Purfleet Centre Regeneration

DESIGN & ACCESS STATEMENT

Zone 1A Reserved Matters Application

February 2018

Purfleet Centre
Regeneration Limited

Document Purpose

This document has been prepared in support of a reserved matters planning application for Zone 1A of the regeneration of Purfleet, Thurrock on behalf of Purfleet Centre Regeneration ltd (PCRL).

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On behalf of:

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Introduction

Zone 1A is the first development phase within the PCRL masterplan and is an opportunity to demonstrate what regeneration can bring to Purfleet. The ambition for Zone 1A is to provide a gateway to the future development and to create a new community integrating with the existing. The proposals provide high-quality family homes with access to fantastic green spaces and the future town centre. The proposals are mindful of the green links within the Purfleet Conservation Area and will enhance the character of this green network by reinstating public access and community links. Zone 1A will also provide new dedicated play areas and community amenity that can serve both existing and new Purfleet residents.

PCRL has worked closely with the Purfleet Community to develop the masterplan for regeneration of Purfleet. As the first phase of this development, Zone 1A will begin to initiate change for Purfleet, demonstrate PCRL's commitment to delivering high-quality homes and amenity and will set the benchmark for development within the masterplan.

CGI: Birds-eye view of Zone 1A proposals

Figure 0.1

Context

1.1 Site

The site, referred to as Zone 1A, is located in Purfleet, Thurrock. It is bounded by Caspian Way to the north, London Road and existing Botany Terrace to the south, Church Hollow to the west and car park and open storage to the east, encompassing the area of land known as Hollow Woods. This woodland portion of the site is within the Purfleet Conservation Area. The site is surrounded on three sides by residential development.

Zone 1A is the first development phase of the Purfleet Centre Regeneration Limited (PCRL) masterplan, an outline planning submission was made in December 2017 (17/01668/OUT).

The context of the PCRL masterplan can be found in the Design and Access Statement for the Outline Planning Application.

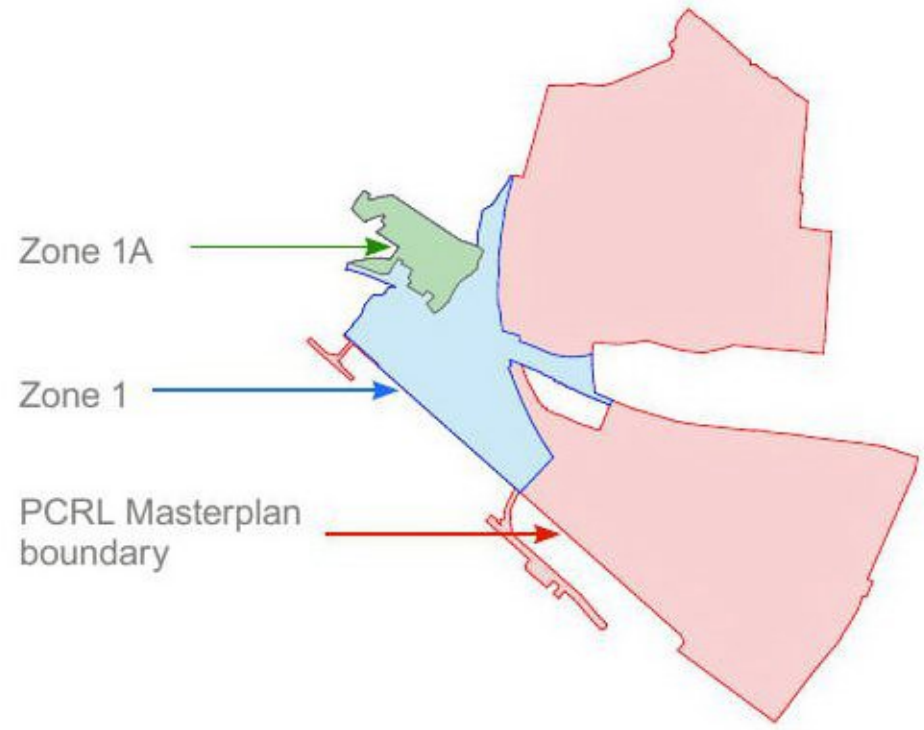


Figure 1.1

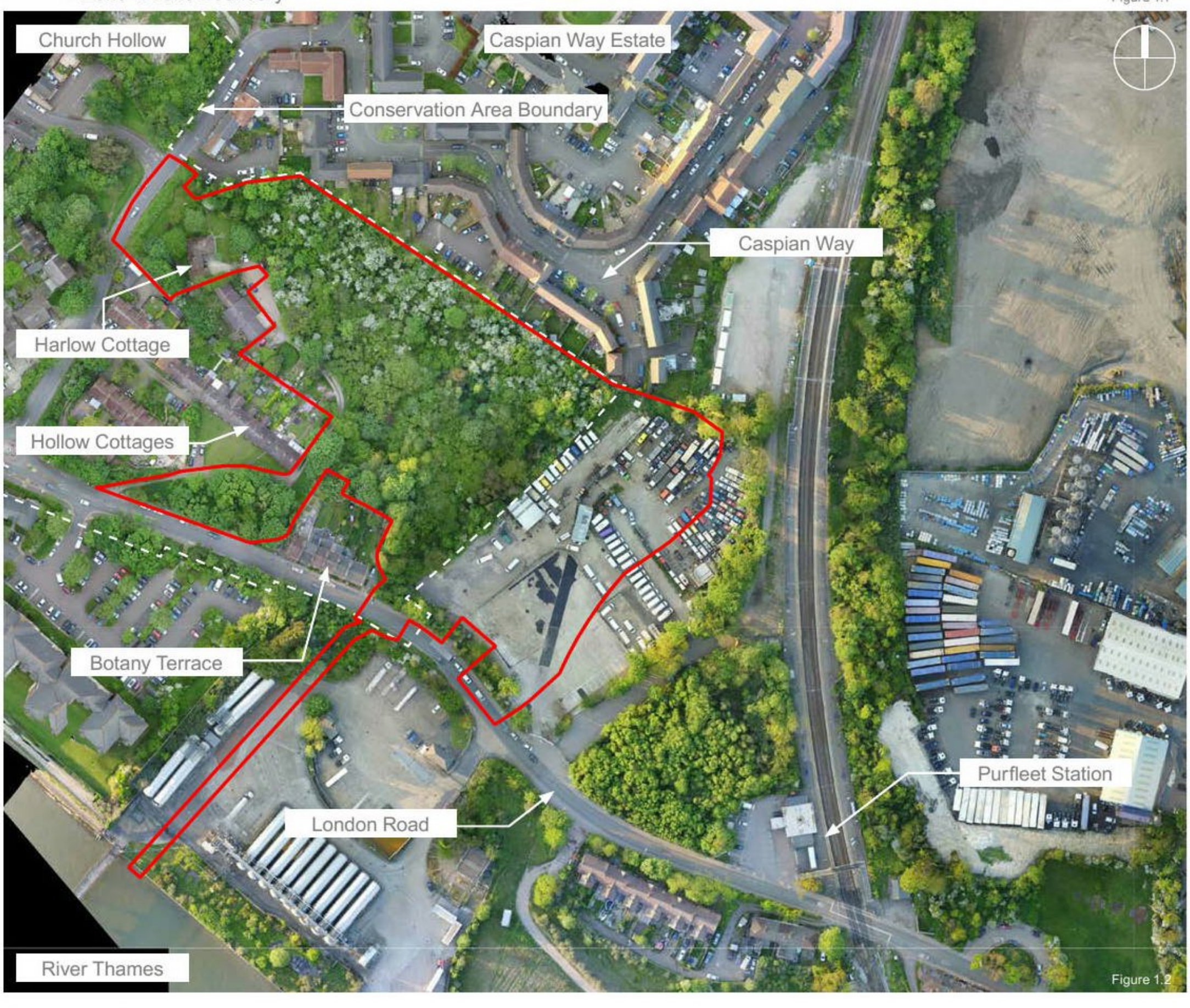


Figure 1.2

1.2 Masterplan Context

Purfleet centre regeneration is an exciting opportunity to transform Purfleet, creating a new civic, cultural and residential centre that will be an asset to Thurrock and the surrounding area.

The PCRL masterplan seeks to:

1. Provide high quality residential development
2. Create employment and education opportunities
3. Reinforce and grow a creative industry in Purfleet
4. Transform the riverfront into an asset for Purfleet
5. Create and reaffirm community links within Purfleet
6. Address the lack of local amenities with a new town centre
7. Encourage modal shift and a healthy lifestyle
8. Replace the existing level crossing with a road bridge to improve the safety of London Road
9. Maximise the opportunities granted by fantastic rail links to London and Grays
10. Knit together the existing network of green spaces and ecological sites.

The first development phase will initiate a number of these ambitions, namely:

1. Provide high quality residential development
5. Create and reaffirm community links within Purfleet
7. Encourage modal shift and a healthy lifestyle
10. Knit together the existing network of green spaces and ecological sites.

1.3 Outline Planning Application

As part of the PCRL masterplan, the development of Zone 1A is governed by the outline application parameter plans. The parameter plans set out a flexible framework that manages the maximum levels of development across the masterplan. Parameters specific to Zone 1A are detailed below.

Open Space and Green Infrastructure

The woodland area of Zone 1A is identified as strategic open space by this parameter plan. The plan also identifies a green buffer space between residential development and the new town centre. The open space and green infrastructure plan seeks to ensure the preservation of the network of open space that characterises this part of the Purfleet Conservation Area.

KEY

- Public Open Space
- Strategic Landscape
- Private space

Figure 1.4

Land Use

The land use plan restricts the predominant use of the site to residential dwellings (planning use class C3). There is an area that allows for mixed use immediately adjacent to London Road.

KEY

- Strategic Open Space
- Strategic Landscape
- Residential Areas
- Mixed Use Areas
- Mixed Use Areas, incl. Rail Station
- Utilities

Figure 1.5

Primary Access

There is one specific connection point to the existing network at Church Hollow identified.

KEY

- Existing Primary Road Network
- Proposed Primary Road Network
- Secondary Site Access
- Cycle Route

Figure 1.6

Building Heights

The maximum building height to be allowed in this area is 5-storeys.

KEY

- <8m APL Up to 2 Storeys
- <20m APL, Up to 5 Storeys
- <30m APL, Up to 8 Storeys
- <40m APL, Up to 10 Storeys

(APL = Above Proposed Level)

Figure 1.7

Residential Density

There are two areas of residential density that affect Zone 1A. Within the Purfleet Conservation Area the residential density is restricted to 200 habitable rooms per hectare, increasing to 400 habitable rooms per hectare in the eastern part of the site.

KEY

- 200 Habitable Rooms/hectare
- 400 Habitable Rooms/hectare
- 600 Habitable Rooms/hectare

Figure 1.8

Ground Levels

The ground level parameter plan does not have an impact on the ground levels in Zone 1A.

KEY

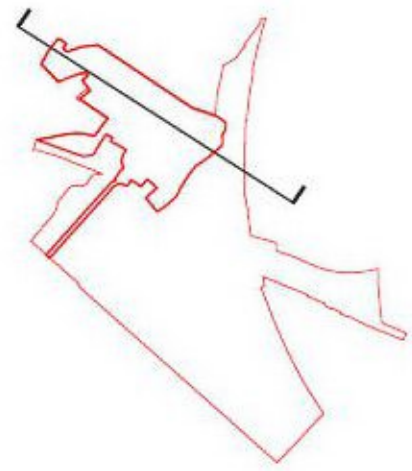
- +0m to +2.5m AOD
- +2.5m to +5.0m AOD
- +5m to +7.5m AOD
- +7.5m to +10.0 AOD
- +10m to +12.5m AOD

(AOD = Above Ordnance Datum)

Figure 1.9

Sectional Representation

The diagrams below, taken from Chapter 5 of the Outline Planning Design and Access Statement, show the limits of the parameter plans drawn as a section through Zone 1A. By drawing the building heights and density parameters as sections the relationship between them begins to define proposed massing across the site.



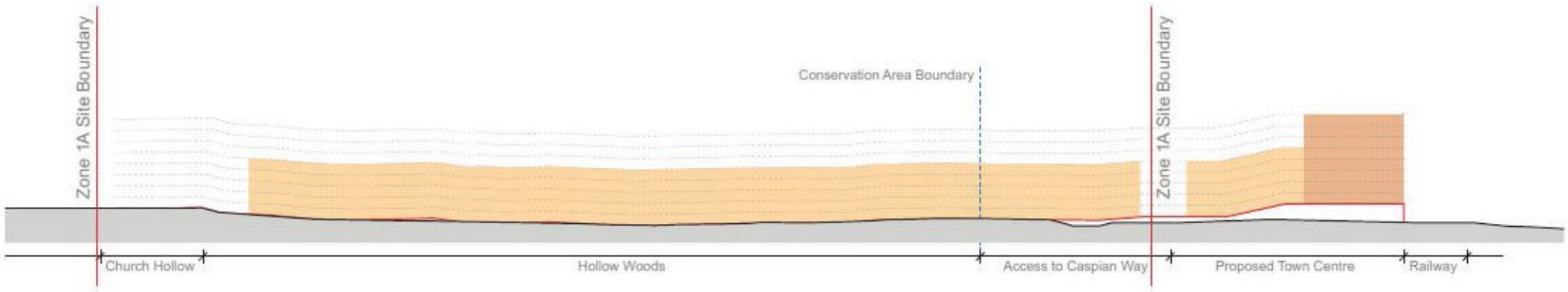


Figure 1.10

Building heights parameter plan: the orange coloured parameters show the maximum building height above the proposed ground level.

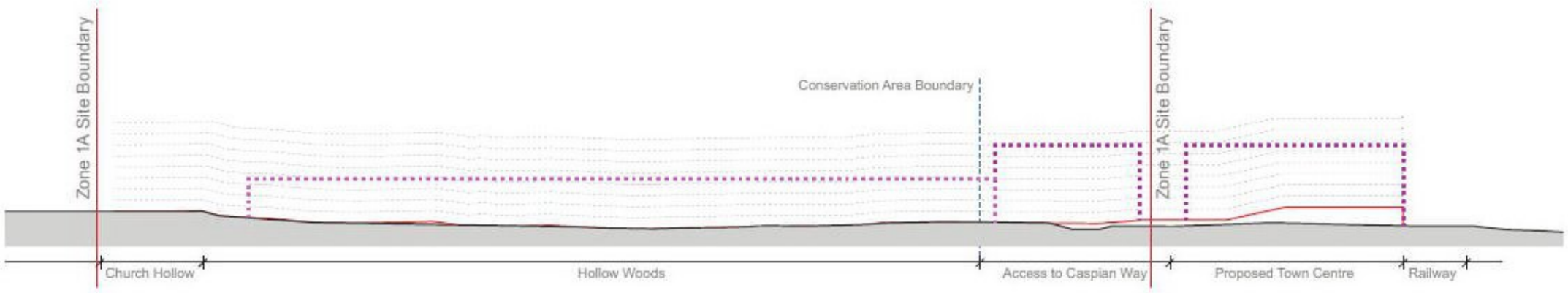


Figure 1.11

Residential density parameter plan: the purple parameter lines show increasing density from west to east.

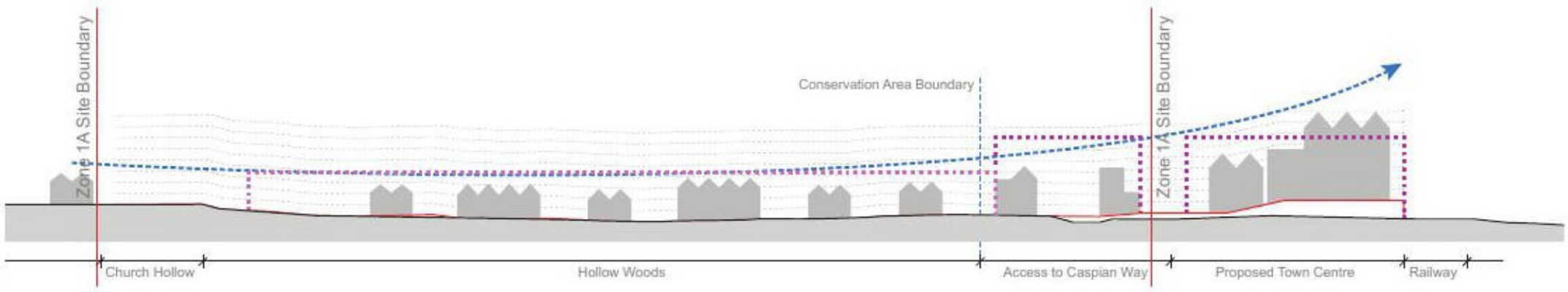


Figure 1.12

Combining the parameters determines the general principles of increased massing in the east within the proposed town centre. This diagram shows how relationship between proposed building heights in Zone 1A and surrounding areas.

1.4 Purfleet Conservation Area

The Purfleet Conservation Area, detailed in Thurrock Council's Purfleet Conservation Area Appraisal (2007), was designated in 1985. It encompasses the historic core of Purfleet, including the former area of the Purfleet Garrison and the Gunpowder Magazines, as well as Tank Lane, with the chalk cliff face to the south. The Conservation Area extends to the south-east to Church Hollow and Hollow Cottages and the densely wooded area known as Hollow Woods.

The western and central parts of the Conservation Area are characterised by areas of open space, while further east, along London Road, the character of the area is more residential.

Adjacent to the Conservation Area to the east and south-east are areas defined by the former quarrying and industrial uses, which disconnect the historic core of Purfleet from its eastern parts.

Section 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990 states that "special attention shall be paid to the desirability of preserving or enhancing the character or appearance of" the Conservation Area.

The Zone 1A site crosses the western boundary of the conservation area and includes the Hollow Woods, a key element of the open space network which characterises the Conservation Area, and Harlow Cottage.

KEY

- Purfleet Conservation Area
- Listed Buildings
- Non designated Heritage Asset
- Tree Protection Orders areas
- Network Rail Operational Land
- Masterplan Site Boundary
- Zone 1A Site Boundary

1. Listed Buildings - Hollow Cottages
2. Listed Buildings - Church Hollow
3. Listed Buildings - The Royal Hotel
4. Listed Buildings - Purfleet Gunpowder Magazine
5. Non-designated Heritage Asset (Botany Terrace)
6. Harlow Cottage
7. TPOs - Hollow Wood
8. TPOs - Church Hollow
9. TPOs - Tank Hill Road
10. TPOs - Botany Quarry

1.5 Built Context

The site contains only three built structures. One of which is within the Conservation Area, Harlow Cottage. The other two built structures are industrial sheds and are outside the boundary of the Conservation Area and will be demolished.

Harlow Cottage is located at the west end of Hollow Woods and was built in the mid twentieth century. The building itself is a brick bungalow set in a large garden hidden from Church Hollow by a high fence and hedge. It makes no positive contribution to the Conservation Area. The curtilage of Harlow Cottage is noted within the Purfleet Conservation Area as being predominantly landscaped open space and therefore contributes to the series of open spaces that form a major part of the Conservation Area.

Botany Terrace is located on the north side of London Road at the periphery of old Purfleet, but within the Conservation Area and outside the development site. The row of six 19th century houses retains much of their original appearance and is identified within the Purfleet Conservation Area Character Appraisal as being a Significant Built Form. Whilst Botany Terrace is not within the red line boundary, the site extends entirely around existing curtilages and thus regard must be had to the desirability of preserving their setting and the contribution these buildings make to the Conservation Area as a whole.

Similarly Hollow Cottages sit outside the site but within the Conservation Area. The significance of Hollow Cottages, listed as Grade II Buildings in the Purfleet Conservation Area, is related to their architectural form as 19th century 'alms-house' style cottages. The cottages are set back from London Road between Botany Terrace to the south-east, and Harlow Cottage and Dipping Bungalows to the north-west. Fronting onto a communal green, the terraced cottages have steeply sloping tiled roofs and prominent chimneys making their scale appear more substantial than that of single storey building. The proposals, discussed in Chapter 2, have due regard for the setting of these buildings.

Botany Terrace Figure 1.14

Hollow Cottages Figure 1.15

Harlow Cottage Figure 1.16

Harlow Cottage - View from Church Hollow Figure 1.17

To the north of the site is the Caspian Way Estate. The estate was built at the beginning of the 21st Century. It is typical of large residential development of that time.

The layout is that of a large loop road accessed only via Church Hollow to the south-west. At the south-eastern corner there is a spur road that looks to have been designed with a future connection in mind. The dead-end is currently a wooden fence.

Caspian Way

Figure 1.19

Aerial image of Purfleet showing Caspian Way Estate

Figure 1.18

Caspian Way

Figure 1.20

Caspian Way

Figure 1.21

1.6 Hollow Woods

Hollow Woods is characterised as significant open space for Purfleet Conservation Area, however the contribution of this open space to the Conservation Area has been reduced by the neglected, overgrown and poor quality woodland which has established itself through natural regeneration and changed the character and appearance of this part of the Conservation Area. Over time the Hollow Woods area has changed from being the edge of a quarrying area, to becoming an open and accessible area of allotment gardens in the 18th century and then in the late 20th century abandoned as an un-managed woodland.

The woodland is enclosed by a close-boarded fence and tree lined boundary therefore access is limited and made difficult by dense undergrowth. The Hollow Woods, in its current state, no longer positively enhances the Conservation Area and the area has lost the local level of communal value that it might have by association with the former public allotments and open space.

The Hollow Woods form the edge of the Purfleet Conservation Area and are a transition, or buffer, zone between the historic centre of Purfleet and the large areas of light industrial uses that now form the majority of the PCRL masterplan development site.

Hollow Woods is the subject of a number of Tree Preservation Orders (TPO's), primarily group and area orders but also two specimen tree orders. However, much of the dense areas of vegetation and woodland is of poor quality as it was left without maintenance. The arboricultural survey has identified groups of trees and woodland areas that should be maintained, however it is recommended that a number of trees are removed as the density and relative immaturity of much of the tree stock is reducing the quality of trees recorded on site.


Hollow Woods
Figure 1.22


Hollow Woods
Figure 1.23


Hollow Woods
Figure 1.24

1.7 Material Context

There is no specific building style or material choice employed in the surrounding site context. The existing buildings in the immediate surroundings are from different periods and therefore provide a range of styles and materials. Historically the site and its environs have been used to quarry chalk. The surrounding buildings use flint, brick, stone, timber cladding, clay tiles and painted render.

