats, two dedicated Great Crested Newt Holding Areas will be provided, one in the west (measuring approximately 10.55 hectares) and one in the east (0.96 hectares) of the application site. A component of the new ponds, species-rich grassland, new hedgerows and woodland/scrub planting will be provided within these holding areas and once they are sufficiently mature, the Great Crested Newts will be relocated to them from the wider Green Infrastructure areas within the application site. The population will be held within these holding areas for no more than two years, after which time the populations will be allowed to disperse back into the remaining habitats within the wider Green Infrastructure on completion.

9.11.4 Forthcoming European Protected Species Licence Application

A Great Crested Newt licence application(s) setting out the mitigation strategy in detail will be submitted to Natural England on any consent in order to satisfy the tests under Regulation 53 of The Conservation of Habitats and Species Regulations 2010. Once secured this licence(s) will effectively enable implementation of the proposed development.

Fig 9.19: Indicative Ecology Plan



9.12 Foul and Surface Water Management Strategy

Foul & Surface Water Management Strategy

The strategy is detailed in the KP1 report Foul and Surface Water Drainage Strategy, within Key Phase 1 Framework and Technical requirements. A summary of some key issues are listed as follows. Figure 9.20 presents an indicative water management plan.

Surface Water Management Strategy

- The proposed surface water drainage strategy for the KP1 is to treat and restrict the flow from the site to the equivalent greenfield rate of runoff by the use of a SuDS water management train. The flow from the site will mimic the existing catchment area outfalling to the existing ditch to the north of the KP1 site.

- The SuDS water management train will comprise of a series of features located within the development parcels, primary infrastructure and the green infrastructure. Where necessary, sewers located under the primary infrastructure will convey the surface water runoff between the the SuDS features. Drainage will be designed to adoptable standards.

Source Control

Source Control is required within each development parcel. The main objective of source control is the treatment and control of run off as close to the source as possible. The inclusion of source control is an important part of the SuDS management train. Suggested techniques for use within the development parcels include:

- Pervious pavements provide a pavement suitable for pedestrian and/or vehicular traffic that allow rainwater to infiltrate through the surface and into the underlying layers, where water is temporarily stored before infiltration to the ground, reuse or release to a drainage system. If ground conditions are unsuitable for infiltration a lined system would be required, with eventual connection onto the SuDS drainage system.

- Bioretention areas, also referred to as bioretention filters or rain gardens, are surface runoff controls that capture and treat stormwater runoff from frequent rainfall events.

- Green roofs are designed to intercept and retain rainfall, reducing the volume of run off and attenuating flows.

- Rainwater reuse or harvesting involves collecting runoff from roofs and hardstandings and storing it to be used again for non-potable purposes, including toilet flushing, cleaning and irrigation.

- Swales (broad vegetated channels) will be located alongside the proposed primary infrastructure to store and convey and treat highway runoff.

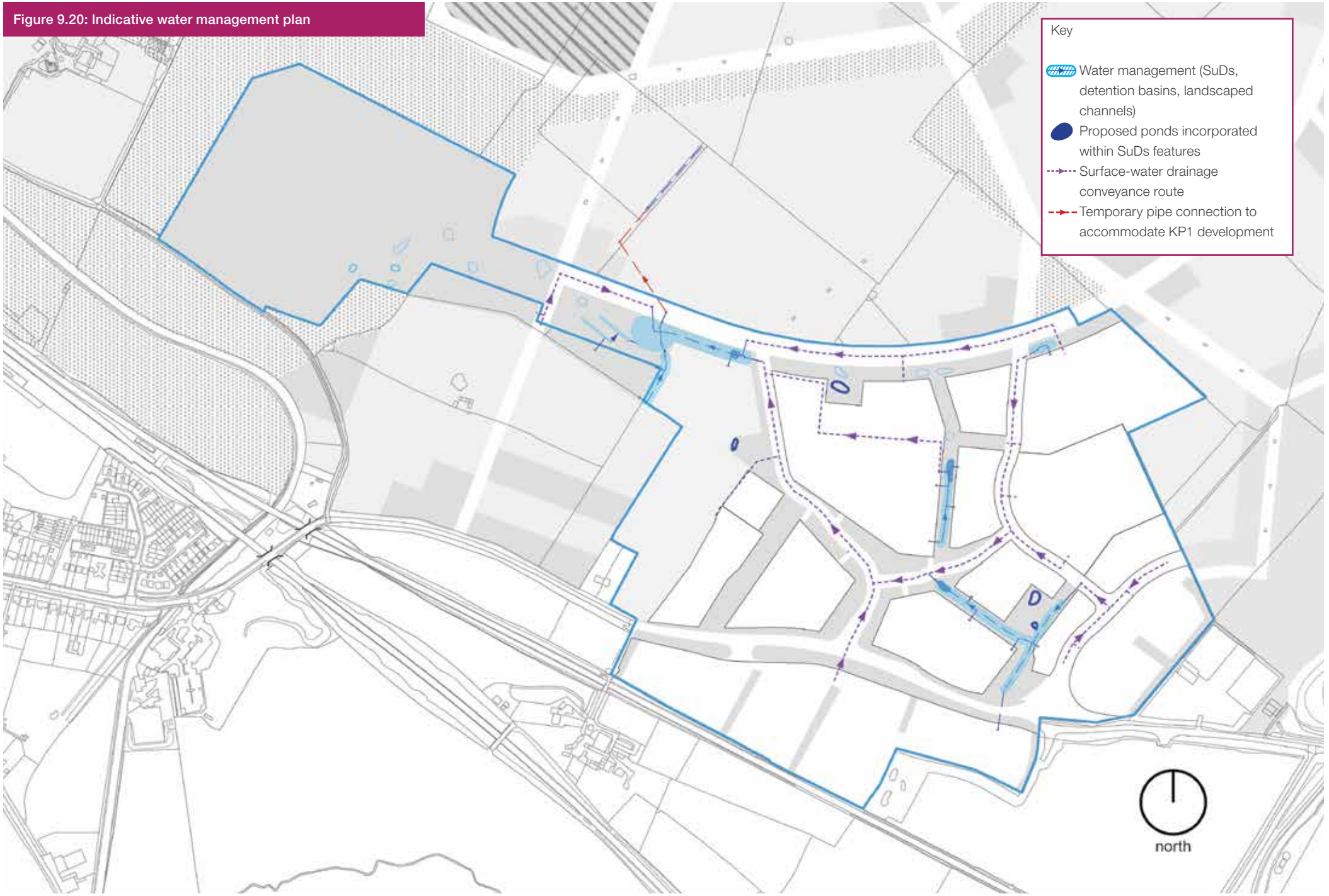
Source control is to be provided within each parcel of development. The KP1 Surface Water Drainage Strategy is based upon the following assumed contributing impermeable areas:

- Residential: 50%

- Employment: 75%

- Primary and secondary road corridors: 85%

Figure 9.20: Indicative water management plan



Green roof

Bioretention areas

Low flow channel

Swale

Rain garden

Site Control

The size and nature of this site lends it to the incorporation of site control features. The site control features will sit within the green infrastructure corridors and will integrate with the proposed landscaping and ecology. The features will include landscaped channels and detention basins that will provide a second and in some instances a third level of treatment to the runoff. The channels and basins will also provide attenuation for surface water run off. The channels and basins are designed to act as multifunctional space, generally dry features, which are allowed to fill during significant storm events and then empty over time. Low flow channels will provide a route through the features for frequent rainfall events.

The landscaped channels will be approximately 1.0 – 1.5m deep trapezoidal linear features with 1 in 3 landscaped side slopes to convey surface water and provide storage in extreme storm events. The channels will include small ponds of permanent water up to 1m deep to support breeding great crested newts. The detention basins will be deeper features with maximum 1 in 3 landscaped side slopes up to 2.5m deep and will also include some great crested newt ponds in accordance with the ecologist requirements.

Foul Water Management Strategy

The foul drainage strategy will be developed where possible with Severn Trent Water in line with their preferred growth scheme incorporating the entire Rugby Radio Station Development. The main foul carrier sewers will drain by gravity and will sit within the primary infrastructure. The sewers will be designed to adoptable standards. The gravity sewers will outfall to a pumping station located to the east of the employment site. The pumping station will connect onto the rising main located within A428 Crick Road. The point of connection will be determined with Severn Trent Water.

The on-site pumping station should be designed to adoptable standards. It would need to satisfy the criteria set out in Sewers for Adoption (7th Edition) and the requirements of Severn Trent Water.

9.13 Hedgerows

The landscape design of KP1 includes consideration of hedgerows. Where possible existing hedgerows are proposed to be retained / replenished. Some existing existing hedgerows are proposed to be removed as retention in some locations is not compatible with the master plan design of streets, spaces and development parcels. To counteract the loss of hedgerows considerable new hedgerow planting is proposed.

Figure 9.21 opposite sets out the existing and proposed hedgerows in the context of KP1. The approach proposes:

Hedgerow Fixes:

- The strategy targets a gain of 10% above the total existing length of hedgerow on site.
- providing new hedgerows to frame the wildlife corridors
- creating a substantial landscape buffer south of Crick road with a double hedgerow
- retaining existing hedgerows where possible

Indicative figures are listed on the plan opposite to record an indication of the length of existing, retained / replenished and proposed hedgerow. In the proposed strategy the provision is slightly more than 110%, however consideration needs to be given to providing gaps to allow access to wildlife corridors and development parcels.

Existing hedgerows on-site

Existing hedgerows on-site

Precedent of existing & new hedgerows

Predecent of hedgerow integration

Fig 9.21: Indicative plan of existing and proposed hedgerows

Existing Hedgerows

Approximately 3,418m existing hedgerow within KP1 boundary (110% = 3,760m)

Proposed Hedgerows

Approximately 1,728m retained / replenished existing hedgerow

Approximately 3,432m proposed new hedgerow

Total 5,160m hedgerow

The proposed strategy provides more than 110% of existing hedgerows within KP1

9.14 Noise Mitigation

9.14.1 Introduction

The Rugby Radio Station site is proposed to be redeveloped to include residential elements. Chapter J: Noise and Vibration of the Rugby SUE ES Addendum (2013) identified a small parcel of residential land adjacent to the A428 and the railway lines falls within Noise Exposure Category D (i.e. noise levels above 72 dB LAeq,16hr (daytime) and 66 dB LAeq,8hr (night-time)) as per PPG24 (which has now been superseded).