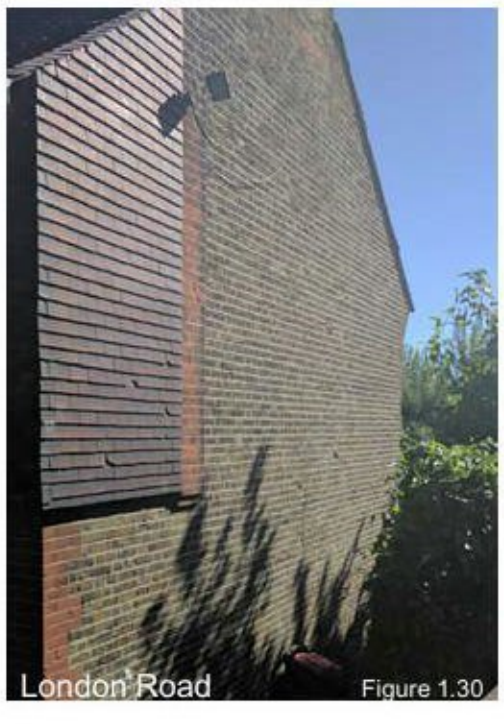

Purfleet Gunpowder Magazine Figure 1.25


Purfleet Gunpowder Magazine Figure 1.26


Caspian Way Figure 1.27


London Road Figure 1.28


Tank Hill Road Figure 1.29


London Road Figure 1.30


Caspian Way Figure 1.31


Caspian Way Figure 1.32

Design

2.1 Introduction

The development of Zone 1A is based on the principles listed below. The masterplan parameter plans for Zone 1A are relatively prescriptive, this is due to the nature of the site for Zone 1A being partially within the Purfleet Conservation Area. Many of the design principles set out below are governed by the parameter plans.

Site Layout:

- Preserve and enhance open spaces and improve public access to these
- Keep development to the periphery of the Conservation Area
- Enhance the context of Hollow Cottages
- Define 'gateway' approach to the new Purfleet
- Connect new and existing Purfleet in a visible and legible manner.

Site Principles:

- Transition of heights and density
- Transition from family housing to urban living typologies
- Improve walkability and connections for existing residents to the train station and proposed town centre
- Observed Streets
- Connect the new development with the existing Purfleet community
- On-plot parking
- Respond to anticipated future development.

Use & Amount

The scheme proposes 61 residential dwellings, two play areas (one formal, one informal), an orchard area, and a publicly accessible woodland.

Dwelling Type	Number	% of scheme
2 bedroom house	16	26
3 bedroom house	37	61
4 bedroom house	8	13
	61	

Use	Area (Ha)	% of site area
Residential dwellings	0.38	16
Private gardens	0.19	8
Play area	0.09	4
Retained & improved woodland	0.59	25
Orchard walk	0.07	3
Other uses e.g. roads, parking, verges, ancillary space etc.	1.04	44
Total site area	2.36	

Sketch of Hollow Woods Crescent

Figure 2.1

2.2 Site Layout

In order to preserve the open space and keep development to the periphery of the Conservation Area, the proposals are to the northern and eastern boundaries of the site. To the south of the site the proposed buildings address London Road in the same manner as the adjacent Botany Terrace - as one terrace.

In response to the future development of the town centre the orchard walk is a green buffer, creating distance and respite between the proposed residential terrace and future development.

At the western edge of the site is a play area, a signal that this development, and the remainder of the masterplan, is for all residents of Purfleet, not just new residents.

Connectivity and links to the existing community is a key principle of the wider masterplan. The layout and arrangement of the adjacent development, Caspian Way Estate, lends itself to a connection here and a continuation of the building line along Caspian Way. This connection will be one-way vehiclular access (exit only from Caspian Way Estate also allowing for emergency access).

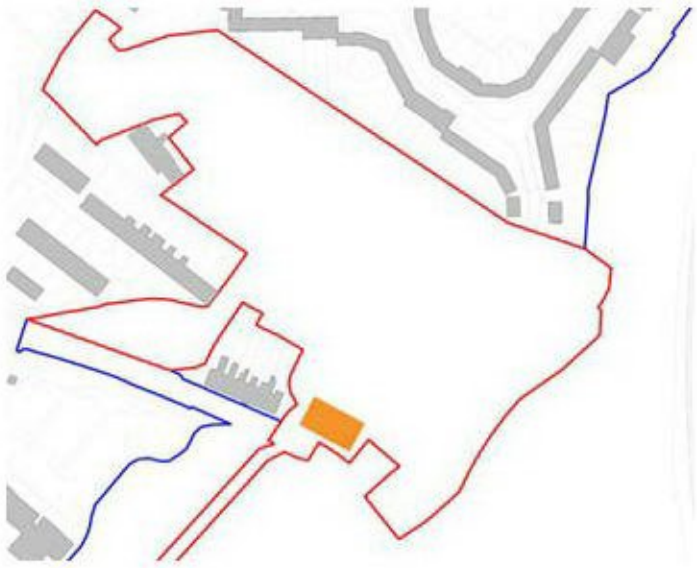
Through the Conservation Area, Hollow Woods Crescent is a series of short terraces, transitioning to semi-detached family houses further to the west. The short terraces ensure the building line is not continuous and therefore forms a softer, intermittent boundary to Hollow Woods. The proposals here are seen as small clusters of houses in a woodland setting.

The Mews forms the western edge of the Conservation Area, with two bedroom family houses facing the retained woodland and the woodland play area. This boundary is key to marking the edge of the woodland, the Conservation Area, and the start of the more urban proposals of wider PCRL masterplan.

The Mews street forms the western edge of the woodland and marks the transition from the Conservation Area to the more urban proposals of the new town centre and the wider Purfleet masterplan. The mews provides 2 bed family houses overlooking the retained woodland and larger 3 storey, 3 bedroom town houses facing onto the orchard walk and new town centre. The mews street between is based on a traditional mews, with vehicular access and a sense of shared ownership and use over the space. This also reflects a more urban style of living in response to the future masterplan ambitions for Purfleet, particularly the town centre and the close proximity of these homes to the train station. The specific nature of the Mews is discussed later on in this Design and Access Statement.

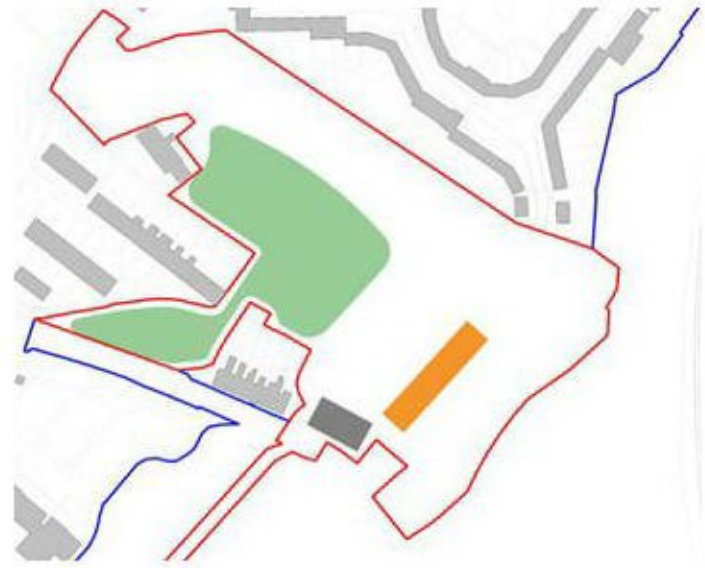
Figure 2.2

Scheme Development Diagrams



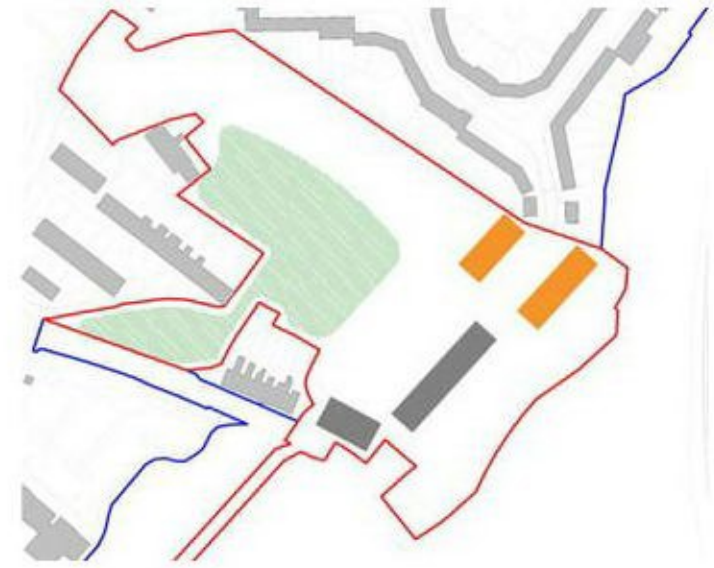
Terrace along London Road

Knitting new and old Purfleet by connecting Botany Terrace with future development along London Road.



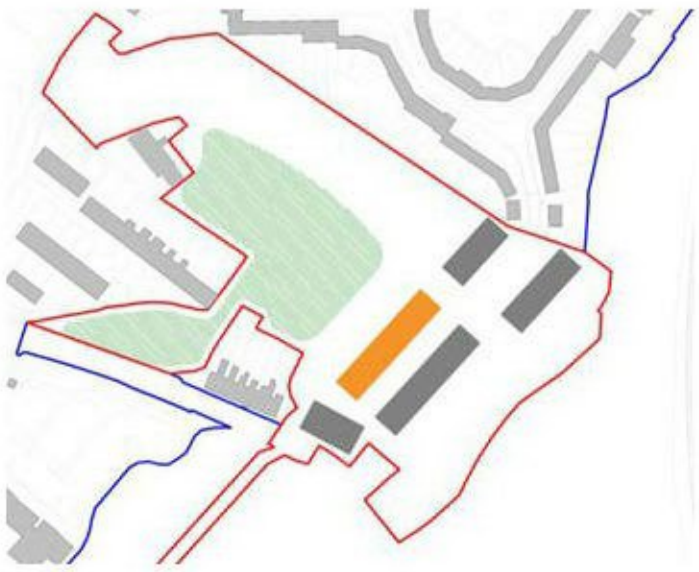
Single terrace into Hollow Woods

Creating a formal boundary condition, protecting the Hollow Woods and establishing a secluded woodland by providing a buffer to the anticipated development of Purfleet Town Centre.



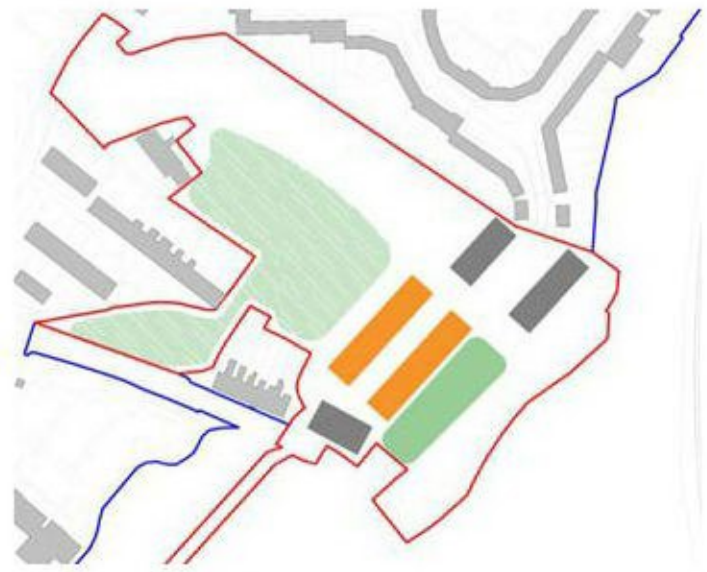
Connection with Caspian Way

Creating links with existing developments in Purfleet, increasing permeability and connections to existing communities.



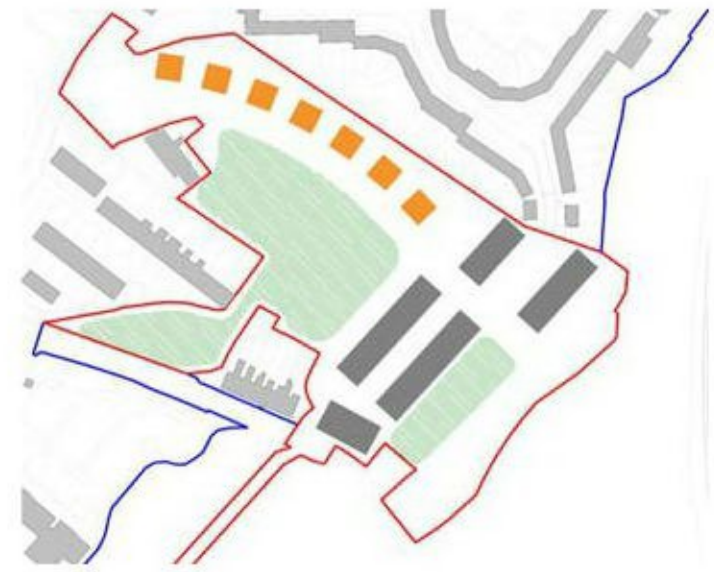
Mews Houses with garages

Removing parking from the front of the houses and creating a communal amenity space. Gradual increase of density to manage the scale transition between Hollow Woods and new town centre.



Orchard Walk Setback

Forming a natural buffer between residential and town centre and managing level difference between London Road and Hollow Woods.



Crescent of Semi-detached houses

Creating a formal boundary to Hollow Woods and setting up a relationship and rhythm with the existing dwellings in Caspian Way. Security and overlooking to Hollow Woods.

Crescent to include terraces

Adding variation to the rhythm of street elevations and responding to Purfleet market requirements.

Adjust orientation of houses

Adapting orientation of crescent houses to overlook play area and relate with Caspian Way

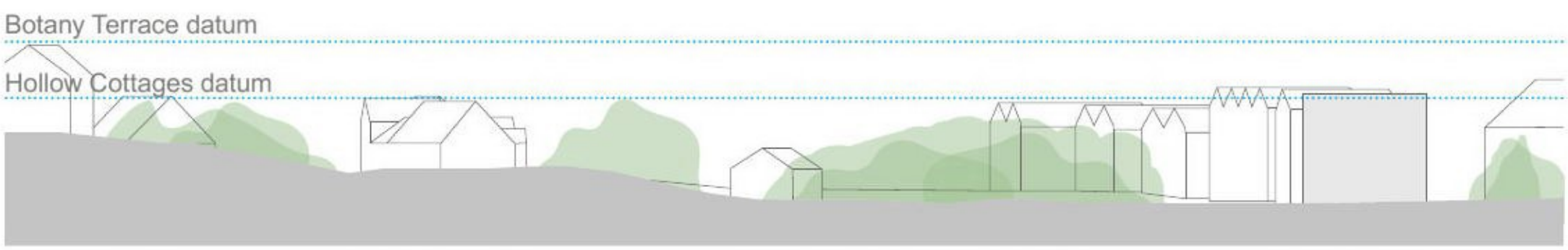
Figure 2.3

2.3 Scale

The scale of the buildings responds to the surrounding context and their position in, and adjacent to, the Conservation Area, as well as the future context of Purfleet town centre. The proposed buildings are two- and three-storeys, with a general increase in mass from west to east. This manages the transition between the existing built context and the future town centre, as well as ensuring views of the Hollow Woods for the westernmost dwellings. Undulating topography through Hollow Woods ensures gentle variation in the building heights and reduces the height difference between the two- and three-storey buildings.

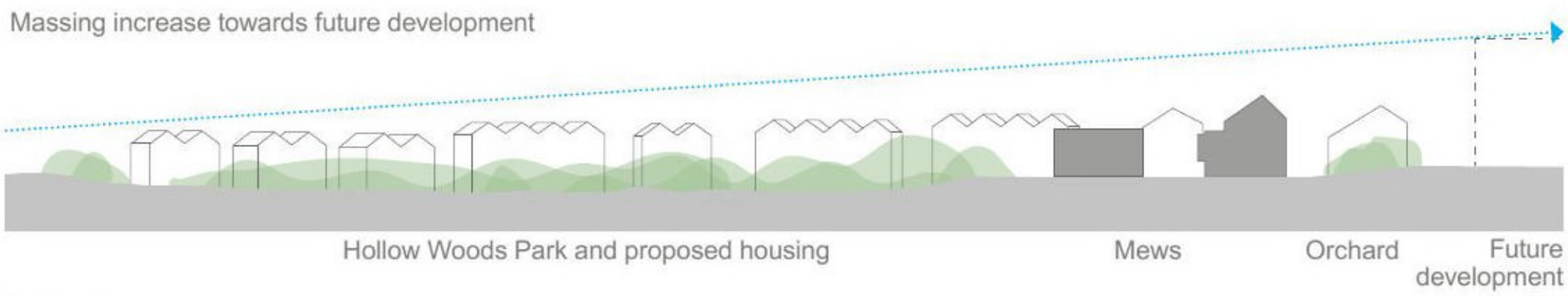
The massing of the scheme will preserve the character of the Conservation Area by providing a buffer zone between the boundary Conservation Area and the future town centre. This buffer will ensure that the open space character is preserved, by both this scheme and in relation to future development of the masterplan.

The individual houses generally have a narrow plan enabling woodland or orchard frontage for the majority of the houses. Private gardens to the rear vary in size in response to the site boundary.



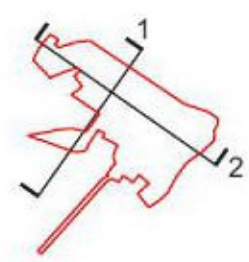
Section 1

Figure 2.4



Section 2

Figure 2.5



2.4 Architectural Typologies

There are four typology areas that define the proposed scheme. Building appearance is linked to the site heritage through material reference. This was an important element in the design of Zone 1A, and one that has been reflected throughout the different periods of development within Purfleet. Each building type is typical of the era in which it was constructed, it is therefore important to the design team not to create a pastiche of the surrounding buildings but to establish a contemporary aesthetic.

The proposals use the same building material palette of four principle materials across the site. Material choice is based on the textures of the materials, this concept is shown below:

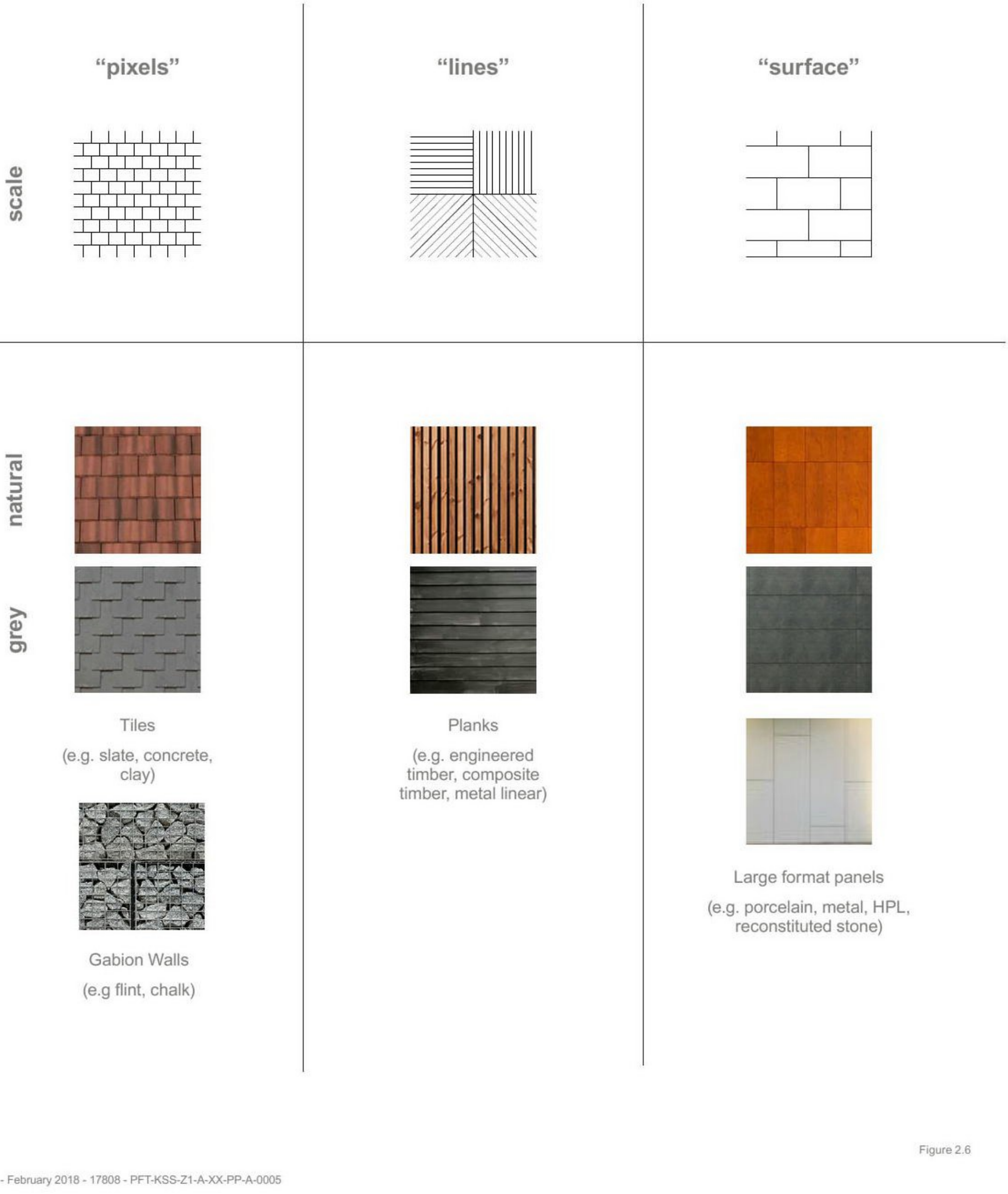


Figure 2.6

Building Material Palette:

Figure 2.7

Metal Cladding

Metal cladding is included in the building material palette due to the ability to create one surface in any plane. As well as the opportunity to achieve any colour and a range of textures. With the other highly textured materials included in the material palette it was important to the design team to be able to balance this with a 'surface' materials.

Figure 2.8

Tile Hanging

Tile hanging is a popular cladding system in Essex. The ability to clad both the roof and the walls in the same material appealed to the design team when considering contemporary applications of materials found in and around the local context.

Figure 2.9

Timber Effect

Timber weatherboard cladding is also a typical elevation treatment throughout Essex, especially in areas with typically damp air close to the sea. This style of cladding is included in the material palette due to the interesting texture created by the overlapping planks, ensuring that larger elevations do not appear too flat.

All references to timber cladding in this section mean timber or a timber effect substitute, such as engineered timber or a composite material cladding system.

Figure 2.10

Flint Gabions (or pre-cast concrete with flint facing)

The use of flint reflects the historic use of the site as a chalk quarry. This industrial heritage has shaped much of Purfleet, chalk extraction has taken place in the vicinity since 16th Century. In the 18th Century the Whitbred estate, owners of the chalk quarries, developed a model village, parts of which remain in Purfleet today.

2.4.1 Hollow Woods

Hollow Woods proposes family housing in a woodland setting. The buildings range from two-storey semi-detached houses in the west to three-storey terraces to the east.

A flint base grounds each building into its context and reflects the historic use of the site as a chalk quarry. Timber effect cladding on the elevations faces the natural habitat of the Hollow Woods. The different planes and subtle changes in cladding orientation facing the woodland articulate and soften the front elevations, responding to their woodland location. This use of cladding references the agricultural style of buildings found at nearby High House. The roof wrap unites each terrace as one unit.

The three- and four-bedroom houses have private gardens to the rear and dedicated parking spaces either on plot or on the street. The domestic scale of the street promotes woodland access.

Through sympathetic building heights, massing and use of natural materials, the design of the houses in Hollow Woods preserves the character of the Conservation Area. The houses within Hollow Woods respect the building height of the Grade II listed Hollow Cottages. All development surrounding the Hollow Woods is below the datum set by the Hollow Cottages' recognisable chimneys due to the natural changes in topography across the site.

Hollow Woods Elevation

Figure 2.11

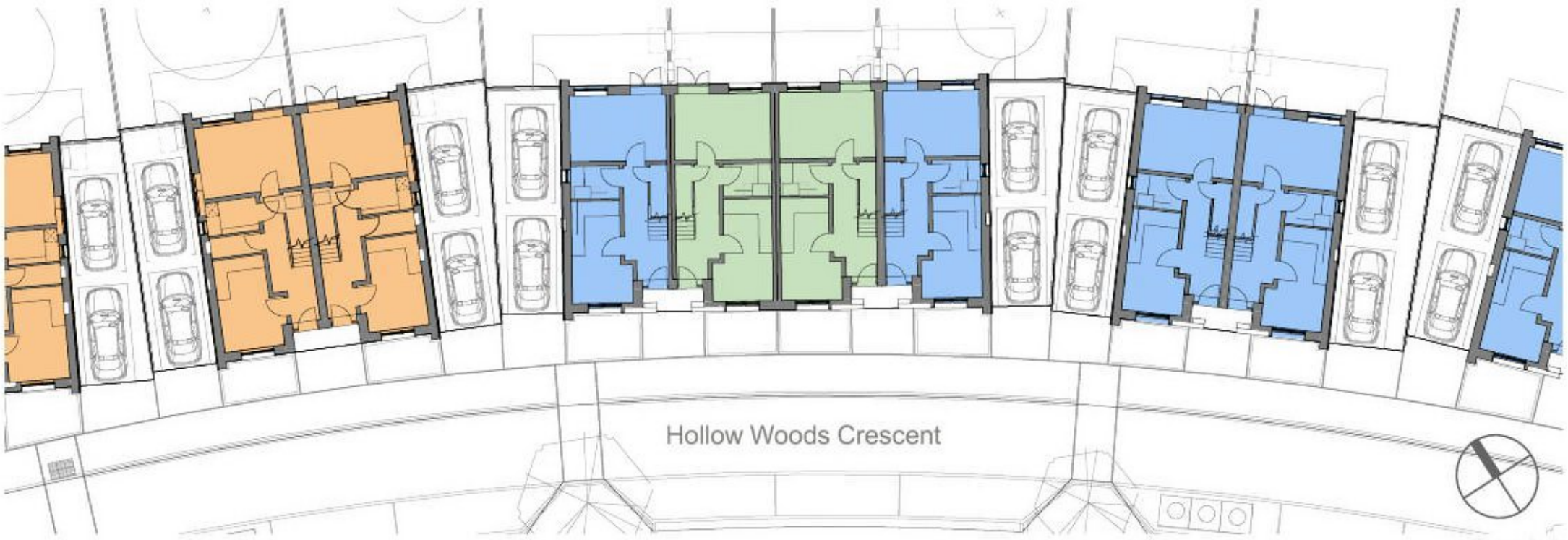


Figure 2.12

House Type 6

House Type 7

House Type 8

Figure 2.14
Key Plan

Hollow Woods elevation development sketches:

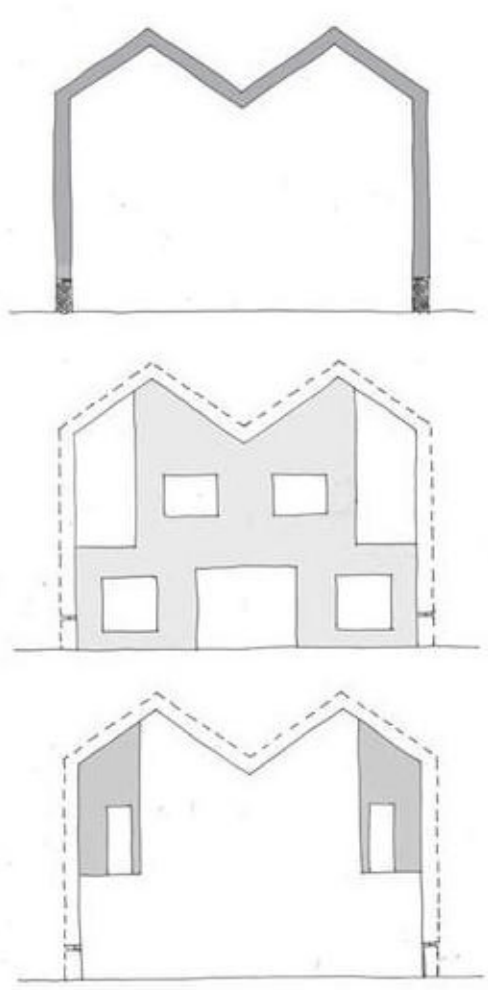


Figure 2.13

Zone 1A Building Material Palette:

Tile Hanging

Figure 2.15

2.4.2 Mews

The Mews has three distinct functions: it bounds the edge of the Hollow Woods, initiates the transition into a more urban style living, and protects the open space of the Conservation Area, shielding the woodland from the urban mass of future development.

The western edge of Hollow Woods is bound by the Mews terrace, timber cladding reflects the natural habitat of the woodland. The low building height (two storeys) aligns with the heights of the taller trees, ensuring the development adjacent to the woodland is sympathetic in height to its surrounding context.

The central mews street is the first introduction of a more urban style of living in within the Purfleet masterplan. Parking is provided to each house in the form of an integral garage. The Mews is overlooked by internal living spaces on the first floor and front doors at street level. Passive observation is a key element of creating a safe street environment.

As well as introducing a higher residential density the mews is an opportunity to introduce a change in material; the length of the mews street is broken up and articulated by high level window boxes, drawn out of the timber façade. These windows overlook the Mews Street, they are positioned and angled to prevent direct overlooking across the width of the road.

The eastern terrace that forms the other side of the mews is three-storeys. The massing is increased in response to the future development of Purfleet town centre. These dwellings enjoy views back to the woodland from the upper level terrace, as well as a direct frontage to the orchard area.

In a similar style to the woodland elevation, the orchard elevation is clad in timber boards. Rainwater pipes, detailed into the plane of the façade will offer delineation between properties. The blankness of the long façade is broken up by protruding window boxes, clad too in timber to embed in the buildings into their woodland heritage.

These properties all have private amenity in the form of roof terraces with woodland views. Private amenity at ground level in the form of a traditional garden is limited, this forms part of the transition to a more urban style of living.

Mews - Woodland Elevation

Figure 2.16

Figure 2.17

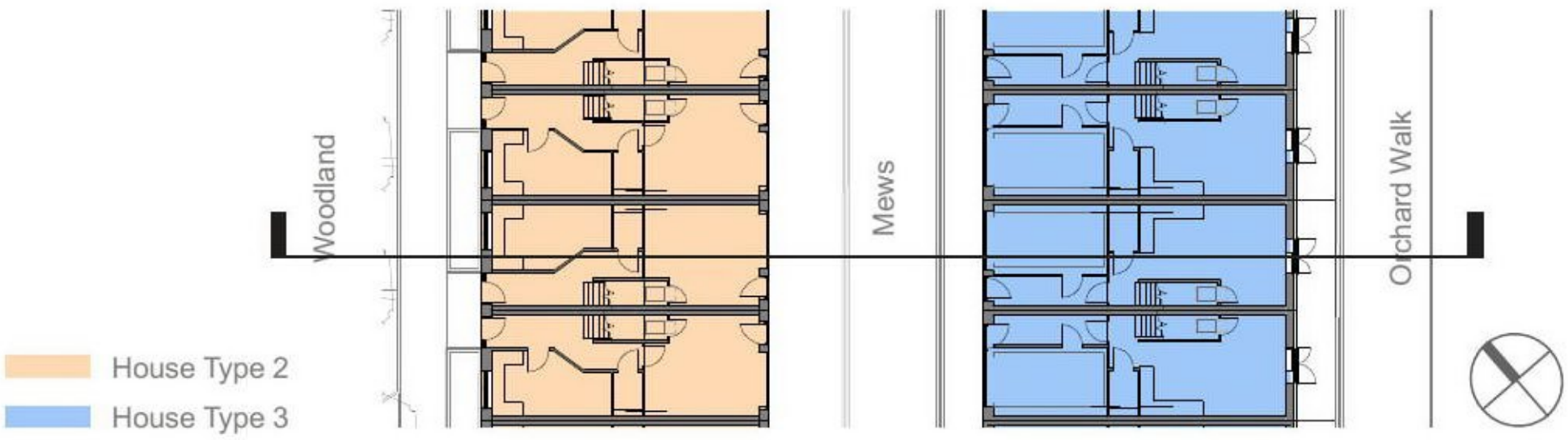


Figure 2.18

Figure 2.20
Key Plan

Mews elevation development sketches:

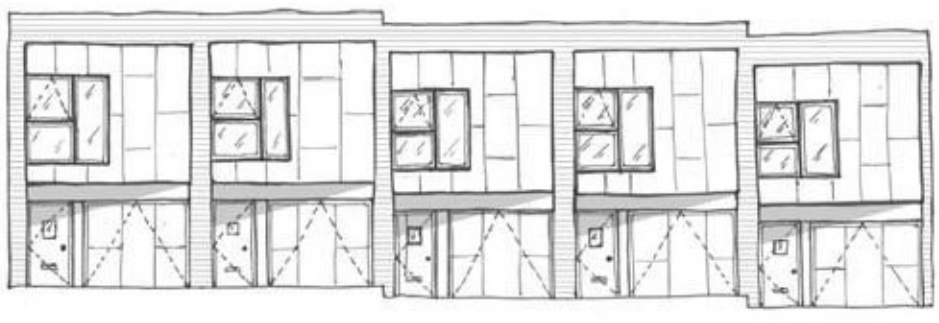


Figure 2.19

Zone 1A Building Material Palette:

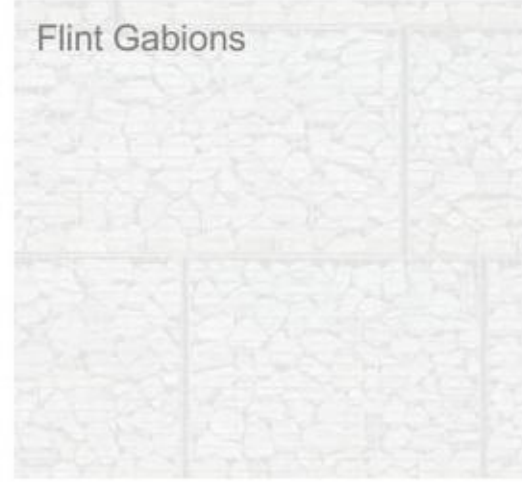


Figure 2.21

2.4.3 London Road

The terrace on London Road enjoys the most direct relationship with the history of Purfleet. Botany Terrace stands proudly at the crest of London Road announcing the Conservation Area to those travelling west. The proposed scheme looks to extend that relationship. Five houses in a single terrace follow the established dwelling width of Botany Terrace. The predominant building colour of red brick is reflected in the choice of clay tile, whilst also suggesting the beginning of something different; the gateway to future development. Clay tile is a building material used elsewhere in the local area and in the wider Essex area.

The level of London Road is raised above the level of the surrounding ground. There is bank to the northern side of London Road that is 3 metres in height, to utilise this level change and tie into the mews street behind, the London Road terraces have an integral garage at the lower level, accessed from the mews. As the land drops away a flint base is revealed. The use of flint acknowledges the past use of the site as a quarry and expresses the half basement of these properties.

The eastern gable end of the proposed terrace overlooks the proposed road junction and will be seen along the length of London Road. It is a key point within the project. The gable is defined by an aluminium frame that rests on the flint base. Conceptually the materials represent a traditional base supporting contemporary development, in the same manner that the wider Purfleet masterplan is contemporary development made possible through the historic uses of the site. A window box, angled to the south, allows view of the river from the master bedroom.

The eaves line through with the elevation of Botany Terrace, and the roof angle is the same on the London Road elevation. Referencing the surrounding context in the massing of this terrace is a key ambition for the design team.

London Road Elevation

Figure 2.22

House Type 1

Figure 2.24

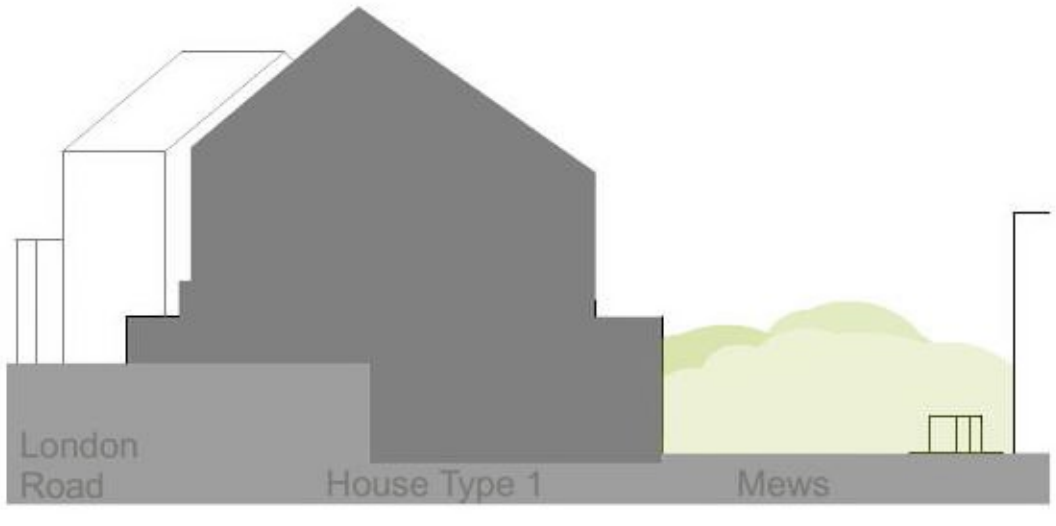


Figure 2.23

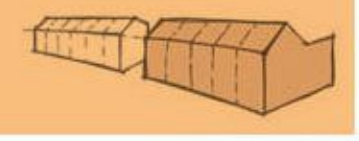
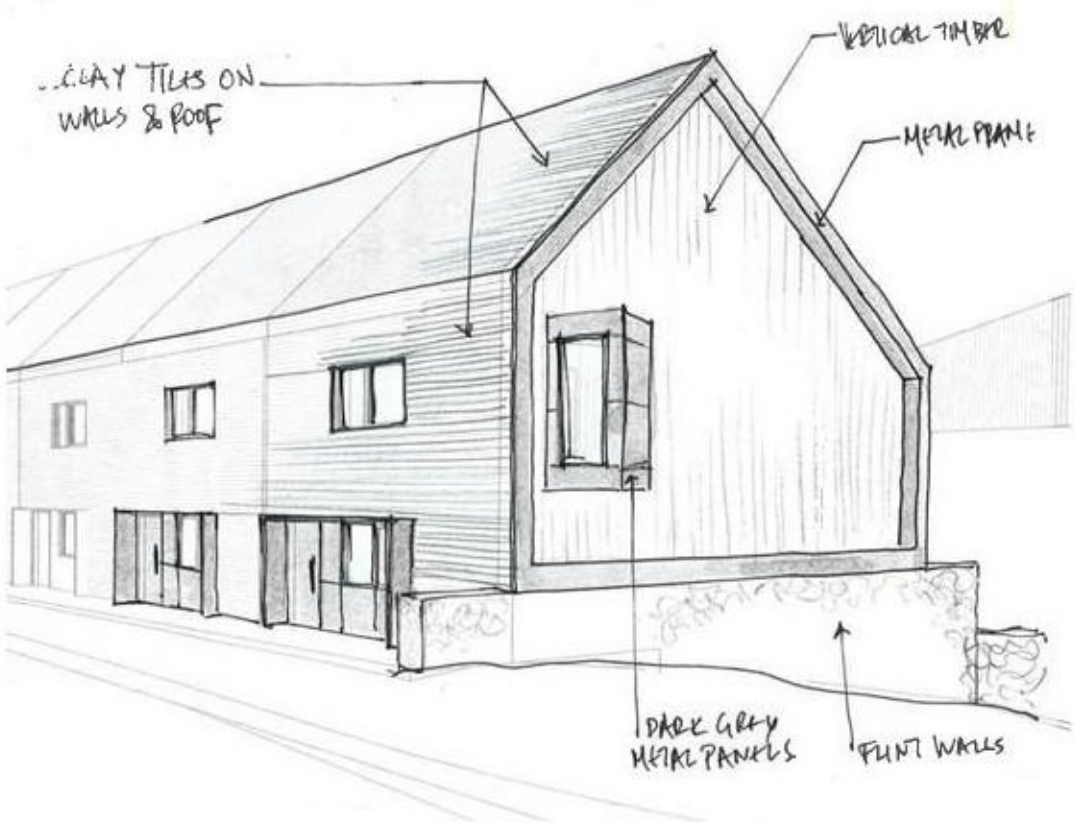


Figure 2.26
Key Plan

London Road development sketches:



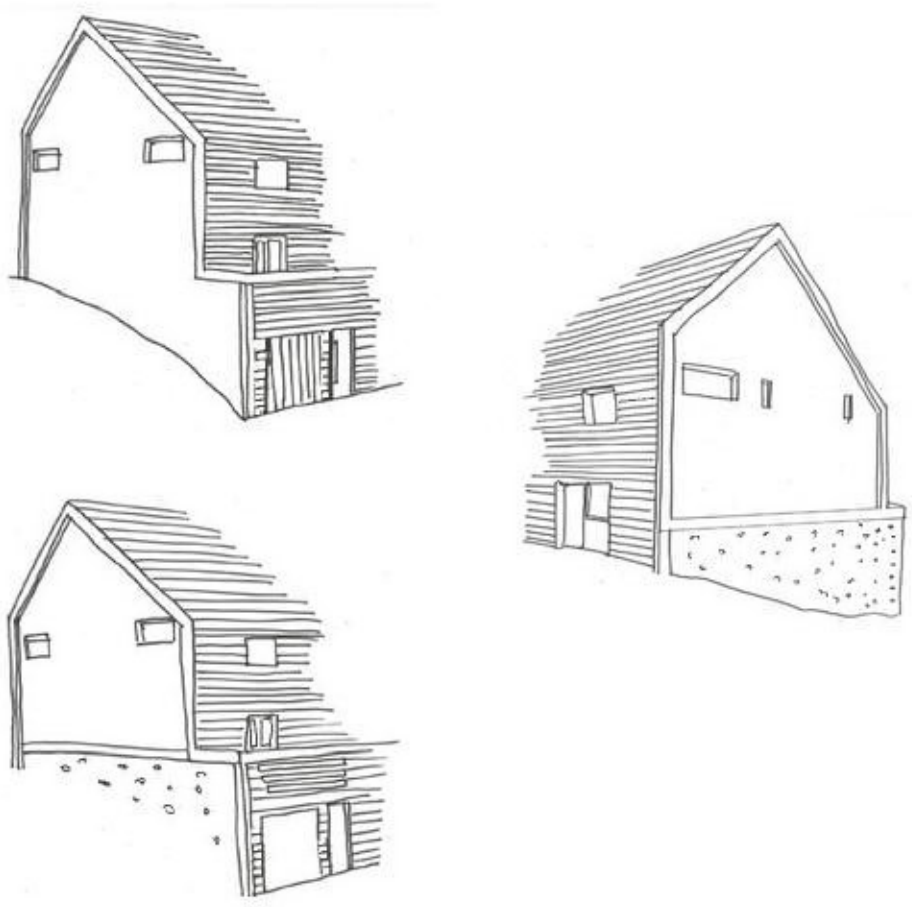


Figure 2.25

Zone 1A Building Material Palette:

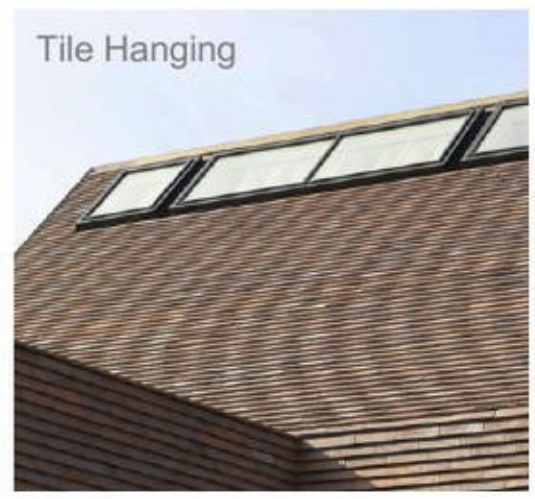


Figure 2.27

2.4.4 Caspian Way

The ambition of creating links to the existing community can be realised with the extension of Caspian Way into the Zone 1A. Buildings face the street in a traditional manner with private parking and cycle storage for each house on plot.

Each dwelling is defined through a strict elevational treatment. A juxtaposition of two materials defines each property. Metal cladding forms the principle mass - tiles break the terrace denoting each property. The metal cladding wraps over each house, folding and moulding to the roof form. Openings are restricted to the metal plane. Roof terraces are cut into the roof void. These private terraces to the west enable views back to the woodland and are screened for privacy from the new town centre by the roof line.

Private parking spaces are located in front of each property. Adjacent to each parking space is a secure cycle storage unit with capacity for two cycles.