This Technical Note has been prepared to provide preliminary noise mitigation design guidance for proposed residential properties on the site within the KP1 design guide boundary potentially affected by noise from the A428, DIRFT II & III and/or the railway.

Recommendations for internal and external noise criteria for proposed residential dwellings have been provided.

Example configurations for glazing and ventilation have been provided in order mitigate against external ambient noise and to inform the detailed design stages. Final building facade configurations should be determined during detailed design stages.

9.14.2 Noise Criteria

BS8233:1999 provides recommendations for internal ambient noise levels for various types of space depending on their usage. Noise Mitigation Table 1 presents 'good' internal noise level standards for residential dwellings as defined by BS8233:1999.

While there is no national requirement for external noise levels to be achieved in garden spaces, BS8233:1999 also advises that: "In gardens and balconies etc. it is desirable that the steady noise level does not exceed 50 LAeq,T dB and 55 LAeq,T dB should be regarded as the upper limit."

Noise Mitigation Table 1: Internal Ambient Noise Targets

Criterion	Room Type	Internal Ambient Noise
Reasonable resting/ sleeping conditions	Living rooms	30 dB LAeq,T (daytime and night-time periods)
	Bedrooms	30 dB LAeq,T (daytime and night-time periods) 45 dB LAFmax (night-time periods)

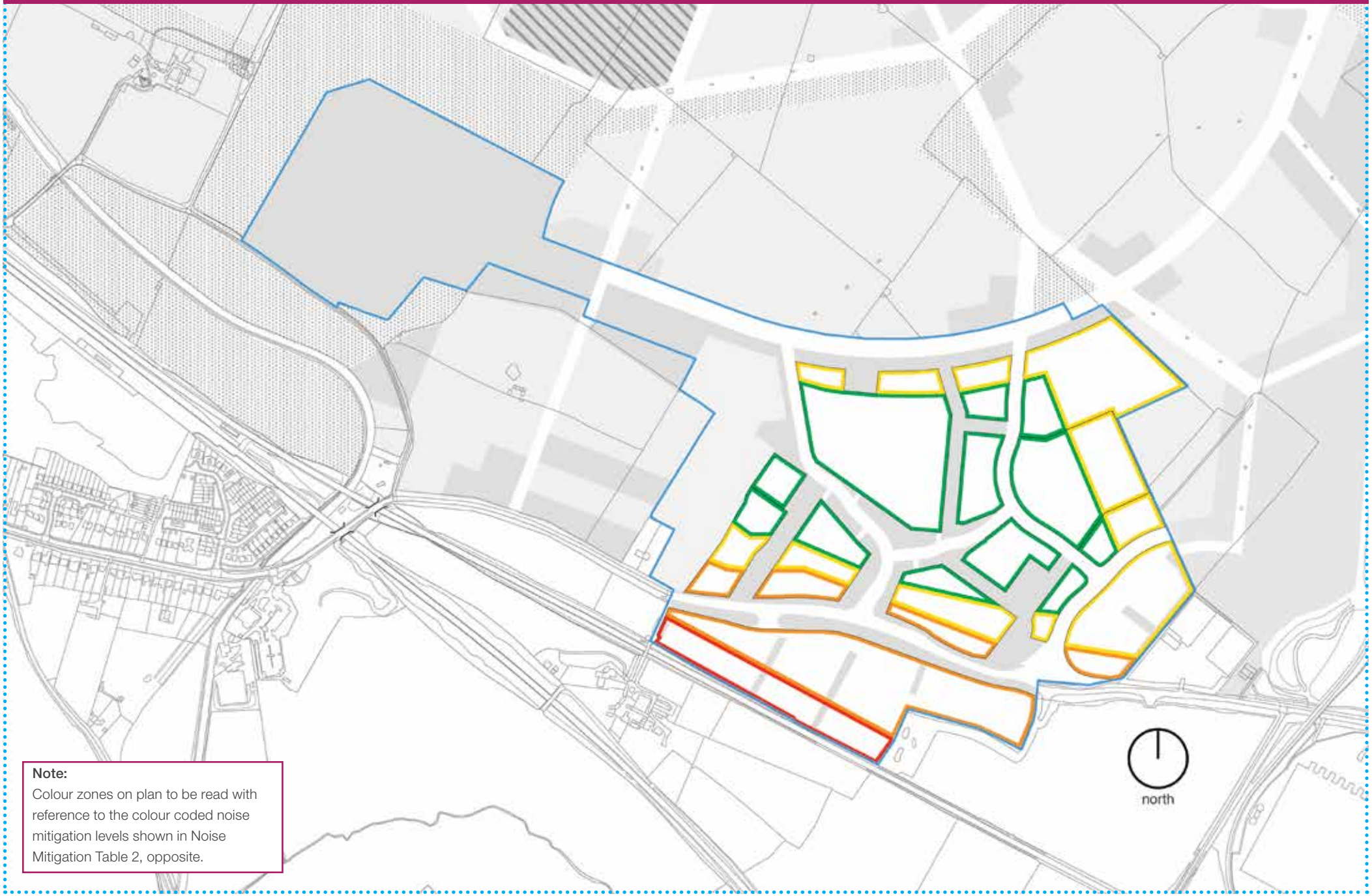
9.14.3 Mitigation Options

Figure 9.22 presents a marked up site plan showing zoned areas where certain levels of facade glazing/ ventilation configurations should be considered as a design basis. Example configurations are detailed in Noise Mitigation Table 2, below.

Noise Mitigation Table 2: Areas of Glazing/Ventilation Configuration Options

Key	Mitigation Level	External Noise Levels Daytime (07:00 – 23:00)	External Noise Levels Night-time (23:00 – 07:00)	Example Mitigation Configuration
	Level 1 Mitigation	72 – 75 dB LAeq,T	66+ dB LAeq,T	Facades facing rail lines may be feasible however will require high performance acoustic double glazing (e.g. 16.8 mm glass/6-20 mm argon filled cavity/16.8 mm glass, Rw 48 dB) and alternative ventilation provision. Facades facing away from rail lines may comprise enhanced double glazing (e.g. 10 mm glass/12 mm air gap/6 mm glass, Rw 37 dB) and alternative ventilation provision.
	Level 2 Mitigation	63 – 72 dB LAeq,T	57 – 66 dB LAeq,T	Enhanced double glazing (e.g. 10 mm glass/12 mm air gap/6 mm glass, Rw 37 dB) and alternative ventilation provision. Windows would be required to be closed to achieve internal noise criteria; as such alternative forms of ventilation will be required.
	Level 3 Mitigation	55 – 63 dB LAeq,T	45 – 57 dB LAeq,T	Standard thermal double glazing units (e.g. 6 mm glass/6-16 mm air gap/4 mm glass, Rw 31 dB) and alternative ventilation provision. Windows would be required to be closed to achieve internal noise criteria; as such alternative forms of ventilation will be required.
	Level 4 Mitigation	Up to 55 dB LAeq,T	Up to 45 dB LAeq,T	Standard thermal double glazing units (e.g. 6 mm glass/6-16 mm air gap/4 mm glass, Rw 31 dB) and ventilation provided by partially open windows.

Fig 9.22: Indicative Noise Mitigation Plan: Areas of Glazing / Ventilation Configuration Options



Note:
Colour zones on plan to be read with reference to the colour coded noise mitigation levels shown in Noise Mitigation Table 2, opposite.

9.14.4 Gardens

External garden areas within Level 4 are likely to be below 55 dB LAeq,T. For areas within Levels 2 and 3 this may require use of additional screening to reduce noise ingress. Screening may be provided by use of continuous brick walls or well built impervious close boarded fencing around garden areas. These would require to be approximately 1.8 m to 2 m high to have any discernible acoustic effect. For areas with Level 1 it is considered that use of screening is unlikely to reduce external noise levels in gardens to below 55 dB LAeq,T.

9.14.5 General Comments

Windows and ventilation systems should be acoustically sealed and fitted with workmanship of a good quality. Poorly fitting windows and build quality can decrease sound insulation performance significantly.

It should be noted that the glazing specifications provided above are for acoustic purposes only and, therefore, any structural, safety, thermal or other issues will require to be addressed separately by the appropriate specialists.

9.14.6 Alternative Ventilation Systems

Alternative ventilation could be provided by acoustic trickle ventilation (such as the type of acoustic ventilator specified in the Noise Insulation Regulations). However, the attenuation performance of any alternative ventilation system must be specified to achieve a value of no less than that provided by the glazed element of the façade.

9.14.7 Conclusion

This Technical Note has been prepared to provide preliminary noise mitigation design guidance for proposed residential properties on the site within the KP1 design guide boundary potentially affected by noise from the A428, DIRFT II & III and the railway.

Recommendations for internal and external noise criteria for proposed residential dwellings have been provided.

Example configurations for glazing and ventilation have been provided in order mitigate against external ambient noise and to inform the detailed design stages. Final building facade configurations should be determined during detailed design stages.

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Appendix 1
KP1 Compliance Checklist

Rugby Radio Station - Key Phase One Design Guide Compliance Checklist

Design Guide Compliance Checklist to be completed and submitted with all Reserved Matters Planning Applications.

Tick boxes as appropriate: Yes ☑ No ☐ N/A ☐

REGULATORY PLAN

	Are proposals compliant? Yes	No	N/A
 Proposals have referred to the Regulatory Plan	☐	☐	☐
Submitted material includes a layout plan that is in accordance with the Regulatory Plan (proposal overlaid on Regulatory Plan)	☐	☐	☐

Reserved Matters Application details:

Proposal title	
Parcel reference	
Developer	
Design team	

Notes:

Wherever **'No'** is answered to any compliance question, an explanatory statement justifying non-compliance is required.

Explanatory statements will be submitted in support of the completed Compliance Checklist.

PART A: BACKGROUND

1. Introduction

		Are proposals compliant? Yes	No	N/A
1.3	Compliance with Design Guide: Does the proposal fully comply with the Guide?	☐	☐	☐
	If the above is answered '**No**', has a statement of justification been provided?			
	Have 'Code Breaker' elements been included in the proposals?	☐	☐	☐
	If the above is answered '**Yes**', has a statement of justification been provided?			