Caspian Way Elevation

Figure 2.28

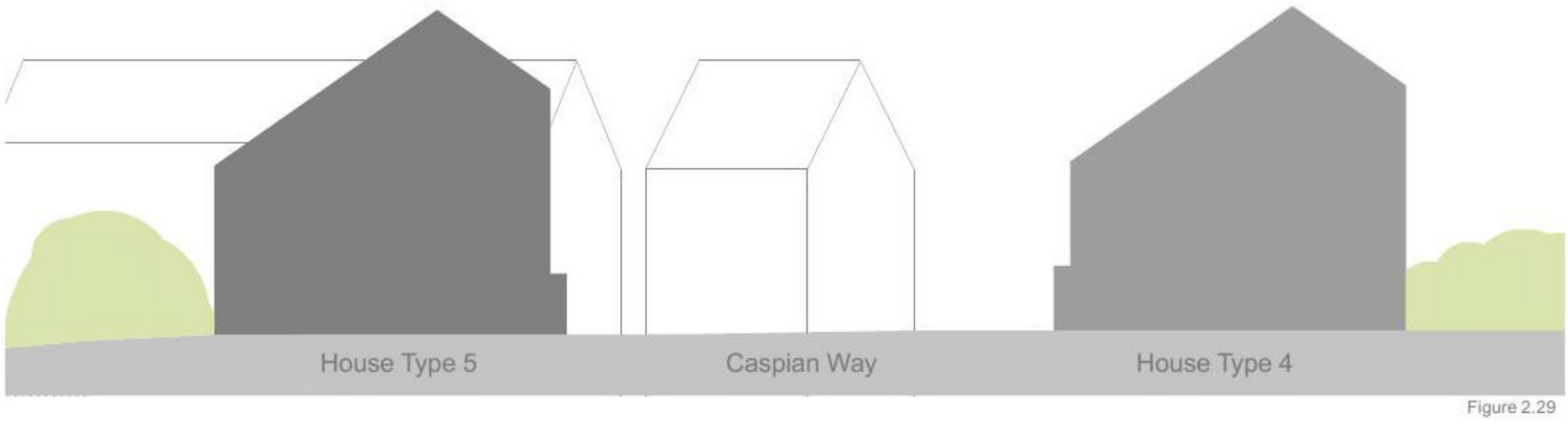


Figure 2.29

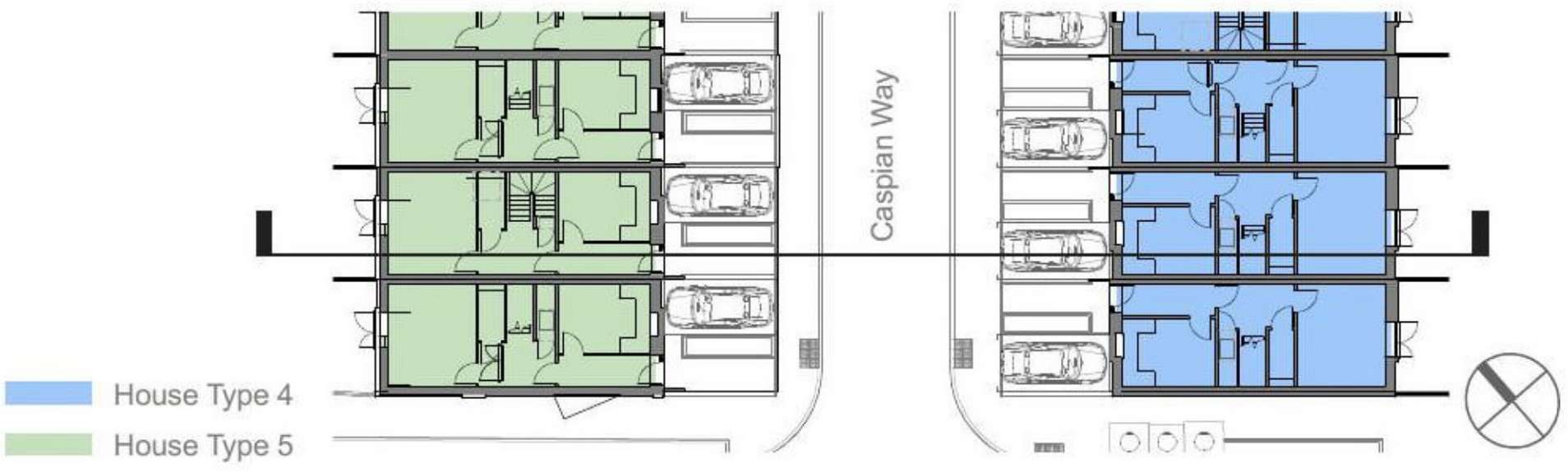


Figure 2.30

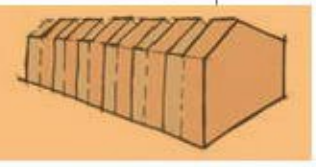


Figure 2.32
Key Plan

Caspian Way elevation development sketches:

Figure 2.31

Zone 1A Building Material Palette:

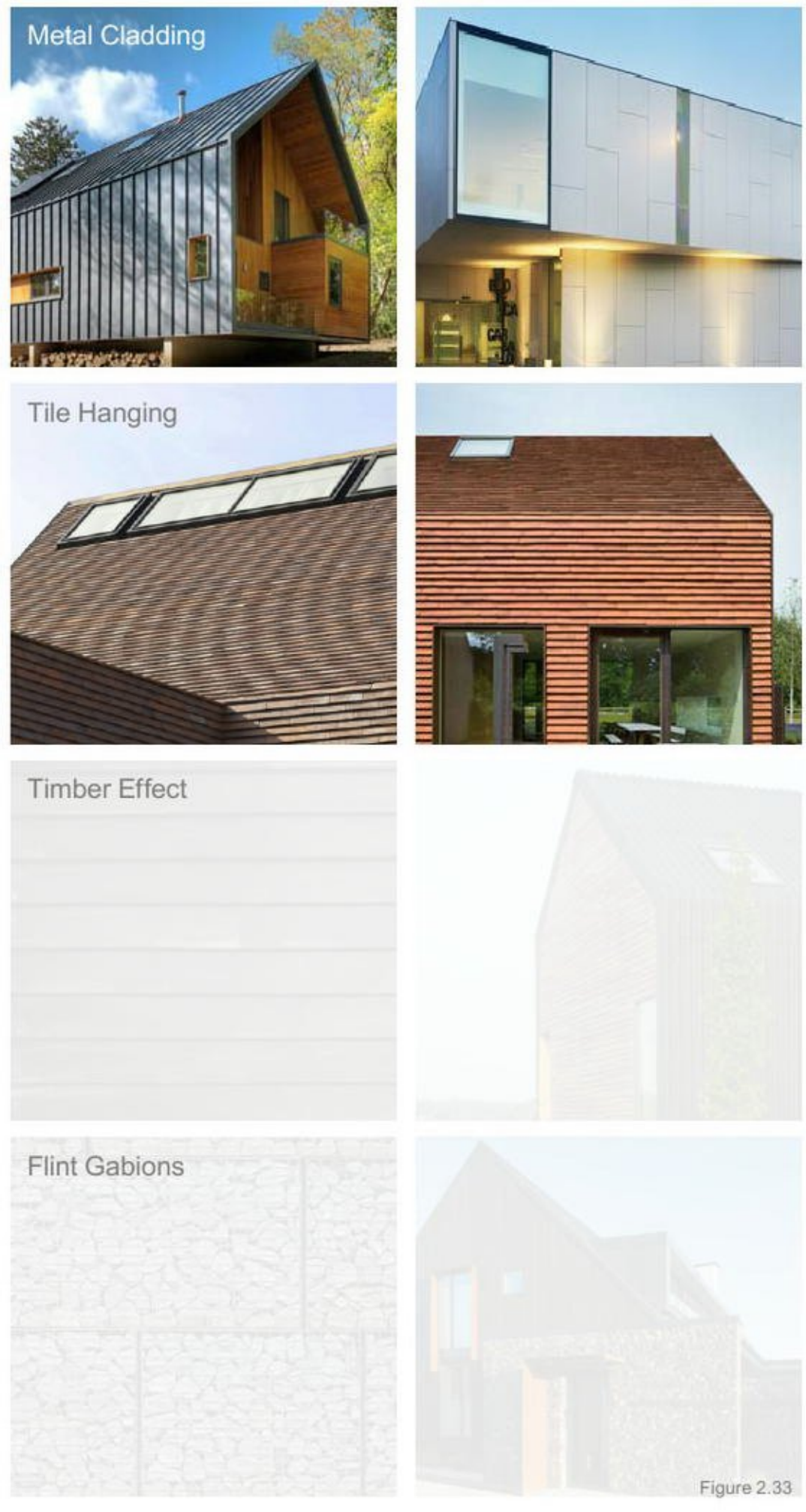


Figure 2.33

2.5 Response to Outline Parameters

The following plans overlay the proposals with the outline application parameter plans. The parameter plans are designed with flexible areas, the lines of flexibility are shown on the plans in blue.

2.5.1 Open Space and Green Infrastructure

Figure 2.34

2.5.2 Land Use

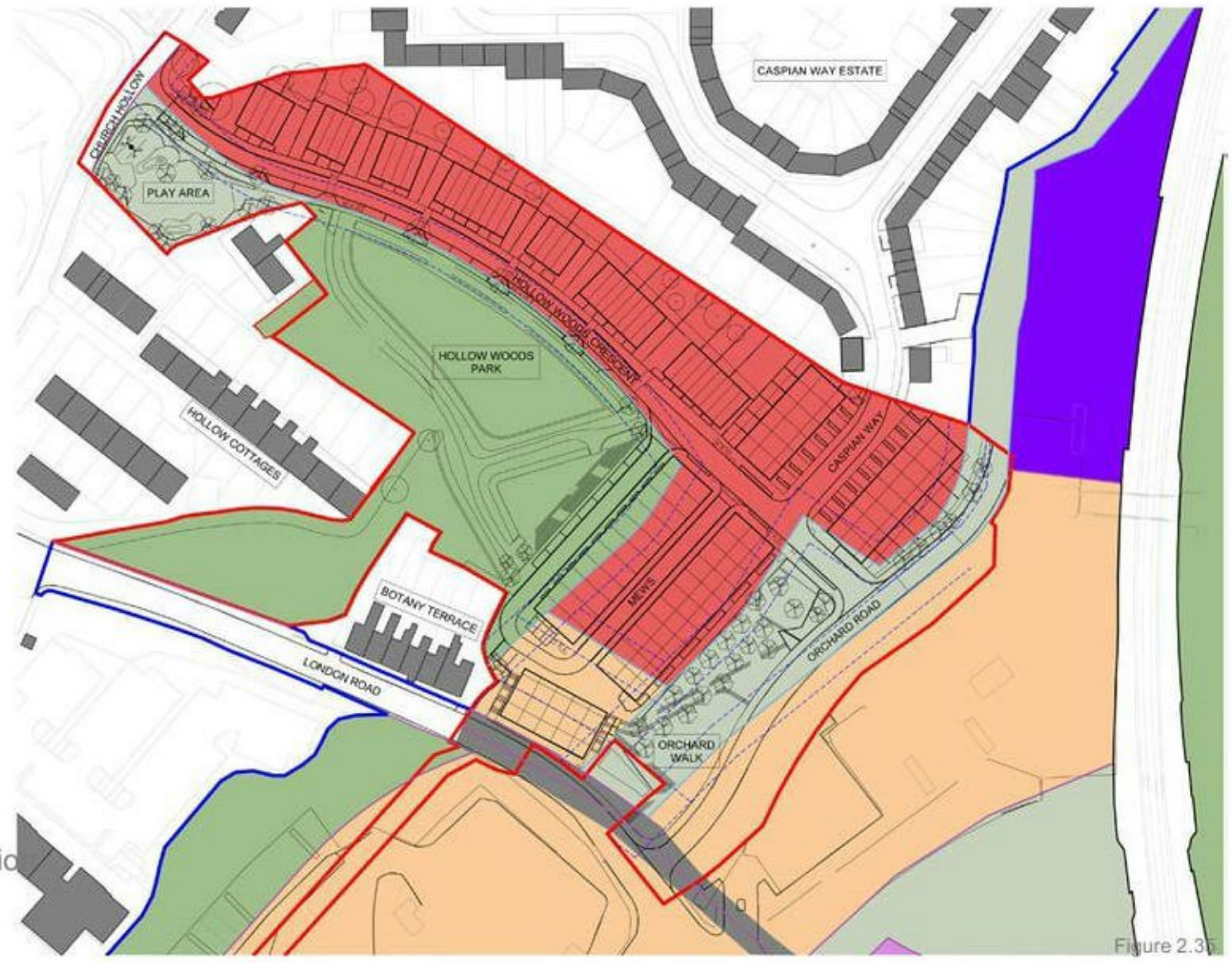
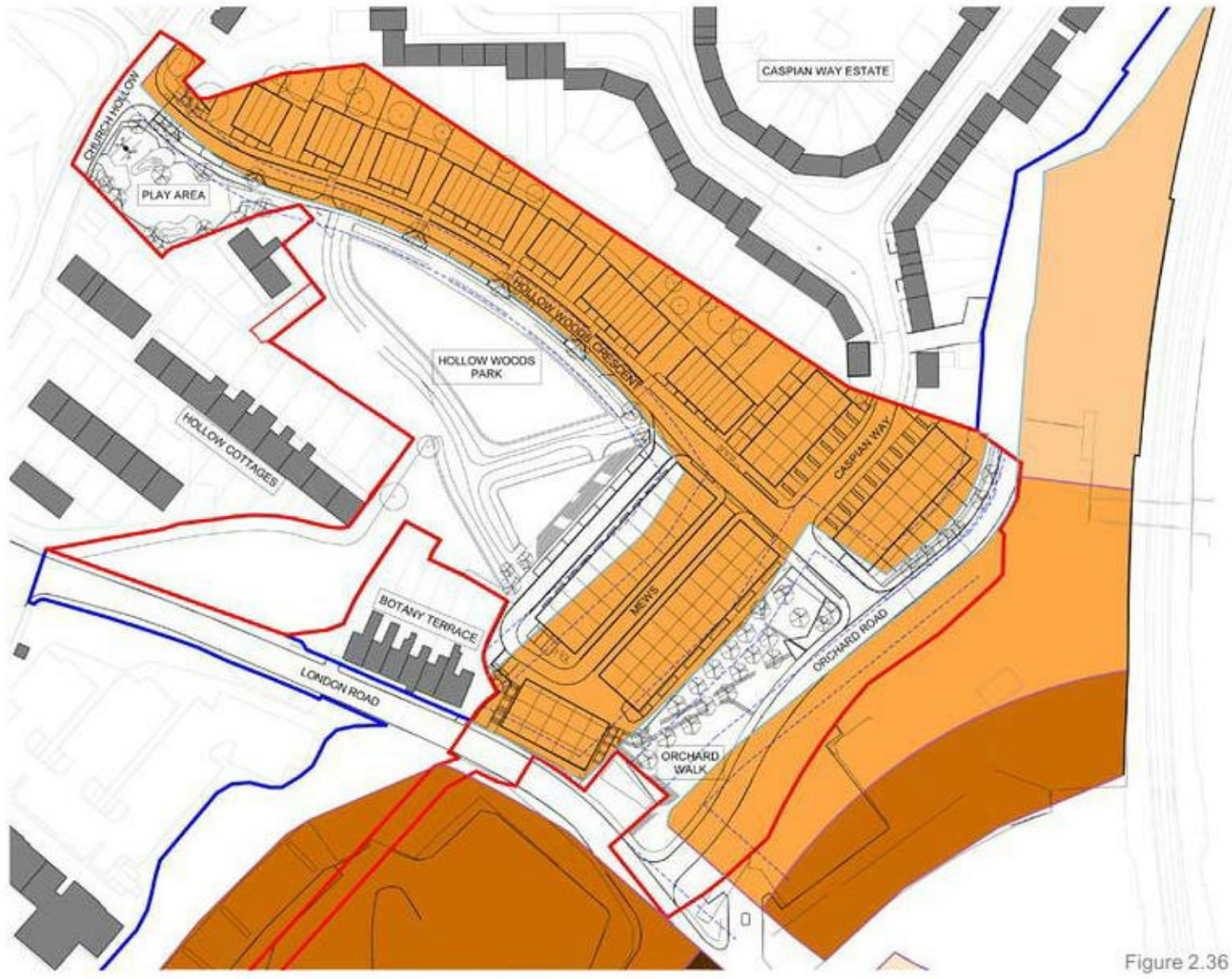


Figure 2.35

Following receipt of more detail site survey information the application boundary to the north of Hollow Cottages was adjusted. It for this reason that in this location the parameter plans extend beyond the proposed development boundary.

2.5.3 Building Heights



KEY

- <8m APL Up to 2 Storeys
- <20m APL, Up to 5 Storeys
- <30m APL, Up to 8 Storeys
- <40m APL, Up to 10 Storeys

(APL = Above Proposed Level)

Figure 2.36

2.5.4 Primary Access

KEY

- Existing Primary Road Network
- Proposed Primary Road Network
- Secondary Site Access
- Cycle Route

Figure 2.37

2.5.5 Residential Density

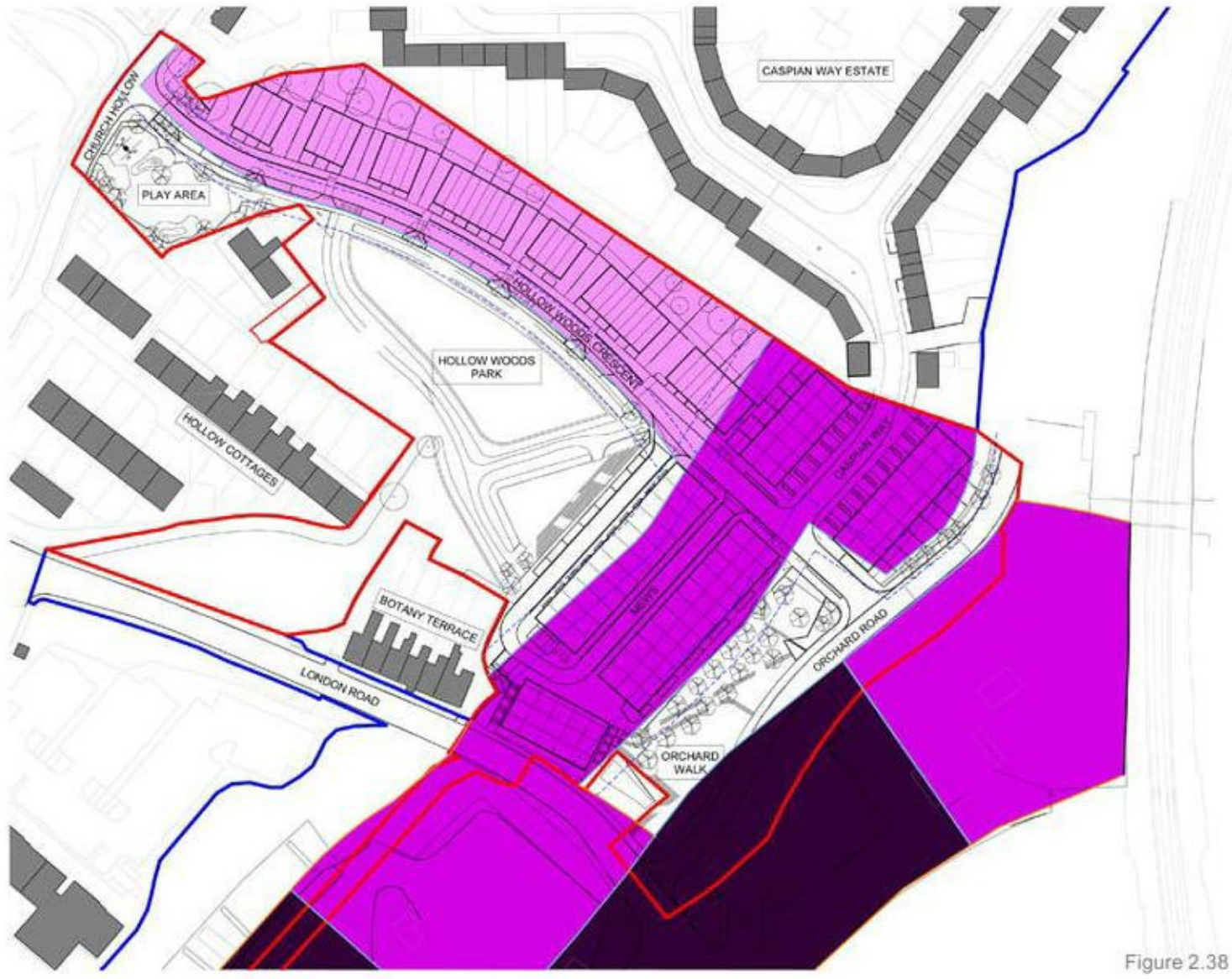


Figure 2.38

Residential Density Tables

Maximum habitable room parameters:

Location	Density (Hab Room/Ha)	Approximate Area (Ha)	Max. Habitable rooms
NORTH	200	0.57	110
SOUTH-EAST	400	0.62	248

Habitable room breakdown:

House Type	No. of Storeys	No. of Bedrooms	Habitable Rooms	No. of Units	Total Hab. Rooms
NORTH					
6	3	3	5	6	30
7	3	4	6	7	42
8	2	2	5	6	30
				19	102
SOUTH EAST					
1	3	2	4	5	20
2	2	2	4	11	44
3	3	3	5	11	55
4	3	3	5	8	40
5	3	3	5	6	30
7	3	4	6	1	6
				42	195
				61	297

2.5.6 Ground Levels

KEY

- +0m to +2.5m AOD
- +2.5m to +5.0m AOD
- +5m to +7.5m AOD
- +7.5m to +10.0 AOD
- +10m to +12.5m AOD

(AOD = Above Ordnance Datum)

Figure 2.39

2.5.7 Road Alignment

The road alignment proposed in this application for Zone 1A is designed to facilitate development. The western edge of the red line application boundary differs in parts from the alignment shown on the parameter plans. The flexible nature of the parameter plans allow for this adjustment in order to facilitate development as only primary access routes are defined.

2.6 Public Engagement Response

One of Purfleet's greatest assets is its strong and thriving community. A community consultation event was held from 15:00-20:00 at St. Stephens Hall in Purfleet on 1st February 2018. The objective of this round of consultation was to:

- Further explain to attendees the contents of the December 2017 outline application.
- Test the emerging design and collate feedback on proposals for Zone 1A

The main event was held as a public exhibition in order to allow attendees enough time to read PCRL's plans and ask any questions. This approach recognised there was a different level of understanding amongst the community and the aim was to ensure as many as possible could engage meaningfully in the consultation process.

The event was very well attended, 143 people formally signed in although it is estimated the actual visitor count is much higher. 33 feedback forms have been received.

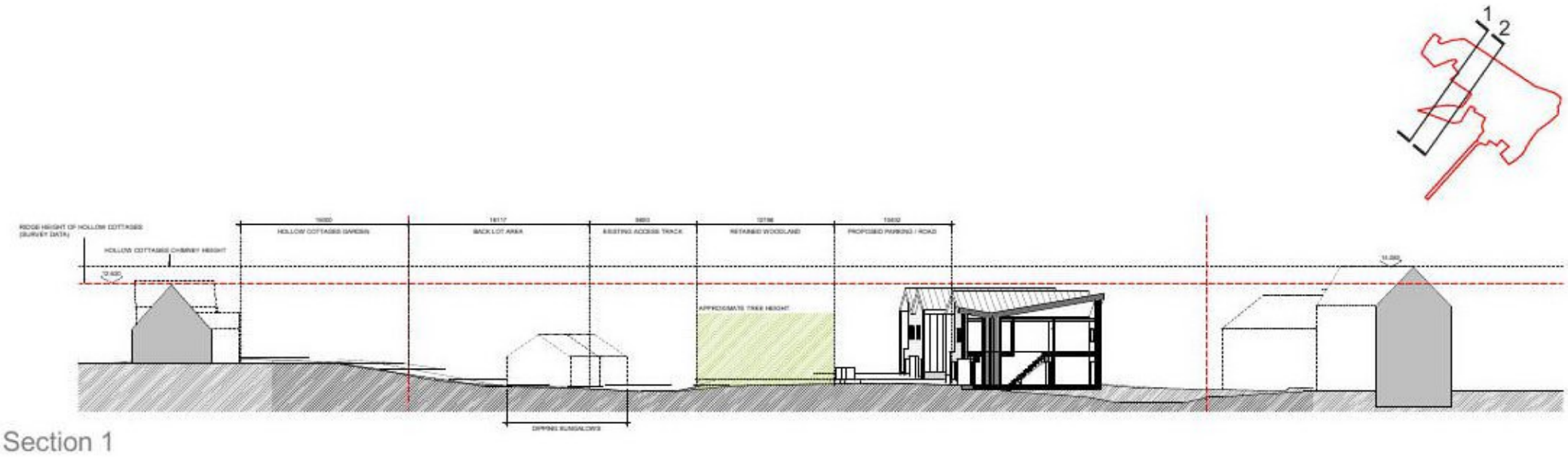
On the whole the responses were incredibly supportive, although there were concerns expressed by residents of Church Hollow regarding increased traffic and the potential to change the area's current environment. Discussion points in regards to the design of Zone 1A were raised and were based on the following key topics:

- Building heights through the woodland areas of the site and the relationship to the rear boundary of Hollow Cottages
- Security and maintenance of proposed play areas and public open spaces.