2. Context

	Yes	No	N/A
Applicant has read and fully understood the contents of this chapter.	☐	☐	☐

PART B: SPATIAL

3. Green Infrastructure Design Fixes

Are proposals compliant?	Yes	No	N/A
Location of green infrastructure components as illustrated in the Regulatory Plan	☐	☐	☐
3.2 Informal open space:			
3.2.1 Wildlife Corridors	☐	☐	☐
3.2.2 Civic Spaces	☐	☐	☐
3.2.3 Allotments & orchards	☐	☐	☐
3.2.4 Informal Play including Residential Pocket Parks	☐	☐	☐
3.2.5 Normandy Hill and Retained Ridge & Furrow	☐	☐	☐
3.2.6 A428 Corridor	☐	☐	☐
3.2.7 Structural Landscaping	☐	☐	☐
3.2.8 SuDS	☐	☐	☐
3.2.9: Water design and management of risk	☐	☐	☐
3.2.10: Private and Semi-private space	☐	☐	☐
3.3 Formal open space:			
3.3.1 A formal central open space	☐	☐	☐
3.3.2 Play Areas	☐	☐	☐

PART B: SPATIAL

4. Access & Movement Design Fixes

Are proposals compliant?

	Yes	No	N/A
4.2 Site access points	☐	☐	☐
4.4 Cycle, pedestrian and bus network	☐	☐	☐
4.5 Street hierarchy	☐	☐	☐
4.5 Design of streets: to accord with the street type tables and street type sections.	☐	☐	☐
4.7 Vehiculer and cycle parking	☐	☐	☐

5. Residential Built Form Design Fixes

Are proposals compliant?

	Yes	No	N/A
Location of residential development parcels	☐	☐	☐
5.2 Residential Character Areas: fixed definition of character areas that inform the choice of material palettes	☐	☐	☐
5.3 Plot Layout Rules	☐	☐	☐
5.4 Frontage Character	☐	☐	☐
5.5 Residential plot components, including:			
5.5.1 Dwelling Typologies	☐	☐	☐
5.5.2 Parking Typologies	☐	☐	☐
5.5.3 Boundary Typologies	☐	☐	☐
5.6 Residential Typologies Matrices:	☐	☐	☐
5.7 Residential Density	☐	☐	☐
5.8 Key Grouping - The Gateway	☐	☐	☐

6. Mixed Use Built Form Design Fixes

Are proposals compliant?

	Yes	No	N/A
Location of mixed use development parcels	☐	☐	☐
6.3 Dollman Farm	☐	☐	☐
6.4 The Primary School	☐	☐	☐
6.6 Architectural Principles for Mixed Use Built Form	☐	☐	☐

7. Commercial Built Form Design Fixes

Are proposals compliant?

	Yes	No	N/A
Location of commercial development parcels	☐	☐	☐
7.3 Addressing the Street Commercial Area	☐	☐	☐
7.4 Set in the Landscape Commercial Area	☐	☐	☐

PART C: DETAILING THE PLACE

8. Detailing the Place Design Fixes

Are proposals compliant?

	Yes	No	N/A
8.2 Architectural Principles	☐	☐	☐
8.3 Building Features for Residential Built Form	☐	☐	☐
8.4 Residential Materials	☐	☐	☐
8.5 Mixed Use Materials	☐	☐	☐
8.6 Commercial Materials	☐	☐	☐
8.7 Public Realm Materials, comprising:	☐	☐	☐
8.7.1 Streetscape Materials Palette	☐	☐	☐
8.7.2 Street Furniture	☐	☐	☐
8.7.3 Lighting	☐	☐	☐
8.7.5 Planting Palette / Strategy	☐	☐	☐
8.7.6 Public Art	☐	☐	☐

PART D: TECHNICAL

9. Technical Details Design Fixes

Are proposals compliant?

	Yes	No	N/A
9.1 Private Amenity Space	☐	☐	☐
9.2 Building Heights	☐	☐	☐
9.3 Car & Cycle Parking Standards	☐	☐	☐
9.4 Public Transport	☐	☐	☐
9.5 Cycling & Walking	☐	☐	☐
9.6 Refuse & Recycling Strategy	☐	☐	☐
9.7 Play Provision	☐	☐	☐
9.8 Heritage	☐	☐	☐
9.10 Utilities Proposals	☐	☐	☐
9.11 Ecology	☐	☐	☐
9.12 Foul & Surface Water Management Strategy	☐	☐	☐
9.13 Hedgerows	☐	☐	☐
9.14 Noise Mitigation	☐	☐	☐

Appendix 2
KP1 Sustainability Statement

Appendix 2 KP1 Sustainability Statement

This sustainability statement sets out sustainability targets for the phase of development in terms of **Energy, Waste and Water.**

Development proposals will be encouraged and expected to incorporate energy and water efficient design considerations into the design for buildings. The specific proposals will be assessed on a plot by plot basis.

Energy Guidelines

The key principles of the approach to energy efficiency and generation for Key Phase 1 (KP1) follow the principles of design to reduce energy demand set out in the Energy Statement (Peter Brett Associates, August 2013) submitted with the outline application and seek to maximize renewable energy sources included in the suite of effective solutions set out in the Energy Statement . These principles are:

1. Optimise energy-efficiency of urban structure to maximise daylight and passive heat from the sun through

- Orientation to the sun.
- Optimisation of distances between buildings.

2. Minimise energy demand of buildings. The building envelope for the homes within KP1 will be constructed to be highly efficient so that the amount of energy which is typically required in homes is minimised.

Minimise heat losses through a very good building envelope (walls, roofs, windows) and a high compactness of the buildings (good ratio of surfaces to volume). Maximise passive solar gains with windows facing south.

3. Maximise efficiency of energy supply and share of renewable energy sources.

In accordance with Condition 16 of the Outline Application, all development shall aim to achieve an improvement of 10% above the Target Emission Rate (TER) set out in Part L of the Building Regulations. However, this needs to be considered at the Reserved Matters stage in light of the recent Housing Standards Review.

To achieve this, KP1 of the Rugby Sustainable Urban Extension will meet high levels of fabric energy efficiency as set out in the Energy Statement submitted with the outline application. Each residential dwelling will aim to meet the following fabric specification:

- Opening areas (windows and doors) will have the same as actual dwellings up to a maximum proportion of 25% of total floor area.
- External walls (including opaque elements of curtain walls) will have a U value of 0.18 W/m2K, and party walls will have a U value of 0.0 W/m2K
- Roofs and floors will have U values of 0.13 W/m2K
- Windows, roof windows, glazed rooflights and glazed doors will have U values of 1.4 W/m2K (whole window U-value) and g-values of 0.63
- Opaque doors will have a U value of 1.0 W/m2K and semi-glazed doors will have a U value of 1.2 W/m2K
- Dwellings will have an air tightness of 5.0m3/hr/m2
- For linear thermal transmittance, standardised PSI values (See SAP Appendix R) will be used, except use of y=0.05 W/m2K if the default value of y=0.15 W/ m2K is used in the actual dwelling
- Dwellings will use natural ventilation (with extractor fans)
- No air conditioning will be used
- Heating systems will consists of mains gas (with a combi boiler if a combi boiler is in the actual dwelling, otherwise a regular boiler) with radiators. The boiler will be room sealed, with a fan flue and a SEDBUK (2009) efficiency of 89.5%.

- Controls will include time and temperature zone control and weather compensation, as well as a modulating boiler with interlock.

- With regards to the hot water storage system, this will be heated by boiler (regular or combi). If the cylinder is specified in the actual dwelling, the volume of the cylinder will be used. If a combi boiler is used, no cylinder will be used. Otherwise the volume of the cylinder will be 150 litres. It will be located in heated space, thermostat controlled and will have a separate time control for space and water heating.

- Primary pipework will be fully insulated.

- The hot water cylinder loss factor will be equal or better than 0.85 x (0.2 +0.051 V2/3) kWh/day

- No secondary space heating will be used

- 100% low energy lighting will be used

- Thermal mass parameter will be medium (TMP=250)

These fabric standards set an extremely high level of efficiency for each dwelling and are equivalent to the target emission rate in the 2013 Building Regulations. If the regulated carbon emissions associated with the Building Regulations cannot be met through fabric energy efficiency measures alone it is likely that additional carbon emission reductions will be achieved on individual plots utilising solar photovoltaic (PV) technology. Additional renewable technologies, such as ground source heat pumps, air source heat pumps, micro-wind, solar thermal water heating and micro-gas CHP, may be supplemented by the developer or purchaser of properties as long as the target carbon emission rates are achieved with this change in building specification.

Energy specification for the non-residential element will meet the specific target emission rate set by the Building Regulations at the time of application. This will need to take into consideration whether the building is publically funded which may stipulate a high carbon emission target in line with previous definitions of zero carbon buildings. The carbon targets attributed to these buildings will be agreed base on plot design specifications.

In addition, the detailed application will seek to minimize the visual impact of renewable technology if this is considered an issue. Measures may include restricting roof mounted technology away from primary streets and locating noise generating technology such as air source heat pumps away from sensitive receptors, although this may affect the delivery of energy targets.

An element of flexibility will be needed by house builders in achieving these targets in order to meet housing standards. This is important in light of the recent Housing Standards review and approaches to delivering zero carbon homes.

Waste Guidelines

The waste guidelines for Key Phase follow the guidelines set out in Rugby Borough Council's Refuse And Recycling Policy & Design Guide For Developers.
For each dwelling, 3No wheeled bins will be provided within each property's private garden space. Minimum external storage capacity large enough to accommodate standard 240 lt bins will be provided. Bin stores will be accessible and convenient for the occupier and for collectors. Bin stores will be hard floored, and if covered, will be of sufficient height to open bin lids. All bins will be able to be removed individually from the store for presentation at the back of the footway for collection. Storage locations will be at the kerb side, adjacent to the public highway and containers will not have to be moved through a building to the point of collection. The distance between the collection vehicle and the bin should not exceed 10m. If the distance is greater than 10m, reasonable justification will be provided to the planning officer. Refuse collectors will not service wheeled bins from private paths or lanes.