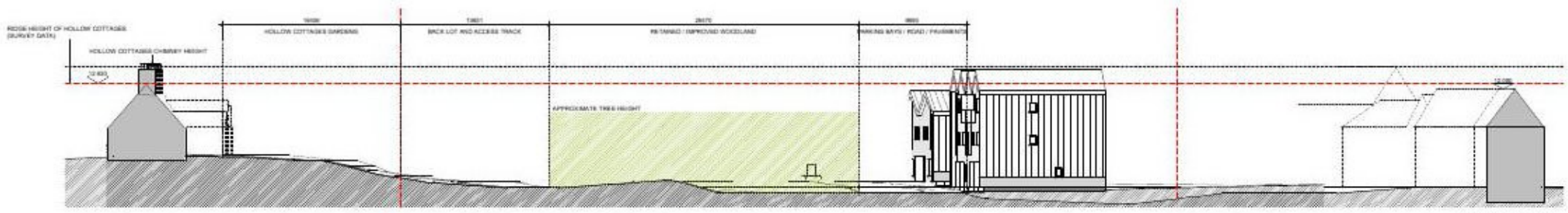
In response to these concerns the design team undertook a number of studies. The sections below detail the relationship between the proposed three-storey buildings within the wooded area and the surrounding context. They demonstrate the height of the proposals is in-keeping with existing context. They also show the width of woodland to be retained with an assumed tree height based on survey information and site investigation.

The layout of the Caspian Way Estate and the arrangement of the proposed houses on Hollow Woods Crescent is such that the majority of the dwellings do not directly face one another, minimising direct overlooking. Where the building alignment is parallel the 'back-to-back' distance is 25 m. The boundary line will be populated with trees to mitigate overlooking.

Residents raised the issue of vandalism of existing play equipment within Purfleet and had concerns about the security of the proposed play areas. These have been noted and a management strategy is being developed. The specification of equipment is appropriate for public spaces and the material choices ensure a high level of durability.



Section 1



Section 2

Figure 2.40

Figure 2.41

CGI: Mews Street

Figure 2.42

2.7 Expected Future Context

2.7.1 Orchard Road

In order to design in relation to expected future context it is important to understand what the imagined context is. The plan below sets out the design team's expectation of the treatment of the eastern edge of Orchard Road. The PCRL illustrative masterplan is used as a baseline in order to establish future strategies.

The adjusted road alignment has an effect on the illustrative town centre development. The flexible nature of the masterplan and the parameter plans allows for such adjustments as long as the over-arching principles of the masterplan are still upheld, such as permeability, key views, and building lines meeting London Road to form a gateway.

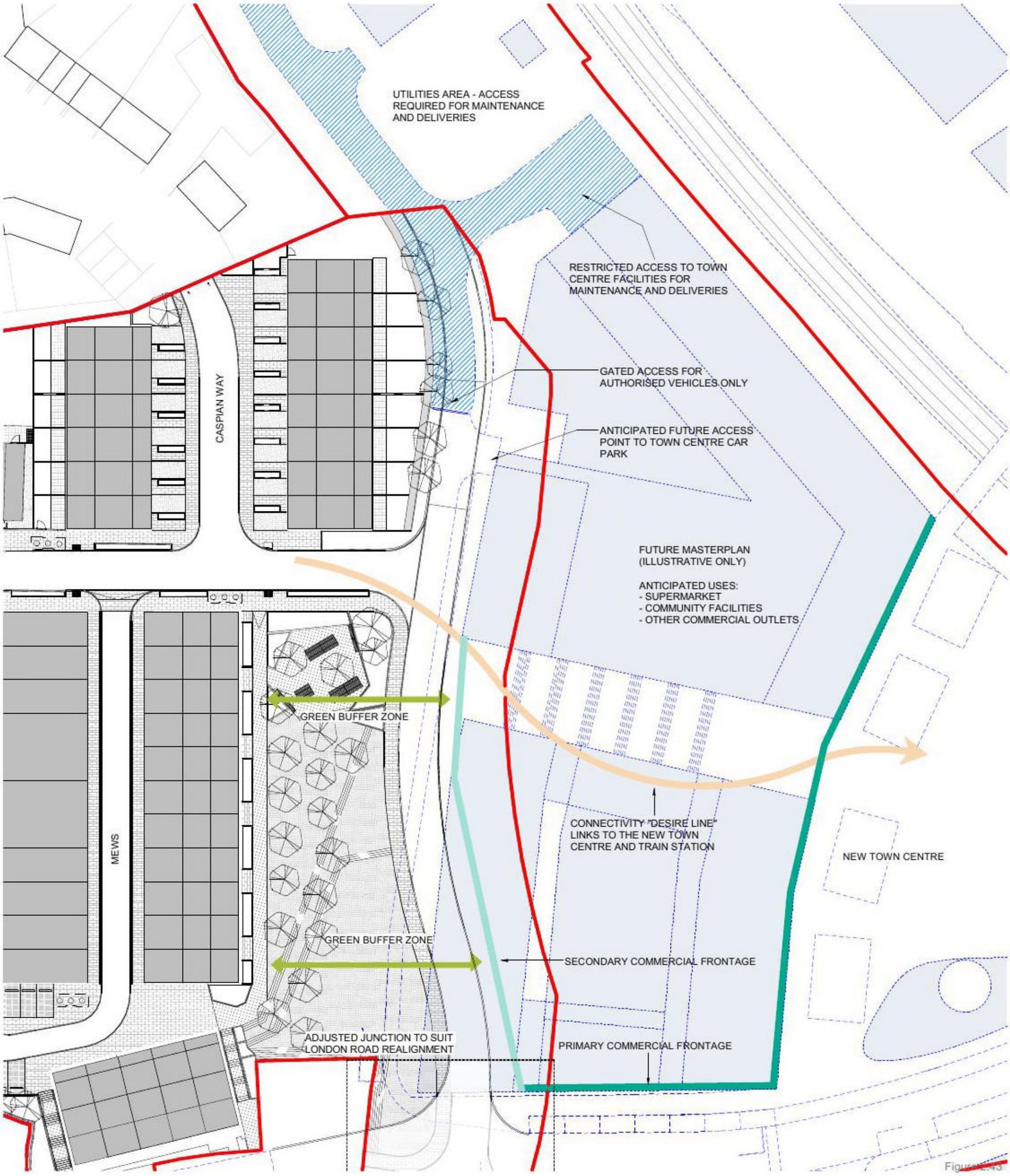


Figure 2.43

2.7.2 Purfleet Gateway

As the primary route through Purfleet, London Road is a key element of the PCRL masterplan. The Purfleet Gateway marks the town centre to those arriving from the west. It is envisaged that arrival in the town centre will be highlighted through material treatment, landscaping and building massing. It is important to the design team to maintain a landscape element within this gateway in order to ensure the strong network of open spaces within the Purfleet masterplan is identified at this key intersection. The network of open spaces is also fundamental to the preservation of the Purfleet Conservation Area and to promoting healthy lifestyles.

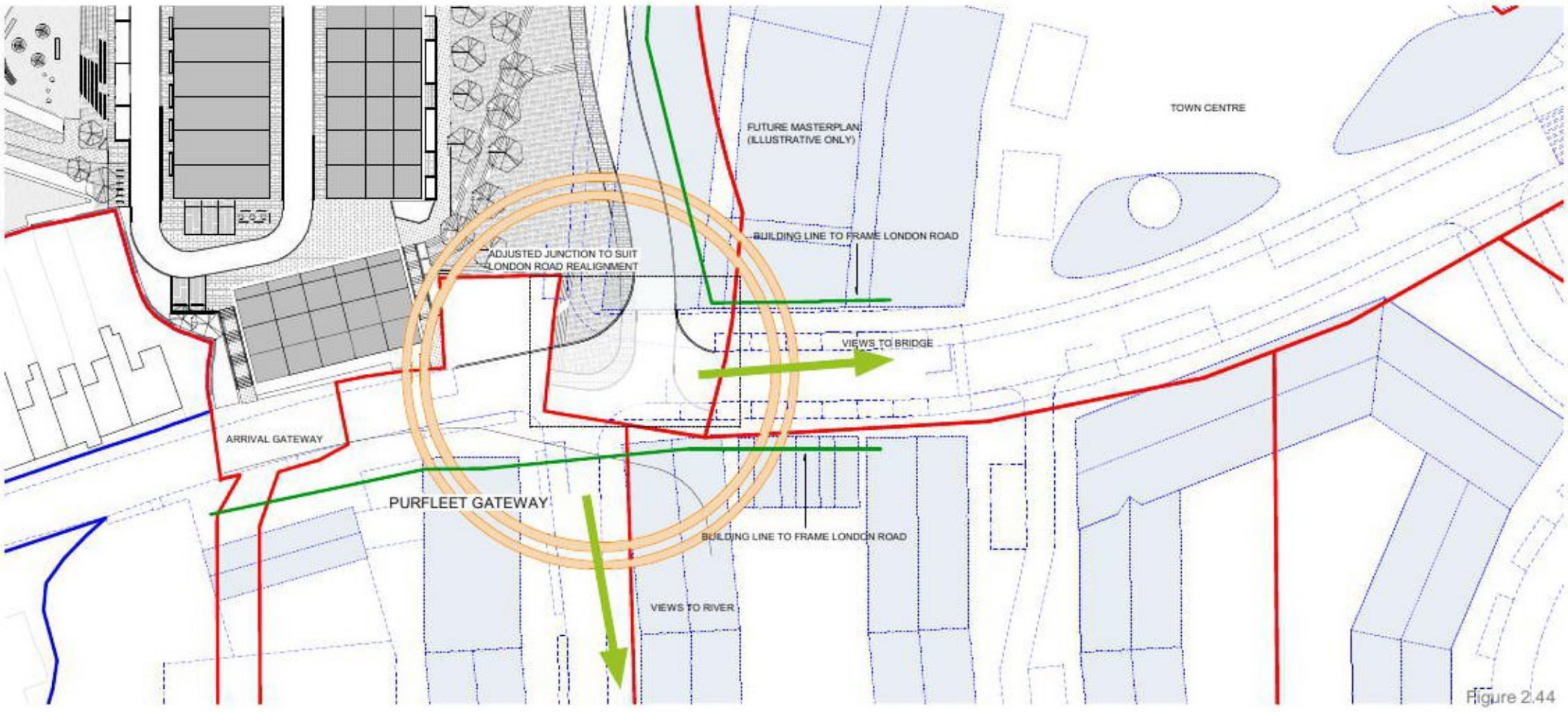


Figure 2.44

Key items that will identify the Purfleet Gateway:

- A defined corner to the town centre massing
- Framed views to the river and the bridge
- A transition in building mass to a more urban development
- A defined building line and legible streetscape.

The Purfleet Gateway on London Road

Figure 2.45

Landscape

3.1 Landscape Vision and Approach

3.1.1 Introduction

Landscape has a significant role within the Purfleet Centre Regeneration in unifying building zones and infrastructure within an ecologically, culturally and historically diverse context.

The following chapter sets out the intended approach to developing landscape elements within Zone 1A. This approach assesses the key site wide landscape considerations and explores the manner in which the main landscape elements that are applicable to Zone 1A may be developed within this area as part of the development progression.

The landscape Vision for Purfleet Centre Regeneration draws inspiration from three significant 'themes' that have been used to guide and inspire a landscape response to Zone 1A of the site.

These are illustrated below and are summarised as: A creative core, botanical exploration and historic industry.

Figure 3.1

A Creative Core

The idea that Purfleet can culture a 'Creative Core' draws on the presence of existing and planned 'creative industries', such as The Royal Opera House High House Production Park and the planned Film Studios.

The Landscape represents a platform for creative expression though integrating and showcasing artistic endeavours and creative approaches. The Creative Core can help establish 'character' and 'identity' for new and existing communities and underpins how a sense of place can be established.

Landscape is a platform for the exposure of local cultural and artistic expressions.


Figure 3.2

A Botanical Exploration

Since the Renaissance and the Age of Enlightenment the increase in sea voyages from England to Asia, the West Indies and the New World returned botanical treasures to the large public, private, and newly established botanic gardens, and introduced an eager population to novel crops, drugs and spices.

The Thames was a major route for these voyages and Purfleet was the site of a Botanical Gardens developed by the Whitbread Family and used as a pleasure garden destination for the residents of Thurrock and Greater London.

Purfleet is a location where the notions of global exploration, botanical learning, conservation and ecology, and enjoyment of nature/botany can be integrated and cultured through landscape.


Figure 3.3

Historic Industry

Past occupation and industrial uses on the site have scarred, shaped and imprinted a historical trace of past industry into the landscape. The quarrying of limestone and successions of dock side activities are local historic industries that form a tangible link to the past and represent narrative that can be retold through being integrated into landscape and development considerations.

Landscape is the text in which links to the historic past can be told.

3.1.2 Landscape Objectives

In developing a meaningful and appropriate response to Zone 1A, a number of landscape objectives have been set to guide the development and ensure an integrated approach within the overall Masterplan. These are summarised below as:

- Reinforcing Purfleet as a place that can foster interaction between new and existing communities through good linkages, diversity of spaces and provision of complimentary public space both to the new and the existing communities;
- Develop and design in a way that acknowledges Purfleet's riverside setting and draws on appropriate vernacular for landscape expression and identity;
- Make spaces and routes easily accessible and navigable with a strong emphasis on natural orientation and legibility;
- Development of a design that is fully considered in regards to the future adjacent development Zones;
- Locate value to ensure a 'core of quality' exists throughout the scheme;
- Protection, conservation and enhancement of local ecologies and promotion of biodiversity, where appropriate, as an integrated approach to the development;
- Establishing a series of landscape characters for the varying parts of the Zone to ensure the diversity of existing site characteristics are preserved, promoted and integrated as part of the local character of the site.

Figure 3.4

3.2 Landscape Masterplan

Figure 3.5

1. Play Area
2. Hollow Woods
3. Swale
4. Woodland Play
5. Access way to be retained
6. Orchard Walk
7. Ecological wall
8. Orchard Seating Area
9. Mews Street

3.1.2 Landscape Concept

The development of Hollow Woods in Zone 1A offers the opportunity to create stronger linkages across the site, creating a more inclusive interface with the existing residential development to the north and making improvements to an area of woodland that has low ecological or conservation value.

The key landscape aims include:

- Provision of new amenity green spaces in an area where there is little to no formal access. As this area is currently heavily wooded and of little ecological and conservation value the introduction of new amenity space will allow this area to be used more by local residents;
- The two TPOs will be protected and incorporated into the proposal within Hollow Woods (TPO 8/92 (T3) Sycamore, TPO 8/92 (T4) Ash);
- Development will enable the existing woodland to be better maintained, managed and improved with additional planting, canopy clearance and under planting to create a more diverse woodland habitat;
- The creation of wide 'rides' (paths) up to 2 metres in width laid using a bark surface. Mixed herbaceous and shrub planting zones are proposed on both sides, introducing sunlight and adding plant diversity as well creating additional interest for recreational activities.
- Making new accessible links to London Road to Hollow Woods, for the existing residential area as well as the proposal.
- Provision of a locally equipped area for play (LEAP) to the west of the Wood. This is to be a mixture of prescriptive play elements and woodland themed imaginative play elements and will make a positive link between new and existing communities.

3.3 Landscape Strategies

3.3.1 Movement and Access

The strategy for access, movement and circulation within Zone 1A looks to provide efficient, effective local and external links across the site for future and existing residents, and visitors of Purfleet.

Roads and accessways have generous sidewalk and walkway widths, supported by planting and street trees to facilitate and improve conditions for walking or cycling. The routes have been focused along streets which offer a high degree of natural surveillance and ensure a high level of public safety within the public realm.

In accordance with the wider masterplan strategy for access and movement, all gradients are in accordance with Part M of the building regulations. Key local links include between residential units and Hollow Wood and between residential units and London Road.

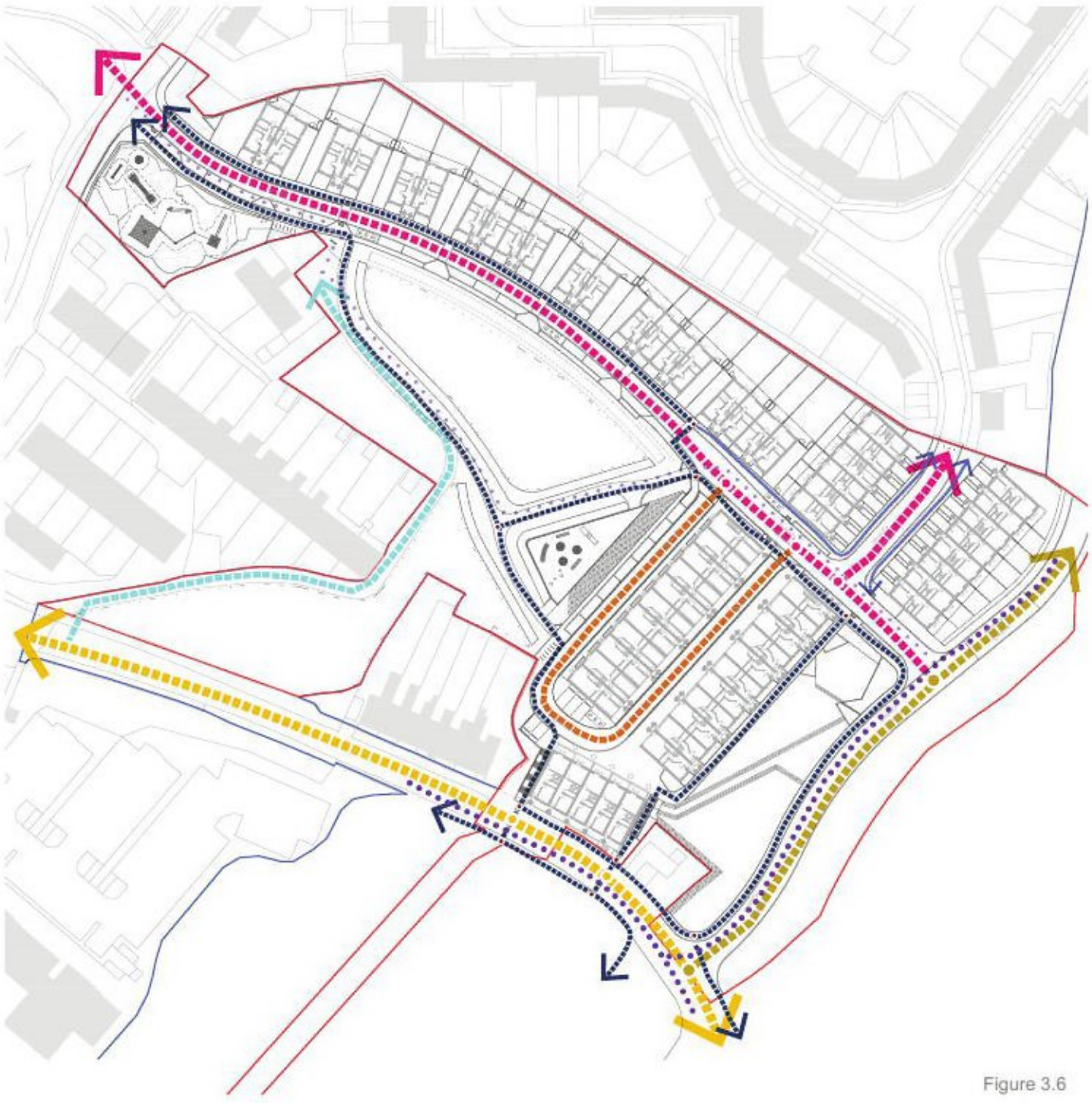
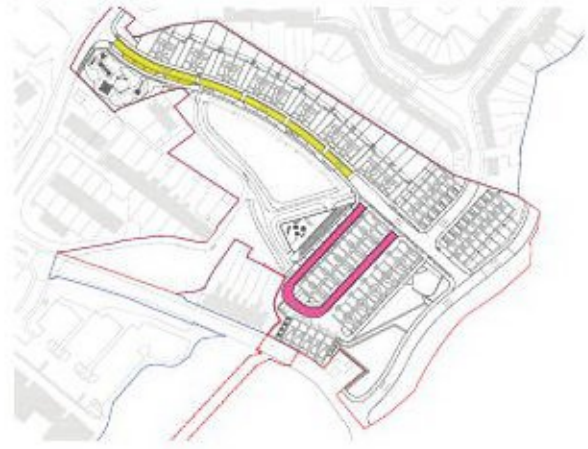