If a more centralised above ground storage area for bins is required (associated with communal facilities), these areas are likely to require that:

- Communal stores will allow direct access for the refuse collection vehicle, and will be in a central and convenient location for users and collectors where possible. If this is not possible then the store should be located at the main entrance of the development or by providing more than one bin store within the site;

- The distance for each resident to carry their refuse will be kept consistent across the development;

- Consideration will be made for "Keep Clear marking in front of bin stores and at designated vehicle access/loading points to prevent cars parking and inaccessibility for collections;

- The bin store must be large enough for residents to gain access to all bins and each bin must be able to be removed individually from the store;

- Covered bin stores must allow sufficient clearance to allow full opening of the lid (with a 2m minimum working height where compound is covered) and 150mm clearance space between containers to allow ease of movement; and

Collectors will not have to move wheeled bins down gradients exceeding 1:14. In addition, collectors should not have to move wheeled bins up or down steps. For both single dwellings and communal facilities, overhead service cables/pipes will be at least 6m from ground level to allow operation of the lifting gear on the collection vehicle.

With regards to highway layout, highways will have a minimum width of 4m and will be designed to accommodate a maximum reversing distance of 12 metres. A minimum working area of 4m width and 4m in length should be available where containers are emptied, and a minimum of 4.5m vertical clearance will be provided. 2m minimum width of access threshold to the compound to allow for the removal and return of containers whilst servicing will be required.

Household waste collection will adhere to current Rugby Borough Council requirements.

With regards to commercial waste collection and infrastructure, until such point as the occupants are known of each commercial unit, the development of a generic waste collection infrastructure or strategy is not considered appropriate. Rugby Borough Council or a licensed waste contractor will define necessary infrastructure as part of waste collection contracts.

Water Guidelines

Water Management (minimising potable water use)

Internal water use

For new dwellings, the minimum requirement for water efficiency under the current Building Regulations is that the predicted potable water consumption should not exceed 125 litres per person per day. The site would aim for a better standard than this with a target of no more than 105 litres per person per day.

This would be achieved through specifying and installing highly water efficient fixtures and fittings, such as dual flush toilets, low flow taps and shower heads, and, where supplied, highly water efficient white goods. The new homes would also be provided with a Home User Guide that would include information and advice to residents on how to save water.

For new non-residential buildings, water efficiency would be promoted through the use of the following measures:

- water efficient sanitary fixtures and fittings, covering the potential use of:
    - waterless urinals;
    - dual flush WCs;
    - low flow/ aerated taps;
- installation of water meters, and leak detection systems to facilitate the improved monitoring and management of water use.

We would also explore the feasibility of using rainwater harvesting, particularly for the primary school, to displace the use of mains water for WC flushing.

External water use

For new dwellings, the use of potable water use for irrigation would be reduced by installing rainwater butts to serve private or communal garden areas. For both residential and non-residential buildings, the landscape design would also take account of water efficiency by looking, as far as possible, to specify the use of drought resistant planting that would require minimal irrigation, and could rely solely on natural precipitation during all seasons of the year. This would also improve the resistance of the landscaping to future climate change, where more extreme heat waves could become more frequent.

Water Standards

Residential and commercial development water conservation will be in accordance with the current core strategy policy (CS16) and will meet water conservation policy standards applicable at the time Reserved Matters applications are submitted.

Appendix 3

KP1 Illustrative Master Plan

Appendix 3 KP1 Illustrative Master Plan

The Illustrative Master Plan presents a vision of the proposed development of Key Phase 1: it creates a more detailed plan that illustrates one way in which the Regulatory Plan can be used to inform a master plan scheme.

The Illustrative Master Plan also acts a proving plan that has tested the design guidance established in the Design Guide and Regulatory Plan by using it to draw up a full scheme layout.

The KP1 Illustrative Master Plan is presented in Fig. A3.1.

Fig. A3.1: KP1 Illustrative Master Plan

Appendix 4
KP1 Indicative Sequencing

Appendix 4 KP1 Indicative Sequencing

Indicative sequencing is illustrated in Figure A4.1.
The broad approach to sequencing is as follows, with further details listed below:

1. Green Infrastructure is the first element of KP1 to be progressed in line with the need to address ecological considerations including Great Creasted Newts.
2. Grey Infrastructure is the second element with the creation of streets to provide access into and through KP1.
3. Residential development parcels can then be progressed, with access from the grey infrastructure.
4. Mixed uses and local facilities (including a primary school) will be brought forward to support residential development.
5. Commercial development parcels will be determined by market demand.

KP1 Green Infrastructure:

- The green infrastructure will be the first component of KP1 to be implemented for ecological mitigation purposes. The early submission of Reserved Matters applications for the green infrastructure will ensure early establishment of habitats for Great Crested Newts (GCN).
- The green infrastructure strategy will re-locate the GCNs temporarily into dedicated holding areas while the wider green infrastructure network is constructed.
- The green infrastructure permeates KP1 and will include wildlife corridors and public footpaths that will create a network of leisure routes through green spaces from the new A428 access point in the south east of KP1 through to Normandy Hill in the north west corner of KP1.

KP1 Formal Open Space:

- An area of formal open space including a combined LEAP / NEAP will be delivered by the occupation of 500 dwellings.

KP1 Grey Infrastructure:

- Providing an access and primary movement network is the next essential component of KP1, together with the other early strategic supporting infrastructure.
- Early grey infrastructure Reserved Matters applications will seek approval for accessing KP1 from the proposed new eastern roundabout on the A428 Crick Road. A network of primary routes will be constructed providing access through KP1 opening up development plots and providing access to the proposed primary school.
- Alongside the network of primary routes other key infrastructure components will be established including strategic foul and surface water drainage and utilities connections.