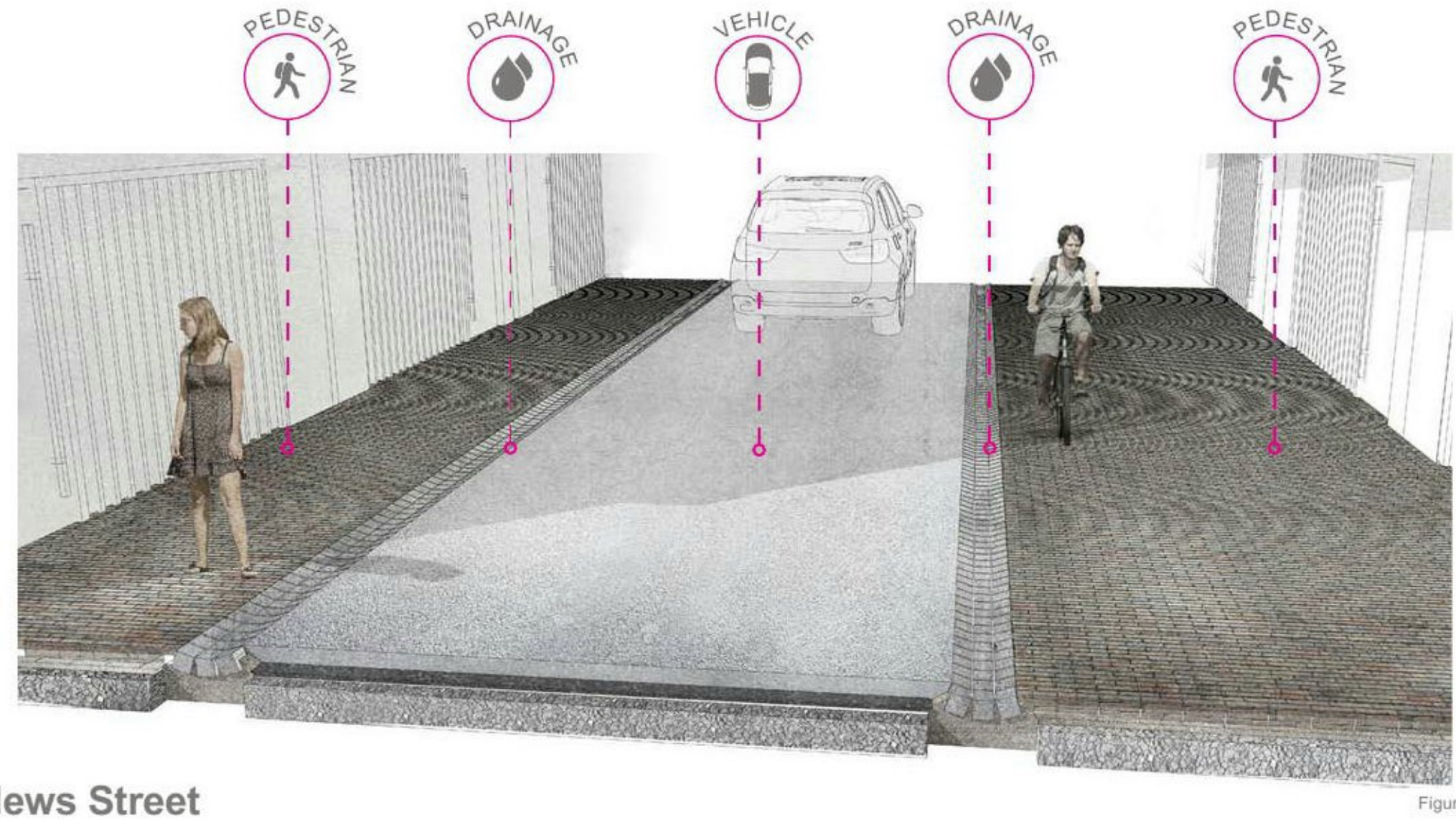
Figure 3.6

3.3.2 Illustrative street sections

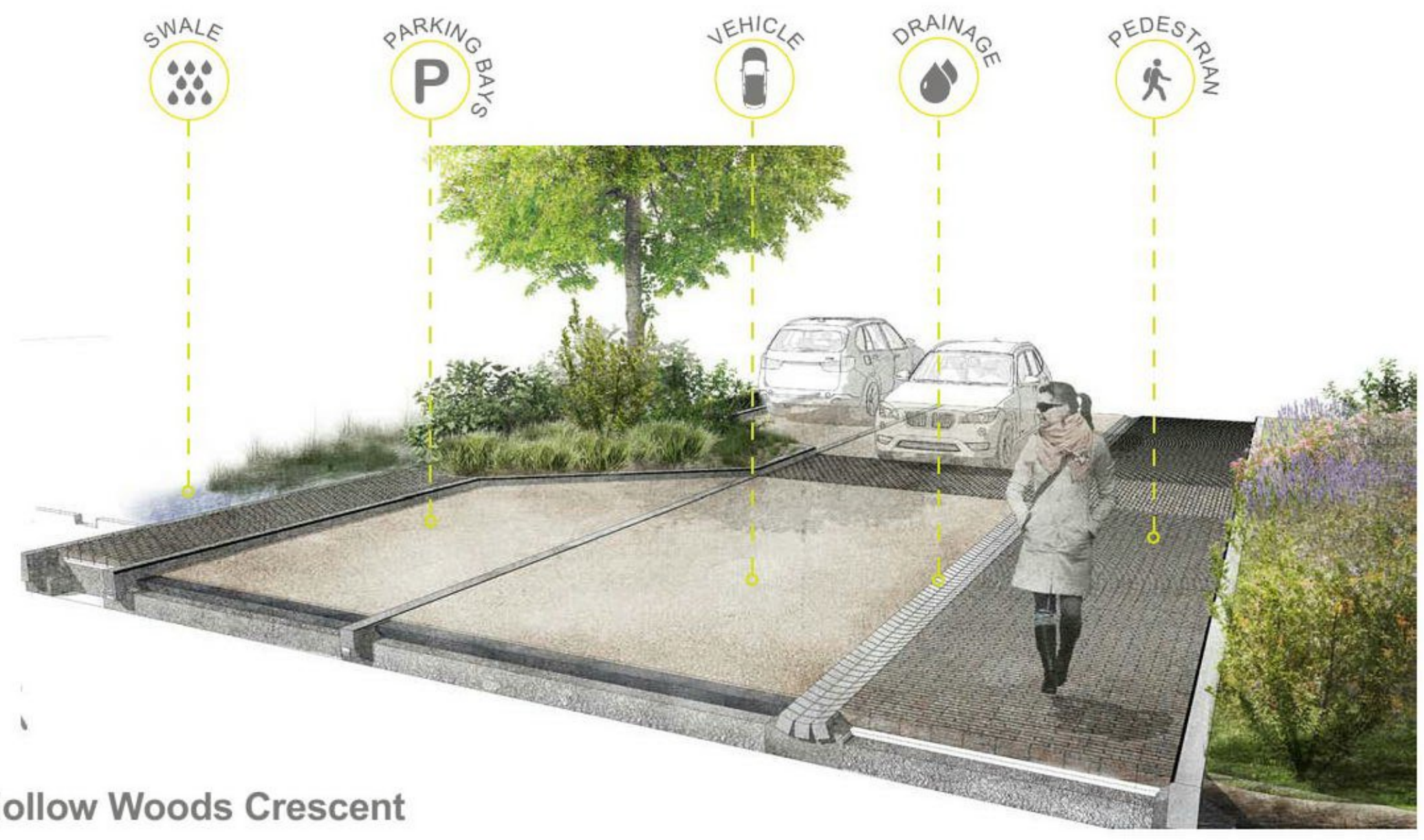
The Mews Street is based on the traditional street typology with a shared/flush surface that balances the access and service functions of a lane with active building frontages. We anticipate the Mews could also be a space for community events such as street parties.

Hollow Woods Crescent runs along the northern edge of Hollow Woods. On street parking is provided with intergrated soft landscaping and street trees. A swale runs the length of the street providing sustainable urban drainage for road runoff.





Mews Street



Hollow Woods Crescent

Figure 3.8

3.3.3 Spatial Typologies

The landscape typologies for Zone 1A divide the site into areas of interrelated character. These include three key public areas, the Play Area, Hollow Wood, and Orchard Walk. Each of these typologies will assist in the creation of a unique sense of place for future residents and visitors of Purfleet. The use of quality materials, planting and legible spatial arrangement will ensure a livable development is created.

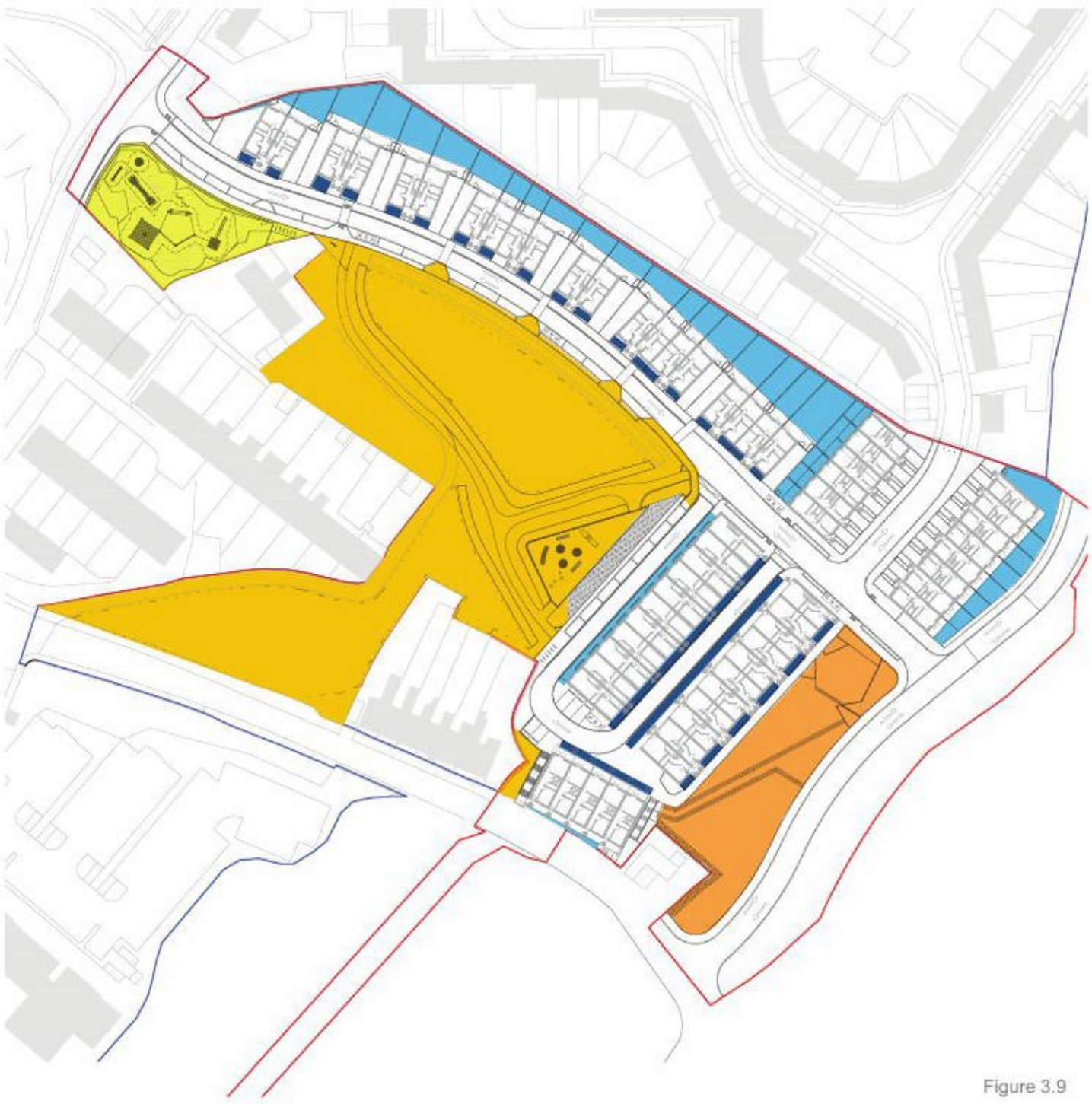


Figure 3.9

3.3.4 Play Strategy

The provision, location and types of play within Zone 1A are in accordance with the wider play strategy set out in the outline masterplan. The play strategy for Zone 1A includes a locally equipped area for play (LEAP) in the north west section of Hollow Woods. The play area is centrally located here so that it is accessible to both new and existing residents. A range of natural play elements and earth mounds and hollows are included within the place space in accordance with its setting.

An informal play space is provided on the eastern edge of Hollow Woods (LAP).

The play strategy is based upon guidance set out in the Fields in Trust document 'Guidance for Outdoor Sport and Play -Beyond the Six Acre Standard' October 2015. Based on 61 units for Zone 1A with a child yield of approx. 30.5, there is a recommended play provision of 77m2.

The current proposal accommodates a total play provision quantum of 400m2 and is made up of the following:

1 x LEAP

1 x LAP

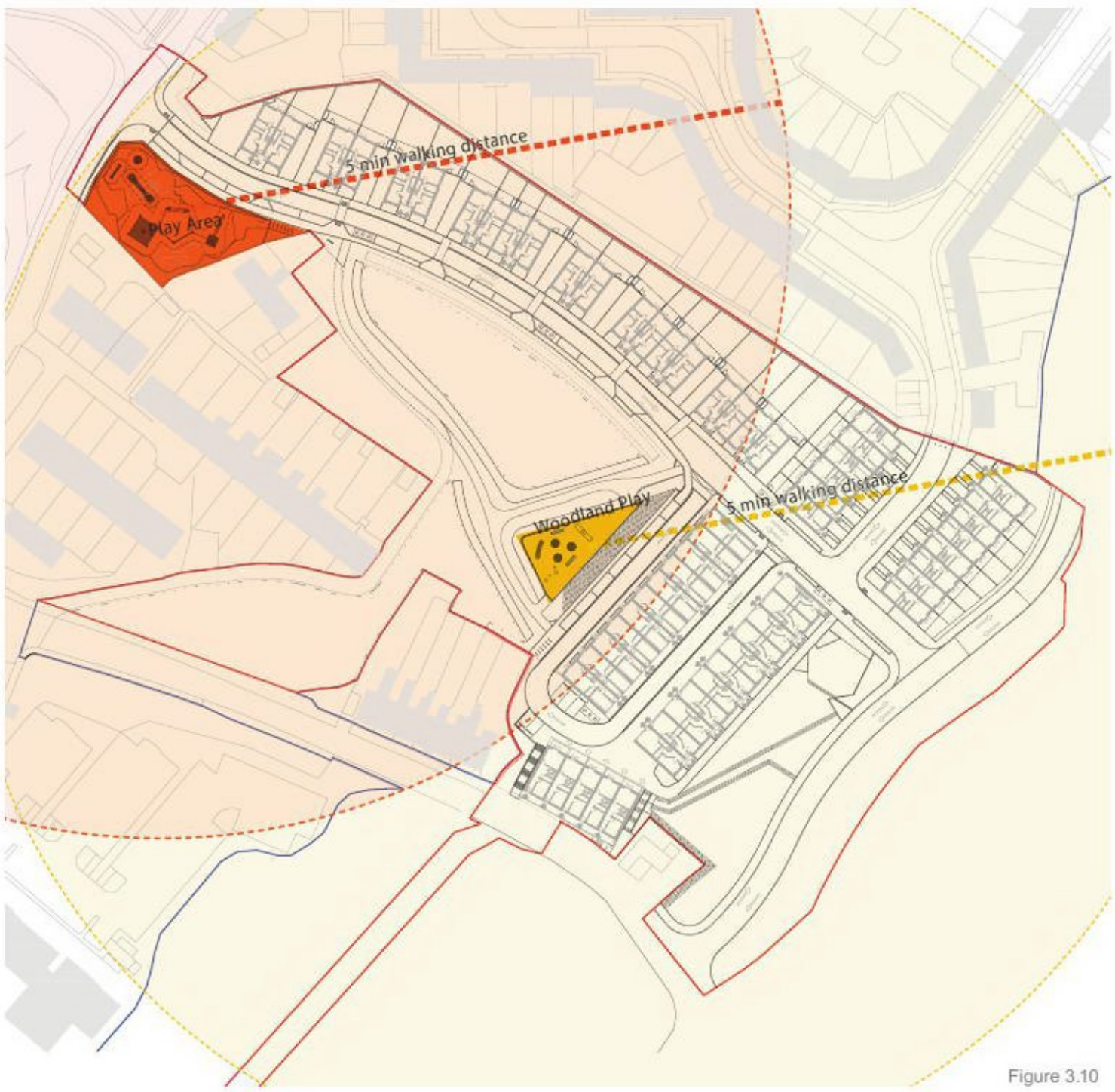


Figure 3.10

3.3.5 Planting Strategy

The planting aspect of the proposal draws on Purfleet's botanical history as well as the existing ecological context and valued fauna of the site.

Plant species have been chosen to enhance ecological diversity, define spaces, create thresholds into and within the site, soften the appearance of hard landscape elements, help create variation in character, and provide a variety of colour and texture throughout the seasons.

The following principles have been applied to the planting strategy:

- The selection of plants has taken into consideration species currently found on site as well as the rich regional ecological context. Diversity and arrangement of amenity and street tree plantings is reflective of the botanic gardens history of Purfleet.
- The location of habitat types and associated selection of plant species is appropriate to their location in terms of soil type, micro-climate and their setting and future maintenance requirements.
- Plant species within the Play Area and Orchard Walk areas have been selected with consideration given to the eventual scale of the species in relation to the function and use of the spaces.
- Tree and shrub planting in streetscapes uses planting to articulate space, by framing views, celebrating entrances, and thresholds and defining pedestrian routes, connections and vehicle movements.

Figure 3.11

3.3.6 Tree Strategy

Trees play a vital role in our environment, benefiting health and boosting wildlife. It was key for this scheme to use species that would not only work visually, but also provide a functional use. The planting strategy draws on Purfleets rich botanical history as well as the areas existing ecological context. The species of trees that are considered for Purfleet Zone 1A can be currently found in Hollow Woods and it was important to retain that character within the urban fabric.

An avenue of Malus, defines the entrance to Hollow Crescent. Tillia cordata is proposed along the road side providing four main functions; to separate the parking bays; slow traffic; providing a buffer to the woodland and acting as a sense of navigation.

An orchard is also integrated in the development, drawing upon Purfleet's botanical past, providing areas for the community to pick fruit and creating an area for the community to meet. A variety of trees have been used here from Malus and its important pollinators; to Pyrus and Prunus for other selections of fruits.

Thinning and coppicing to Hollow Wood would be required to allow for healthier growth to existing tree species. A future management regime for Hollow Wood is proposed encouraging community involvement.

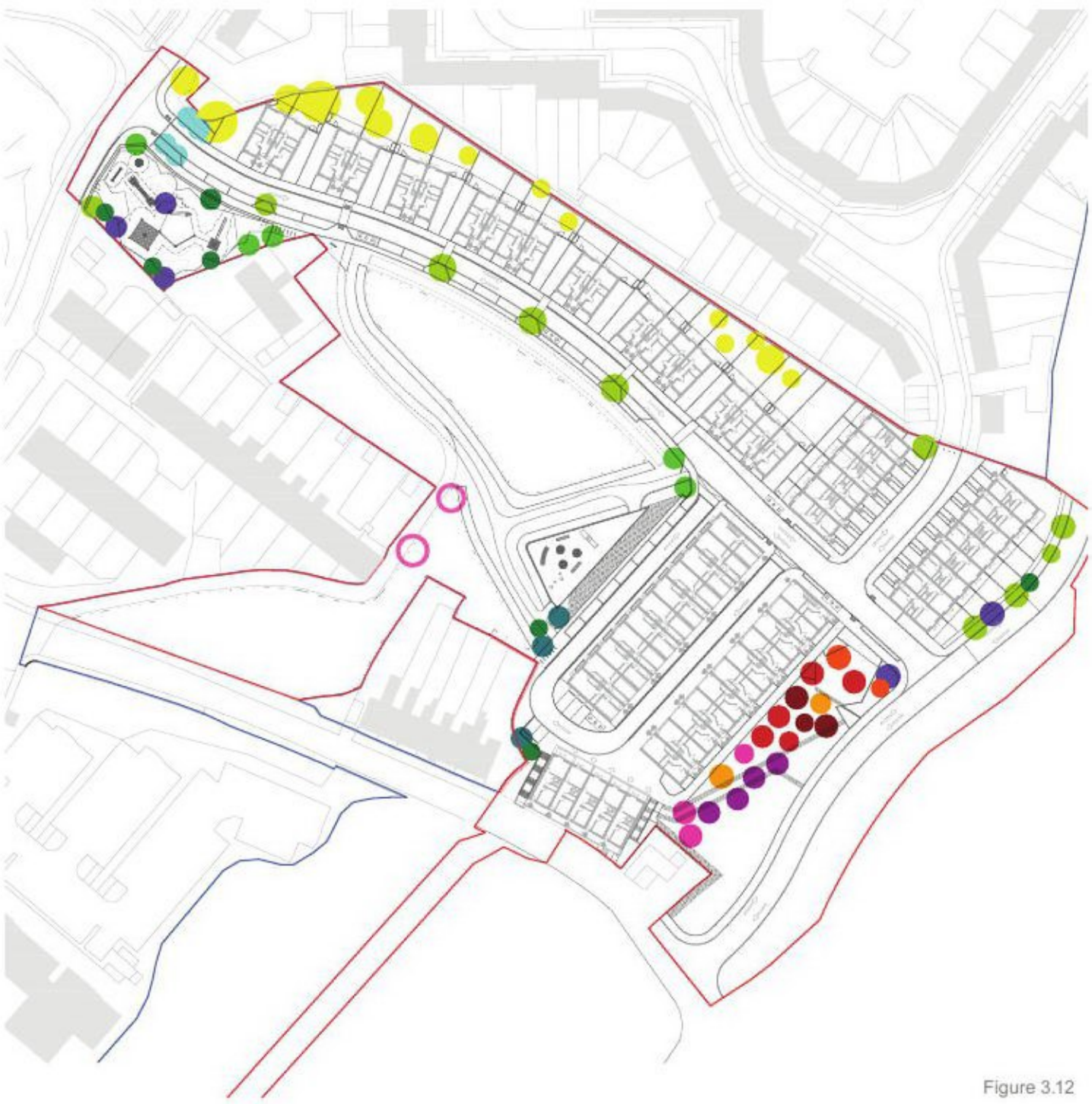


Figure 3.12

- Existing tree to be retained
- Tillia cordata 'Greenspire
- Quercus robur
- Acer campestre
- Betula pendula Dalecarlica
- Pyrus communis 'Beth', 'Conference', 'Beth', Louise Bonne of Jersey'
- Ginkgo biloba
- Prunus species
- TPO Trees to be Retained
- Malus domestica 'Adam Pearmen' Polinators: 'Bardsey', 'Barnack Beauty'
- Malus domestica 'Sunset', Polinators: 'Early Victoria'
- Malus evereste (Good Pollinator for other Species)

3.3.7 Planting

Mixed- Deciduous Avenue Trees

Key species may include:

Acer campestre (Field Maple), Betula pendula (Silver Birch), Ginkgo biloba (Maidenahair), Quercus robur (English Oak), Tilia cordata (Lime)


Acer campestre


Betula pendula


Ginkgo biloba


Quercus robur


Tilia cordata

Orchard Walk fruit trees

Species may include:

Malus domestica (Apple var.), Malus sylvestris (Common Crab Apple),Prunus padus (Bird cherry), Prunus ceraus (Wild cherry), Pyrus communis (Common pear)


Malus domestica


Malus sylvestris


Prunus cerasus


Pyrus communis

Ecological Walk through Existing Woodland

Native woodland at Hollow Woods is retained, enhanced and new areas of Woodland are planted. Species to be used will draw on the W8 woodland community (Fraxinus excelsior-Mercurialis perennis), which is a typical climax woodland community of calcareous soils in the lowlands.

Species may include:

Larger Shrubs: Carpenteria californica (Bush Anemone), Corylus avellana (Common Hazel), Rubus fruticosus (Blackberry), Viburnum bodnantense “Dawn” (Arrowwood)

Mixed Species: Anemone nemorosa (Wood Anemone), Ophiopogon planiscapus ‘Nigrescens’ (Black Lilyturf), Polystichum setiferum (Soft Shield Fern), Primula vialii (Orchid Primrose)


Carpenteria californica


Corylus avellana


Rubus fruticosus


Viburnum bodnantense dawn

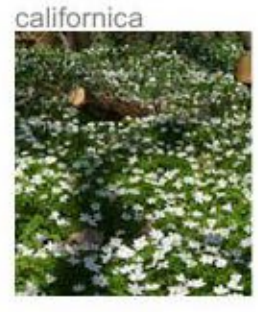


Figure 3.13

Biodiverse Amenity Planting Beds

Planting in general planting beds would visually soften the hard landscape elements, define spaces and help create a high quality setting. Primarily this palette will use sedges and grasses at the riverfront, as well as in courtyards and rain gardens for Zone 1A.

Species may include:

Agastache foeniculum (Anise Hyssop), Berberis thunbergii (Japanese Barberry), Campanula poscharskyana (Serbian Bellflower), Cornus sanguinea 'Midwinter Fire' (Dogwood 'Midwinter Fire') Lavandula angustifolia (Lavender), Liriope muscari (Lilyturf), Stachys byzantina (Lambs' Ears), Tiarella cordifolia (Foam Flower)


Agastache


Berberis thunbergii


Campanula


Cornus sanguinea


Lavandula


Liriope muscari


Stachys byzantina


Tiarella cordifolia

Rain Garden and Swale Planting

Species may include:

Acorus gramineus 'Variegatus' (Variegated Japanese Rush), Ajuga reptans (Bugle), Allium giganteum (Giant Ornamental Onion), Carex pendula (Pendulous Sedge), Crocosmia 'Emberglow' (Montbretia 'Emberglow'), Iris pseudacorus (Yellow Flag Iris), Juncus effusus (Soft Rush), Molinia caerulea 'Variegata' (Variegated Purple Moor Grass), Myosotis scorpioides 'Maytime' (Water Forget-me-not 'Maytime'), Phragmites australis (Common Reed), Verbena bonariensis (Argentinian Vervain), Vinca minor 'Atropurpurea' (Purple Lesser Periwinkle)


Acorus gramineus


Ajuga reptans


Allium giganteum


Carex pendula


Crocosmia 'Ember'


Iris pseudacorus


Juncus effusus


Molinia caerulea


Myosotis


Phragmites australis


Verbena bonariensis


Vinca minor

Species Rich Wildflower Meadow and Lawn

Wildflower mix incorporating diverse, native, nectar-rich species on low-fertility soils. Species of local provenance should be introduced (collected from site where appropriate) and tendered to establishment.

Mix to include wildflower species which are specific to chalk soils:

Achillea millefolium (Yarrow), Daucus carota (Wild Carrot), Galium verum (Lady's Bedstraw), Knautia arvensis (Field Scabious), Leontodon hispidus (Rough Hawkbit), Primula veris (Cowslip), Ranunculus acris (Meadow Buttercup) Scabiosa columbaria (Small Scabious)


Achillea millefolium


Daucus carota


Galium verum


Knautia arvensis

Figure 3.14

3.3.8 Ecology Strategy

The ecological mitigation strategy for Zone 1A is in accordance with the site-wide mitigation strategy set out in the Outline Masterplan. Specifically to Zone 1A, existing habitat includes:

- Lowland mixed deciduous woodland (Hollow Woods) (1.5Ha)
    - *Native woodland areas related to the W8 woodland community (Fraxinus excelsior-Mercurialis perennis), which is a typical climax woodland community of calcareous soils in the lowlands*

Zone 1A is the first sub-zone to be developed. Subsequent development zones across the site would be constructed over an anticipated period of 14 years, with development zones proceeding both in isolation and concurrently (subject to final delivery strategy).

While the total balance, location and type of habitat will shift throughout the 14 year period, the incremental approach to development looks to retain existing habitat areas within subsequent development zones through to completion. As such, during construction and development of Zone 1A, the strategy ensures that a substantial quantum of existing habitat is retained across the wider site. Of particular note are the expansive areas of open mosaic habitat in the riverfront area, both within the remainder of Zone 1, and in development zones 7 and 8, which will be retained during Zone 1A development.

Zone 1 existing habitat and order of development

Figure 3.15

Zone 1A development: Site-wide habitat balance

Figure 3.16

Lowland mixed deciduous Woodland

Open Mosaic Habitat

Grassland

Habitat type lost to development

Habitat retained and enhanced

Habitat retained

New habitat created

Proposed habitat areas

The habitat areas in Zone 1A are in accordance with those explained in detail in the Outline Planning Application.

Proposed lowland mixed deciduous woodland areas in Zone 1A includes a significant portion of the existing Hollow Woods, which is to be enhanced and made safe and accessible to the public. All new woodland planting will use native species of local provenance in order to increase quality and diversity of productive edge habitats. Existing woodland areas are to be thinned out of their understory to reveal the woodland floor, with large trees and significant native trees retained. All woodland areas are to be managed through to maturity and beyond.

During the development of Zone 1, local seeds are to be collected and propagated, as many locally valuable species will not be readily available from suppliers, namely Narrow-leaved bird's-foot trefoil, Yellow-wort and Black horehound.

The proposed wildflower meadow within Zone 1A will serve as the exemplar meadow for habitat rich wildflower areas throughout the development, using locally propagated seeds of high invertebrate value.

The 'Orchard Walk' neighbourhood park draws on the botanic history of Purfleet and provides a community resource, while also providing a valuable food source for wildlife.

Figure 3.17

Key	Species	Feature/ quantum	Location
	Swift (Apus apus)	1. 20 boxes integrated with architectural details	Dispersed throughout Zone 1, positioned to maximise spatial distribution. Integrated nest box within the cavity wall construction of the buildings. Nest boxes will be provided in line with recommendations from the Swift Conservation Organisation. Boxes/bricks to be fitted either on a side of the building that gets some shade during the day, or under an overhang or under the eaves, to give protection from heat, but not over windows or near to vents. They should be sited at least 5 meters above ground, with clear adjacent airspace so the Swifts can access them in high-speed direct flight (they usually fly straight in and out). Make sure that predators (cats, crows, magpies, squirrels, and rats) do not have easy access (e.g. by climbing up creepers or flying in from close perches).
	House Sparrow (Passer omesticus)	2. 10 boxes integrated with architectural details	Dispersed throughout the development, positioned to maximise spatial distribution. Integrated nest box within the outer leaf of the external wall construction of the buildings. Nests to be located in proximity to scrub, hedgerows / private gardens with soft estate. Locate boxes towards building eaves > 2 m in height. Locate integrated nest on any aspect avoiding prevailing wind direction.
	House Martin (Delichon urbicum)	3. 10 nest boxes integrated with architectural details	On residential blocks on Orchard Crescent. Double front external nest box, provided on the outside of the building façade. Artificial nests are best placed in groups, especially near existing nests i.e. lost BPB nest sites. There is some evidence that martins prefer to nest on north and east facing walls. Locate away from windows and doors. Colonial nesters, thus 5 – 10 boxes per building above 2 m in height. Typically placed at eaves, architect to look into providing suitable facing media detail local to artificial boxes to mimic rough stone / sawn timber to provide additional opportunities.
	Bats	4. 10 integrated bat boxes	Focused on buildings near Hollow Wood. Locate boxes near vegetation features such as hedges/tree lines and away from thoroughfares. Minimum 2m, but preferably 5-7m above ground. Avoid placement above windows, doors and wall climbing plants (reducing likelihood of predators like cats).
		5. Wood piles	Within GI network, utilising matter where existing woodland is to be cleared including log piles and standing deadwood.
		6. Provision of refugia	A range of types distributed across site to attract a wide range of invertebrate. Types to include including hibernaculum, rubble, earth matter piles, bug hotels etc. Across GI network, particularly focused in vegetated areas.
	Commu-nity en-gagement zones	7. Interpretation panels and site program elements	Focused around ecological areas; Hollow Woods, wildflower meadow and orchard walk (birds). Interpretation panels relating to on site habitats as well as the ecological context, areas for hosting ecological events such as; wildflower seed distribution/handouts, learn how to build bug hotel, areas for engagement with local schools education facilities, and informal exploration of habitats.

1. Integrated Swift bricks

2. House Sparrow bricks

3. House Martin boxes

4. Bat boxes

6. Hibernaculum/ refugia

7. Community engagement

Retaining Ecological Wall / Cladding

Ecological retaining walls to be filled with chalk to reference geological context and provide invertebrate habitat

3.3.9 Blue Infrastructure Strategy

The proposed SuDs scheme has been incorporated within the design of Purfleet Zone 1A, which encourages the integration of cultural and natural systems. These play an essential role in reducing the strain on the main stormwater infrastructure, filtering contaminants, infiltrating rainfall and preventing excessive erosion. The SuDs scheme is designed to replicate, restore and protect processes of natural water systems. It was important to take an aesthetically rich design approach and at the same time, for it to work, as a storm water system. We have achieved this through a series of swales, rain gardens and filtration trenches located around the site (as illustrated in the diagram below). Open channels are formed by the use of setts allowing the experience of water movement through the urban fabric. It was key to improve the biodiversity and further, strengthening key existing habitats in the area.

- Large swales will run adjacent to Hollow Crescent and the western edge of the mews road capturing rainwater runoff and cleaning out contaminants.
- Porous surfaces in key landscape areas (Orchard Walk, and the two play spaces) will also contribute positively to the drainage strategy.
- Porous road surfaces are used along Hollows Crescent.
- Strips of rain gardens separate pedestrian routes from the road, contributing to the filtration of contaminants and storing rainwater, then allowing it to drain naturally into the soil.
- Due to the topography a large rain garden is proposed at the bottom of the Orchard Walk to accommodate rainwater.

Figure 3.19

Rain gardens

Water drains toward rain gardens, which are areas of wet-tolerant planting in slightly sunken beds. These gardens will help to capture runoff water and diffuse pollutants when infiltrated into the soil.

Permeable paving

Permeable block paving deals with rainfall and runoff where it falls, filtering and allowing water to pass through in urban areas.

Swales

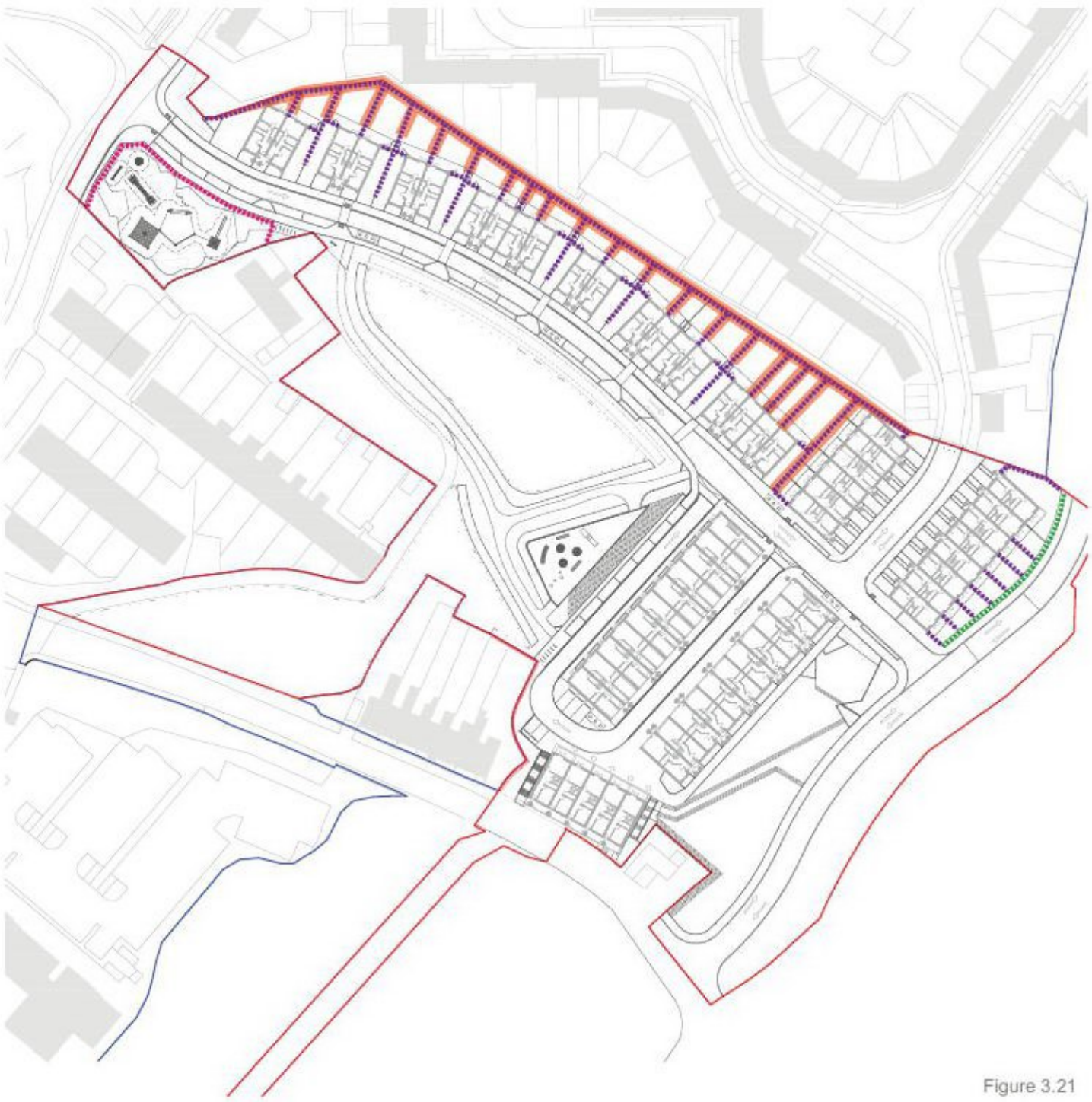
Swales are a key design feature of the landscape design where water management is celebrated.

Figure 3.20

3.3.10 Boundaries Strategy

A number of boundary types are used across the development in different scenarios. These look to allow visual permeability or a degree of screening where required. Materials relate back to the adjoining architecture.

Planting and simple railings are proposed for softer boundary conditions while close boarded fence and are used to the rear of residential boundaries.



Low Metal Railings Fence 1100mm

Close Board Timber Fence 1800mm

Retaining Wall with Close Boarded Fence on top varies

Gabion Wall

Figure 3.21

Close boarded timber fence

Bow top fence

Gabion wall

Figure 3.22

Gabion mattress

3.3.11 Surface Material Strategy

The materials detailed below form a structured palette that are coordinated to create visual unity and integrity within the landscape and adjoining architecture.

- Materials have been selected that are sympathetic to the local context and build on the place making of Hollow Wood.
- The design and placement of all elements has responded to how the site is navigated and understood on an intuitive level.
- Permeable paving and porous asphalt has been chosen as part of the SuDs strategy.

Figure 3.23

Richmond/silver grey brick paver mix

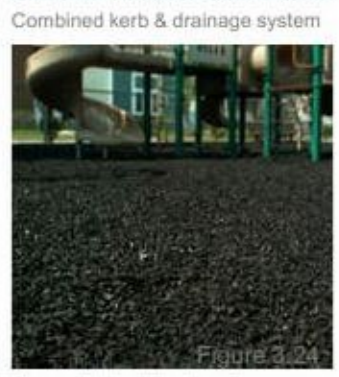
Porous asphalt light buff

Silver grey granite setts

Porous asphalt light grey

Combined kerb & drainage system

Self binding gravel



Bounded rubber bark

Figure 3.24

The materials listed are indicative:

- Paving 01 Stretcher Bond 80% Richmond Blend 20% Granite Grey Brick Pavers
- Paving 02 High Performance Porous asphalts Light Buff
- Paving 03 Silver Grey Granite Setts 100 x 100 x 100
- Paving 10 High Performance porous asphalts Light Grey
- Paving 04 Herringbone 80% Richmond 20% Granite Grey Brick Pavers
- Paving 05 Conservation Beany Block Combined Kerb and Drainage system
- Paving 07 Bounded Rubber Bark Play Surfacing Play Areas
- Paving 08 Commercial Bark 0 - 50mm for Woodland Play Space
- Paving 09 Golden Amber Self Binding Gravel

3.3.12 Furniture, Fixings and Equipment Strategy

The materiality and types of furniture, fixings and equipment for Zone 1A follow on from the approach in the outline application. The overall strategy for Purfleet is to cohesively use a palette of FF&E elements across the areas and phases. The materials used form a structured palette, coordinated to create visual unity and integrity within the landscape and with the adjoining architecture. Hard landscape elements have been selected to be of a physically robust quality appropriate to the site. Timber bollards are introduced at the connection with Caspian Way to restrict to one-way access (designed to allow for emergency access).

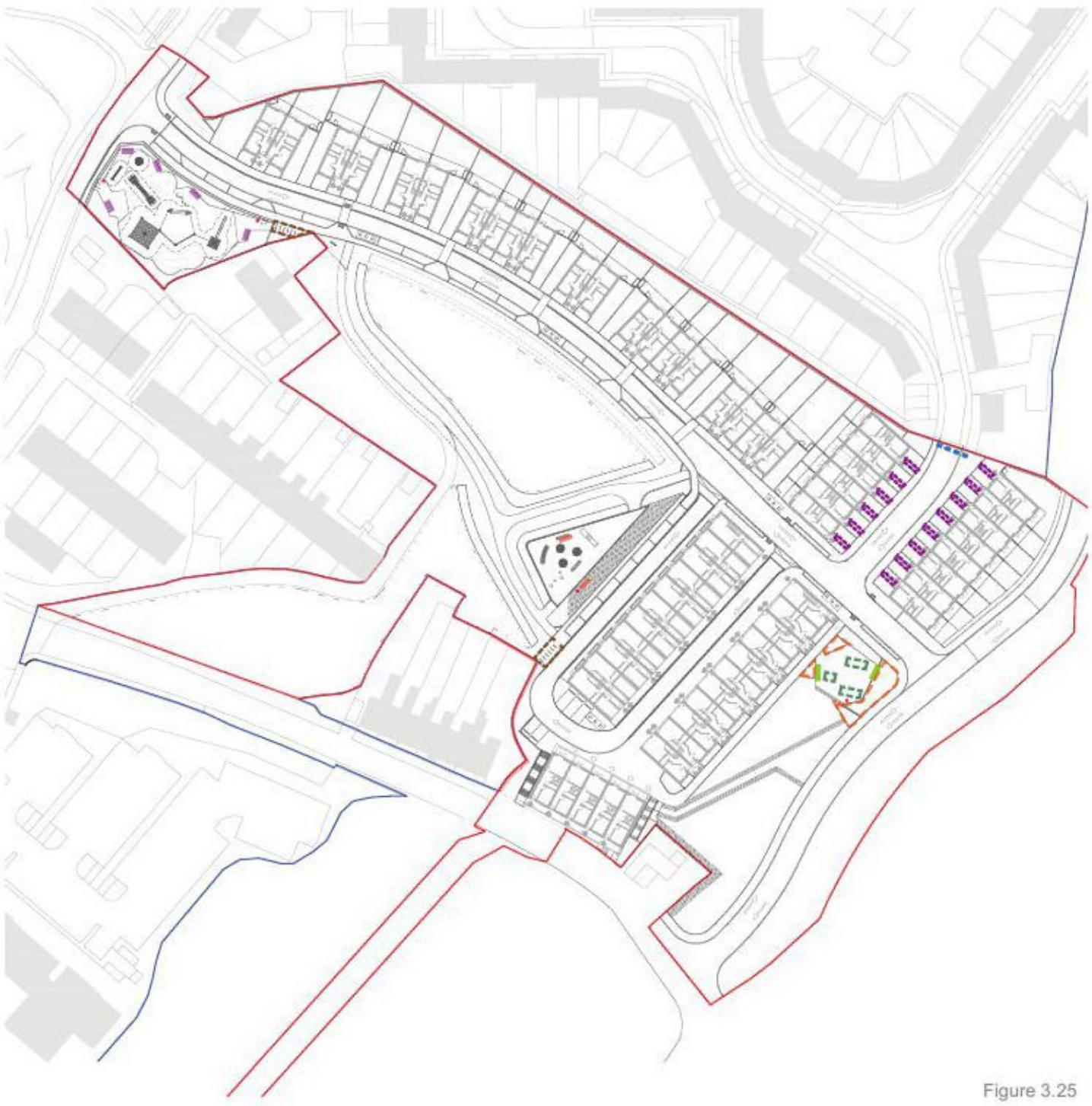


Figure 3.25


Bench seat


Bench Top


Corten planters


Cycle storage with green roof


Timber bollards


Corten bin


Picnic set


Figure 3.26
Cycle stand

3.4 Landscape Detail Areas

3.4.1 Orchard Walk

The Orchard Walk plays a crucial role in providing spaces for communities existing and new residents in the community. Materials have been carefully selected to relate to the context and elements of Purfleet's historical past; from steel planters; the chalk and flint gabions; to the thick hardwood bench tops.

Purfleet's botanical past also influences this space with the variety of species of fruit trees that can be freshly squeezed for juices, eaten fresh or to provide an ingredient as part of a dish that can be shared with the community.

A series of bug hotels will be placed around the orchard, helping to pollinate and to improve biodiversity. The orchard is tiered to address the topography of the site of which reveals the wider landscape.

Plan: Orchard Walk

Figure 3.27

Healthy eating

Community managed

Natural materials

Planted edges

Community engagement

Resin bound access

Picnic areas

Figure 3.28

Orchard Area

Figure 3.29

3.4.2 Play Area

The Play Area has a range of natural, playable elements, coupled with prescriptive, proprietary play elements offering a wide range of play experiences and physical challenges for children. Inclusive play has been integrated to provide play for all children to play together. Seating areas are located to the periphery along with tree and low level planting providing a pleasant backdrop.

Figure 3.30

1 Big Suspension Bridge / Retention Ditch

2 Cradle Swing Special

3 Climbing Forest

Figure 3.31

4 Balancing logs / reused timber logs

Natural Play

Figure 3.32

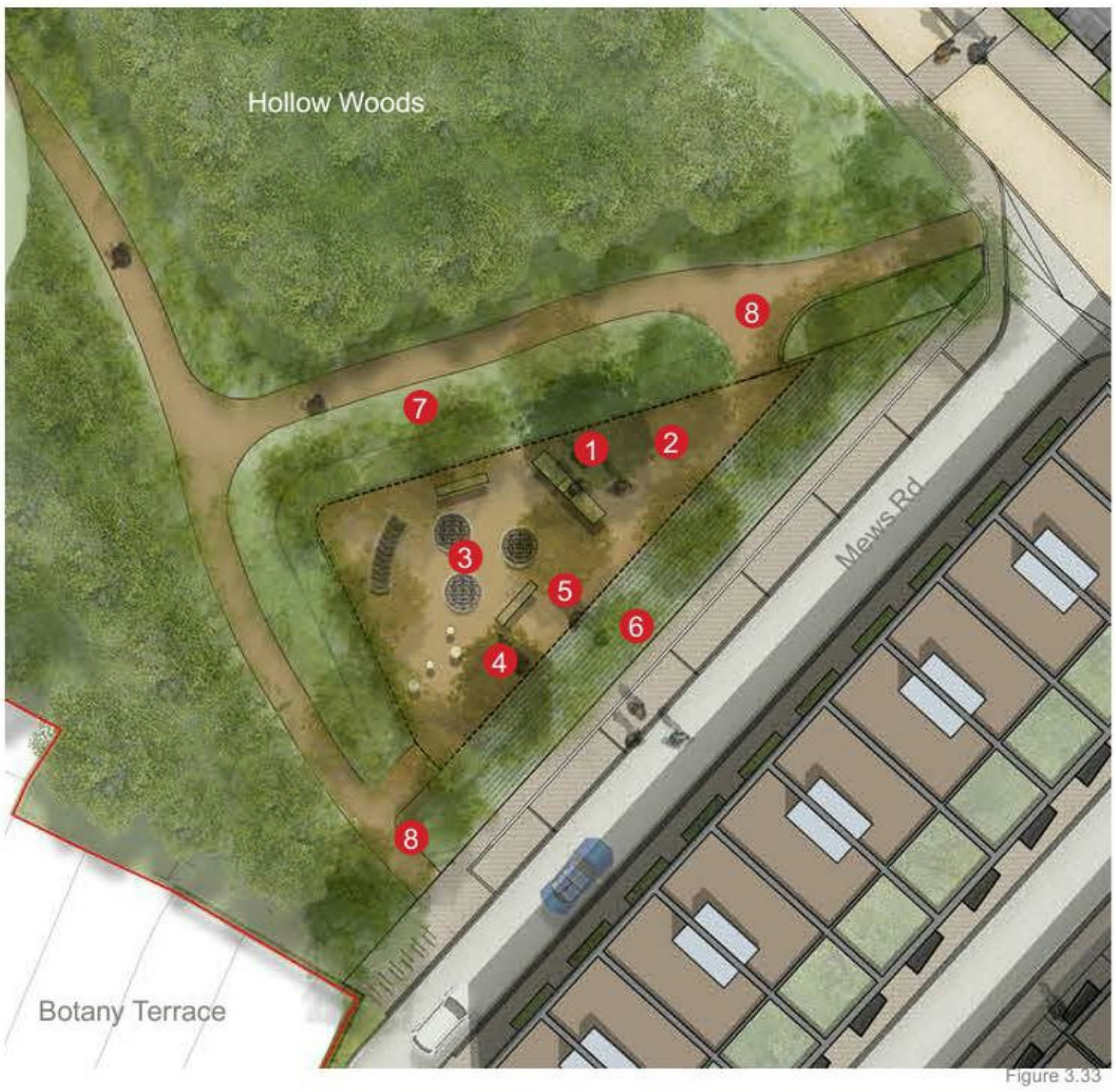
3.4.3 Woodland Play

The woodland play space offers several activities to encourage social interaction through a series of physical and imaginative opportunities. This play space is a natural approach rather than the use of play equipment. The space uses natural elements found in the woodland encouraging children to go outside. In this environment children can experience the challenges and develop real skills and abilities. We have developed a design framework which increase biodiversity and at the same time supports creativity and problem-solving skills.