KP1 Residential Development:

- The primary infrastructure network will provide access to development parcels enabling the submission of residential Reserved Matters applications.
- Reserved Matters applications for residential development will be brought forward by the developers of individual parcels.
- The first phase of residential development will create a gateway around a point of access from the A428 providing a strong entrance to the site.

KP1 Mixed Uses

- Mixed uses and local / community facilities will be brought forward to support the residential development in KP1.

KP1 Primary School:

- The first phase of the Primary School is to be delivered prior to the occupation of the 200th dwelling taking access off the primary street network.

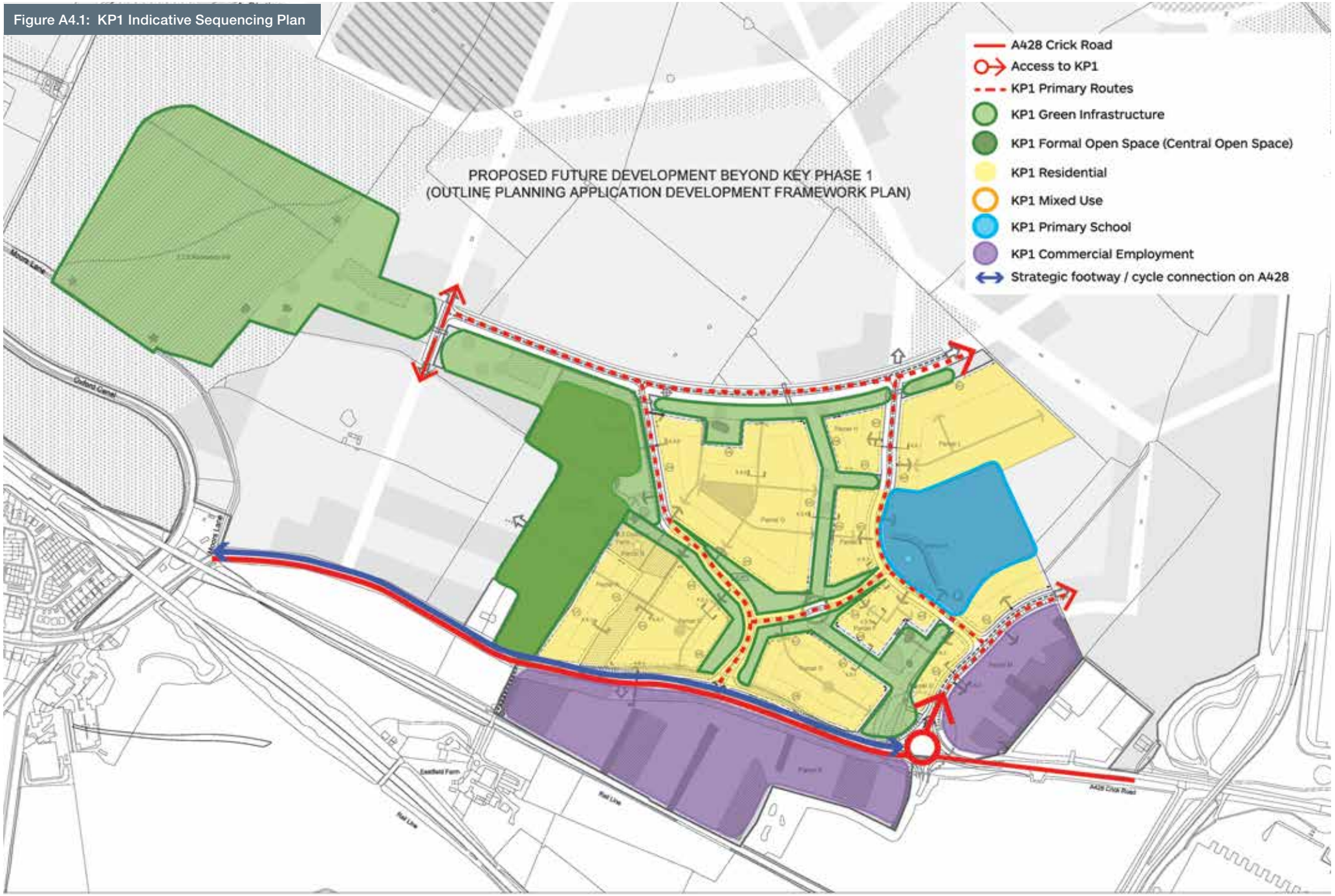
KP1 Commercial development parcels:

- Reserved Matters applications for commercial development will be brought forward by the developers of individual parcels and will be driven by market demand.
- An access to the commercial parcels south of the A428 will be delivered prior to any development in this location.

Strategic Pedestrian / Cycle connections

- It is intended that a pedestrian and cycle connection between Moors Lane and the proposed eastern roundabout on the A428 will be constructed and open to public use prior to the occupation of 200 units on the site, providing a link between KP1 development and Hillmorton,
- Other pedestrian connections will be brought forward within the green infrastructure and as part of development parcels.

Figure A4.1: KP1 Indicative Sequencing Plan



Appendix 5
List of Figures

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