We believe with this framework; we can encourage local schools to become involved giving their pupils the opportunity to create mazes and dens using willow, or other materials from the woodland.

With the careful planning of thinning and coppicing, the woodland promotes sustainability with the reuse of materials, for example:

- Logs which can be used to create bug hotels
- Stumps become steps or obstacles to climb
- Artistic skills such as painting stones and rocks which can then be used for games and puzzles
- Mounds and ditches encourage play of children splashing in puddles with their wellies; throwing sticks and stones in standing water or rolling and sliding down the slopes
- Boulders thoughtfully placed provide a climbing wall



1 Ditches / Hollows / Retention Pond

2 Bug Hotels

3 Willow Dens

4 Hollow Wood Puzzles

5 Willow Tunnel

6 Swale

7 Woodland Buffer

8 Entrance and Exit

Figure 3.33

Willow Dens, Structures & Stepping Logs

Figure 3.34

Figure 3.35

Willow Tunnel

Figure 3.36

Figure 3.37

Willow Dens, Structures & Stepping Logs

Figure 3.38

Figure 3.39

Access

4.1 Access Statement

4.1.1 Policy Approach

The scheme is designed to accommodate access requirements for everyone, thereby contributing to a sustainable environment. Access requirements are governed by the Equality Act 2010.

All units are designed to meet Part M (Category 1) of Schedule 1 of the Building Regulations 2010. All dwellings have direct access from street level.

Fully accessible dwellings for wheelchair users will be provided at Thurrock Council's requirement 3% (CSTP 1 4.ii) across the whole PCRL masterplan. In the first construction phase there are no fully wheelchair accessible dwellings (in compliance with Part M (3) of the building regulations). These will be provided within future development zones.

Entrances are secure and well-sheltered. Dwellings have secure letter boxes within the design of the front door. The external lighting design will be developed in compliance with guidance in the Institution of Lighting Engineers Guidance noted for the reduction of obtrusive light, 2005.

4.1.2 Vehicle access & Parking

The primary access points to the site are from London Road and Church Hollow where the proposals tie into the existing road network. There is one additional tie-in to the existing road network at Caspian Way. This connection is one-way, exit only from Caspian Way Estate (deisgned to allow for emergency access). The mews street is one-way, traffic will drive south on the eastern (central mews) road, and north on the western (woodland) road.

The development provides a minimum of 1:1 parking for each dwelling with a visitor parking ratio of 1 space to 4 dwellings. The housing on Hollow Woods achieve 2 parking spaces per dwelling. The proposals also provide 4 dedicated parking spaces for the residents of Botany Terrace, who currently must park on London Road.

The proposed parking ratio has been determined within the following context:

- Very close proximity of Zone 1A to the existing train station,
- Proximity to public transport and upgrades likely as part of the masterplan development,
- Very close proximity to the proposed new town centre,
- Enhancement of public amenity and landscaping to make Purfleet more walkable, promoting modal shift.

Parking spaces are provided at a minimum size of 2.5 x 3.0 m. The houses on Hollow Woods have larger parking spaces, and all parallel spaces have a minimum length of 6.0 m.

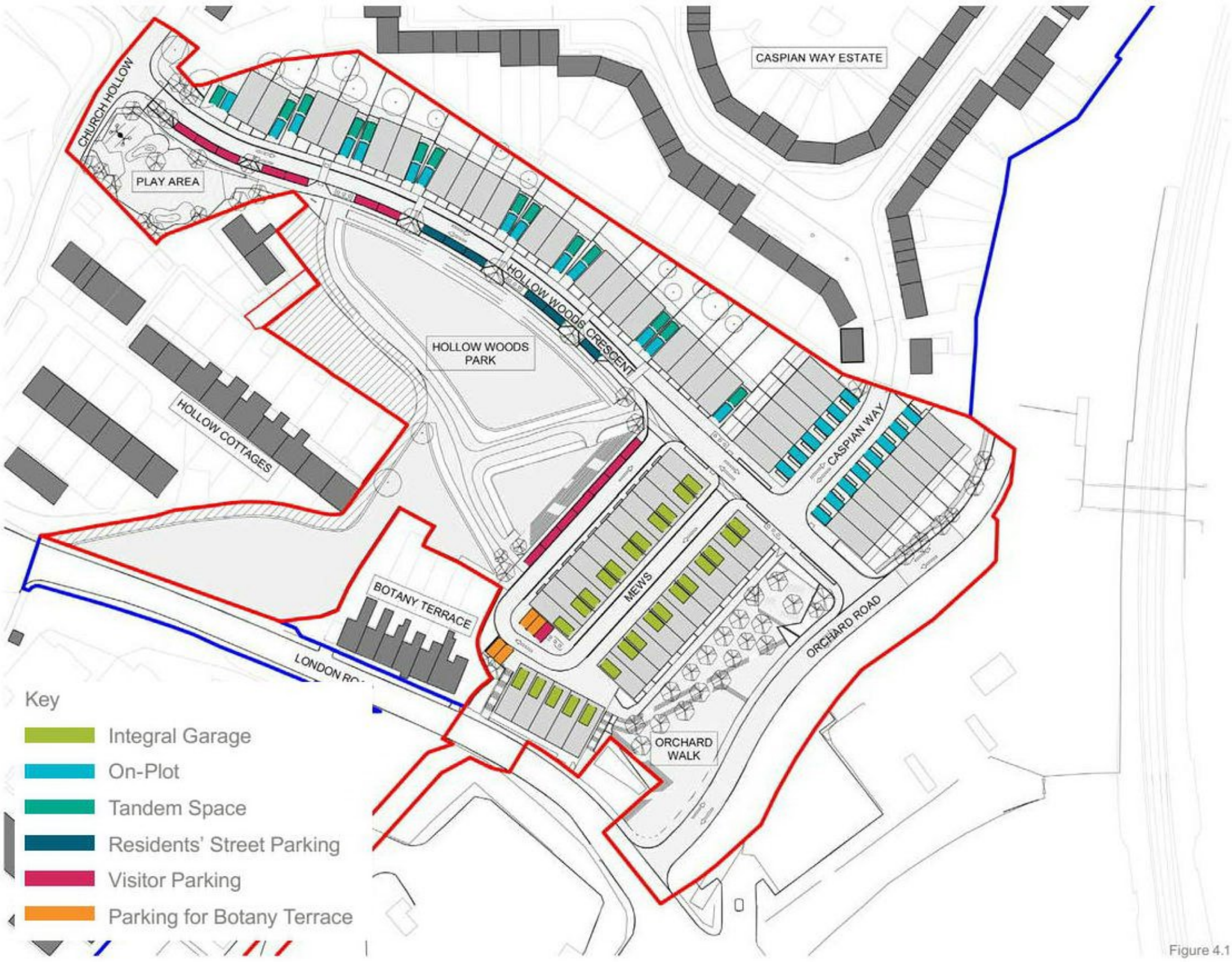


Figure 4.1

4.1.3 Walkability & Pedestrian Access

The site plan is designed with future connection to, and integration with, the Purfleet masterplan in mind. This will enable easier access to the train station and amenities for future residents of the proposed scheme as well as for the existing residents in Purfleet.

All public areas of the site are fully accessible. The design of new site levels was made in a way to ensure that the road, and corresponding pavement, levels are never greater than 1 in 60 and are therefore fully accessible.

Through Hollow Woods the site levels follow the existing topography. The exception is the mews street which has a small amount of level change to ensure the road levels are suitable for vehicle and wheelchair access. Across the proposal there is reasonable provision of pavements for safe pedestrian access throughout, including appropriate crossing points with dropped kerbs and tactile paving.

4.1.4 Cycling

The PCRL masterplan aims to promote healthy living and modal shift. With this future ambition in mind every dwelling has the capacity to securely store two bicycles, either in a private garage or in a separate, secure cycle store located on-plot. There are no segregated cycle routes proposed in Zone 1A, cycles will share the low traffic street network.

4.1.5 Public Transport

There are two existing bus routes in Purfleet, there will not be any additional bus stops within the boundary of Zone 1A.

The existing train station and the proposed future train station as well as bus stops are all within 7 minute walk.

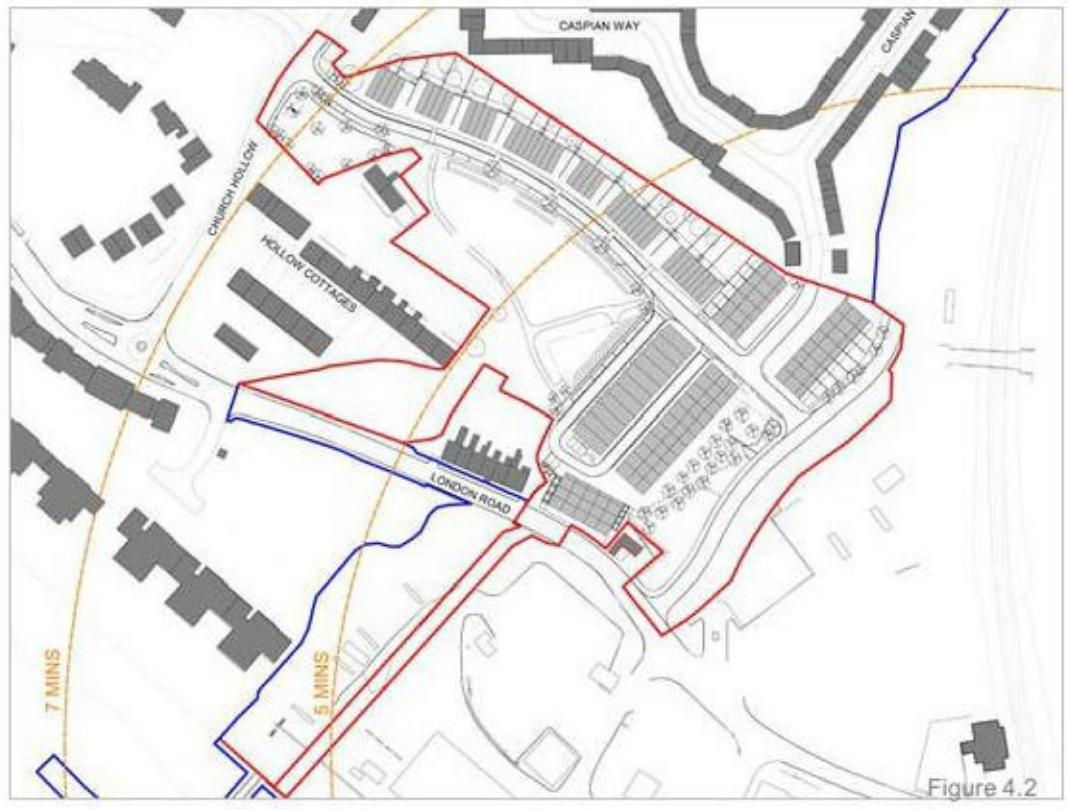


Figure 4.2

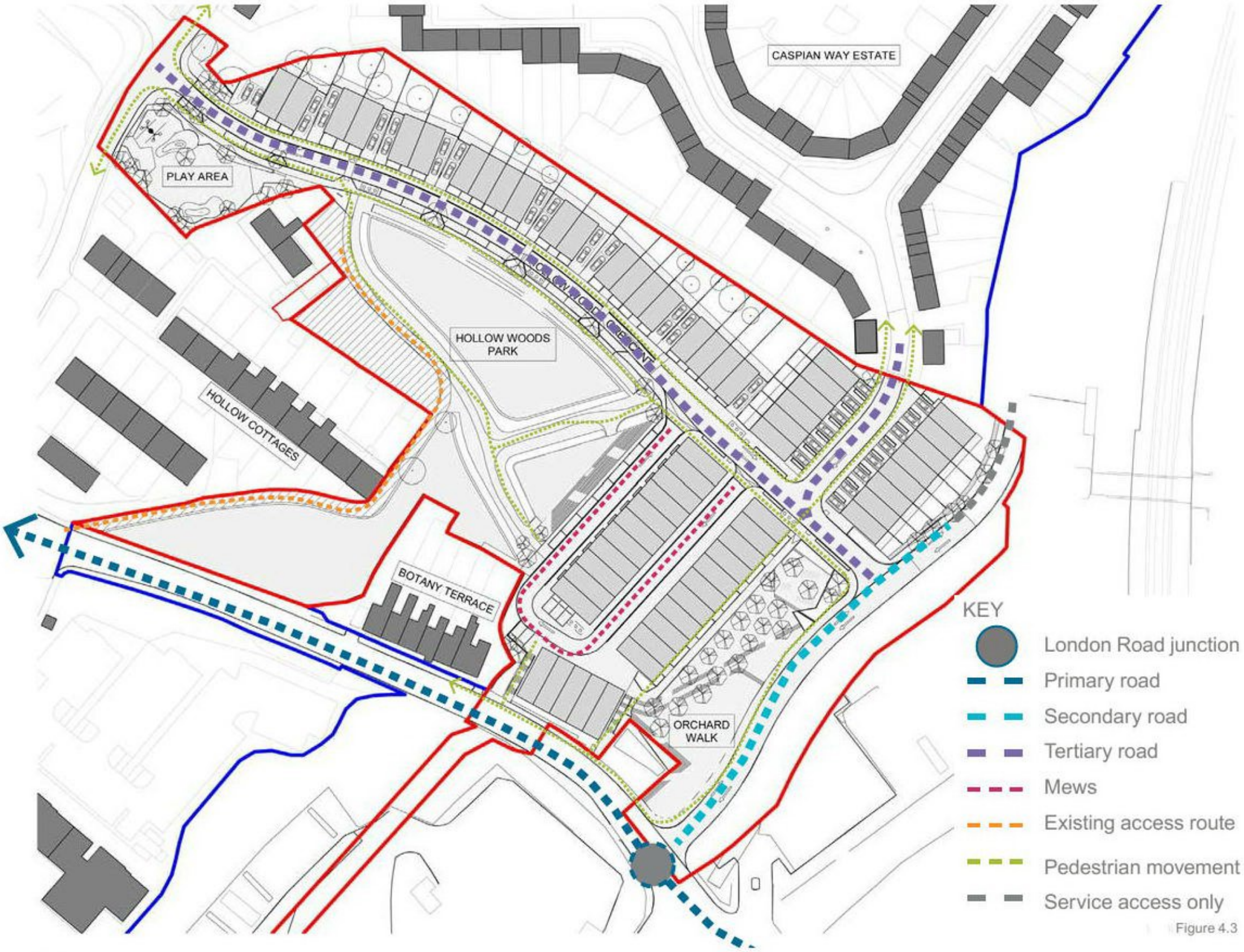


Figure 4.3

4.1.6 Refuse Strategy

The proposals seek to introduce a communal waste system, removing wheelie bins from the streetscape. The communal system provides central deposit points, which are linked to secure underground storage containers that will be emptied using a refuse vehicle with specialist equipment.

The design drivers behind initiating a communal waste system are:

- To remove unsightly wheelie bins from the streetscape, thus reducing potential vandalism of wheelie bins
- The ability to 'hide' large waste storage containers below ground, this is particularly appealing within the Conservation Area
- Reduction in odour of waste stored underground
- Encouraging recycling and waste separation

The 5 communal deposit points have been designed in line with standard principles of communal waste systems with regards to storage capacity, travel distances and vehicle collection. Each location will provide enough storage for residual, dry-recycleable and kitchen/garden waste in 3 separate bins.

Figure 4.4

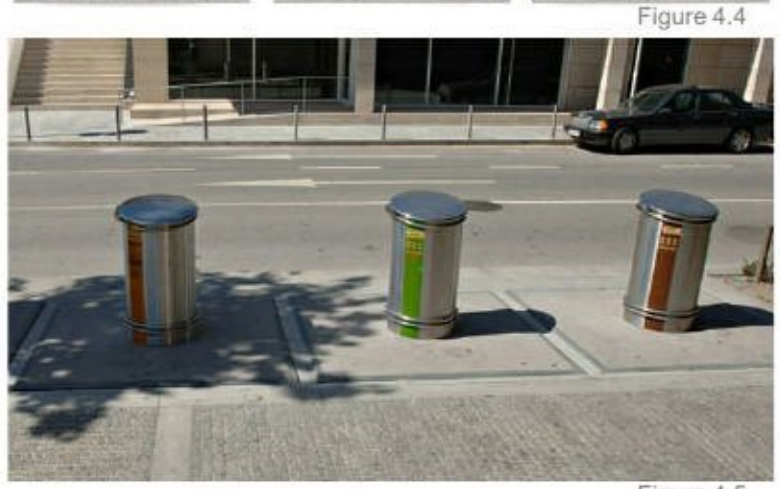


Figure 4.5

Figure 4.6

4.1.7 Views and Orientation

All units have dual aspect and have at least one elevation facing a public street. This relationship with the proposed streets means the built form and building orientation will help residents and visitors alike, navigate the main routes through the site.

4.1.8 Signage

Local signs will help residents and visitors orientate themselves within the scheme but will also reference the existing amenities and the surrounding context. This will become increasingly beneficial as the rest of the PCRL masterplan development proceeds.

The scheme is further supplemented by information boards in appropriate locations close to amenity spaces which will feature a map of the scheme and adjacent areas including Rainham Marshes with information regarding the ecological mitigation and green infrastructure. This is important in educating residents and visitors alike as to the range of wildlife and species that can be found. This technique of increasing awareness aims to increase protection of the wildlife and ecology whilst encouraging residents to spend time outdoors and actively engaging with their surroundings.

4.1.9 Lighting Design

All lighting within the site will be developed to ensure all entrances are well lit. All lighting will be energy efficient. Consideration will be given to the recommendations of the ecology report with all lights specified with downward facing baffles to minimise excess light pollution and its impact on migrating animal species, particularly bats. Street lighting locations are shown on the plans submitted.

4.1.10 Security

The design of the scheme ensures the development of Zone 1A is a safe and secure place to be. The scheme has been designed for a high level of natural surveillance. For example, ensuring habitable rooms occupy the ground floor at the front of the property, locating windows within the end wall of a terrace, wide, well-lit pavements and well-observed public space.

CGI: Hollow Woods Crescent

Figure 4.7

Image Credits

Cover image Sketch of PCRL Illustrative Masterplan
Image produced by KSS Design Group, 2018
0.1 CGI: Birds-eye view
Image produced by Preconstruct, 2018

1. Context

Cover image Sketch of London Road
Image produced by KSS Design Group, 2018
1.1 Masterplan Key Plan
Image produced by KSS Design Group, 2018
1.2 Aerial Image of Zone 1A
Drone Image by bee aerial, 2016
1.3 PCRL Illustrative Masterplan
Image produced by Exterior Architecture, 2017
1.4 Outline application parameter plan
Produced by KSS Design Group, 2017
1.5 Outline application parameter plan
Produced by KSS Design Group, 2017
1.6 Outline application parameter plan
Produced by KSS Design Group, 2017
1.7 Outline application parameter plan
Produced by KSS Design Group, 2017
1.8 Outline application parameter plan
Produced by KSS Design Group, 2017
1.9 Outline application parameter plan
Produced by KSS Design Group, 2017
1.10 Sectional representation of parameter plan
Produced by KSS Design Group, 2017
1.11 Sectional representation of parameter plan
Produced by KSS Design Group, 2017
1.12 Sectional representation of parameter plan
Produced by KSS Design Group, 2017
1.13 Site constraints plan
Produced by KSS Design Group, 2017
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Image taken by KSS Design Group, 2017
1.15 Hollow Cottages
Image taken by KSS Design Group, 2017
1.16 Harlow Cottage
Image taken by KSS Design Group, 2017
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1.18 Aerial image of Caspian Way
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1.19 Caspian Way
Image taken by KSS Design Group, 2018
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Image taken by KSS Design Group, 2018
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2. Design

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Image produced by KSS Design Group, 2018
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Image produced by KSS Design Group, 2018
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2.22 London Road Elevation
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Image produced by KSS Design Group, 2018
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Image produced by KSS Design Group, 2018

3. Landscape

Cover image Sketch of Woodland Play
Image produced by Exterior Architecture, 2018
3.1 A creative core
Nathan Valentine, 2014. http://worldredeye.com/2014/02/new-worldsymphony-2014-the-art-of-the-possible/
3.2 Botanical exploration
Photograph by Exterior Architecture, 2016

3.3 Historic Industry

Photograph by Exterior Architecture, 2016

3.4

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3.5 Zone 1A Illustrative Masterplan

Image produced by Exterior Architecture, 2018

3.6 Movement & Access Strategy

Image produced by Exterior Architecture, 2018

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Image produced by Exterior Architecture, 2018

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Image produced by Exterior Architecture, 2018

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3.32 Sketch image - Play Area

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4. Access

Cover image Sketch of Orchard Walk

Image produced by KSS Design Group, 2018

4.1 Parking Plan

Image produced by KSS Design Group, 2018

4.2 Zone 1A walking times

Image produced by KSS Design Group, 2018

4.3 Movement and circulation plan

Image produced by KSS Design Group, 2018

4.4 Underground waste storage system

http://sotkon.com/2/modularity

4.5 Underground waste storage system

https://www.sotkon.com/en/4/gallery

4.6 Refuse strategy

Image produced by KSS Design Group, 2018

4.7 CGI: Hollow Woods Crescent

Image produced by Preconstruct, 2018

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